VIDHYODAY
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INDEX

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 1
RATIO, PROPORTION, INDICES & LOGARITHMS

1. $y^{y\sqrt{y}} = (y\sqrt{y})^{y}$ then y

(A) $\frac{3}{2}$

(B) $\frac{9}{4}$

(C) $\frac{27}{8}$

(D) $\frac{81}{16}$

2. $\log\left(\frac{a+b}{4}\right) = \frac{1}{2}(\log a + \log b)$ then $\frac{a}{b} + \frac{b}{a}$ is

(A) 16

(B) 18

(C) 14

(D) 20

3. $\log\left(\frac{ab}{a^2}\right) + \log\left(\frac{bc}{b^2}\right) + \log\left(\frac{ac}{c^2}\right)$

(A) 1

(B) 0

(C) 2

(D) 3

4. $\log_4 x = \frac{-3}{2}$ then x is

(A) 4

(B) $\frac{1}{4}$

(C) 8

(D) $\frac{1}{8}$

5. $2^x . 3^y = 108, 3^{3x-y} = 27$ find x & y

(A) (3, 2)

(B) (2, 3)

(C) (1, 3)

(D) (3, 1)

6. If $\frac{p}{q} = \frac{r}{s}$ then which of the following isn't true

(A) $\frac{p}{r} = \frac{q}{s}$

(B) $\frac{p+q}{q} = \frac{r+s}{s}$

(C) $\frac{q}{q-p} = \frac{s}{s-r}$

(D) $\frac{p}{s} = \frac{r}{q}$

7. $\frac{2^n + 2^{n-1}}{2^{n+1} - 2^n}$ Solve,

[Dec. 2009 & 15, May 2018]

(A) $\frac{1}{2}$

(B) $\frac{5}{2}$

(C) $\frac{3}{2}$

(D) 1

8. If A invest Rs. 1,26,000, B invest Rs. 84,000, C invest Rs. 2,10,000 & Total Profit is 242000 than Profit Ratio is

(A) 3:2:5

(B) 3:5:7

(C) 5:3:7

(D) 3:5:2

9. If the ratio of angles of a triangle are 1:2:6 find obtuse angle

(A) 100°

(B) 120°

(C) 150°

(D) 140°

10. $\left[\log_{10}\sqrt{25} - \log_{10}(2)^3 + \log_{10}(4^2)\right]^x$ is

[Dec. 2009]

(A) -1

(B) 0

(C) 1

(D) $\frac{1}{2}$

11. What is the fourth proportion of x, 2x, x + 1?

[June 2009]

(A) $\frac{x+1}{2}$

(B) $2(x+1)$

(C) $2x+1$

(D) $x+\frac{1}{2}$

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12. $\{1-\{1-\{1-x^2\}^{-1}\}^{-1}\}^{-1/2}$ **[June 2009]**

(A) x

(B) $\frac{1}{x}$

(C) x^2

(D) x^3

13. If $\frac{p}{q}=\frac{2}{3}$ find $\frac{2p+q}{2p-q}$ **[June 2009]**

(A) 5

(B) 3

(C) 1

(D) 7

14. $log_4[x^2+x]-log_4[x+1]=2\ findx$

(A) 4 **[June 2009]**

(B) 8

(C) 16

(D) 32

15. If log(m+n) = logmn then **[June 2009]**

(A) $n=\frac{m}{m+1}$

(B) $m=n^n$

(C) $m=\frac{n}{n-1}$

(D) mn = 1

16. $\log_2 5\times\log_5 2$

(A) 1

(B) 0

(C) $\log_5 2$

(D) $\log_2 5$

17. $2^x.3^y.5^z=360$, then x, y, z respectively are

(A) (1, 2, 3) **[Dec. 2009]**

(B) (2, 1, 3)

(C) (3, 2, 1)

(D) Not

18. $\log_a b+\log_a c=0$ then what is the relation between b & c **[June 2010]**

(A) b = c = 1

(B) b and c are reciprocals

(C) b = c

(D) $b^2=c$

19. Number of students in two classes in the ratio of 5:7. If 10 students are removed from both the classes then their ratio becomes 4:6 Number of students are

(A) (20, 28) **[June 2010]**

(B) (40, 56)

(C) (50, 70)

(D) Not

20. Two number are in the Ratio 49:68 What must be added to each of them such that their ratio becomes 3:4 **[June 2010]**

(A) 5

(B) 6

(C) 7

(D) 8

21. $2^x-2^{x-1}=4$ find x^x

(A) 4

(B) 27

(C) 256

(D) None

22. $2\log x+2\log x^2+2\log x^3+\ldots\ldots\ldots+2\log x^n$ **[Dec. 2010]**

(A) nlogx

(B) (n+1)logx

(C) n(n+1)logx

(D) $\frac{(n+1)}{2}$logx

23. $\frac{log_{10}(x)-3}{2}+\frac{11-log_{10}(x)}{3}=2, findx?$

(A) 10 **[Dec. 2010]**

(B) 100

(C) $\frac{1}{100}$

(D) $\frac{1}{10}$

24. A : B = 2 : 5 then $\frac{10A+3B}{5A+2B}$ **[Dec. 2010]**

(A) $\frac{7}{4}$

(B) $\frac{8}{3}$

(C) $\frac{14}{5}$

(D) $\frac{15}{7}$

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25. In a film shooting, A and B received money in a certain ratio and B and C also received the Money in the same ratio. If A gets Rs. 1,60,000 and C gets Rs. 2,50,000. Find the amount received by B? **[June 2011]**

(A) 100000
(B) 150000
(C) 200000
(D) 175000

26. If the ratio of (5x-3y) and (5y-3x) is 3:4, then the value of x:y is: **[June 2011]**

(A) 5:9
(B) 27:29
(C) 14:13
(D) 9:4

27. If n = m! where ('m' is a positive integer > 2) then the value of: **[June 2011]**

$$\frac{1}{\log_2 n}+\frac{1}{\log_3 n}+\frac{1}{\log_4 n}+..+\frac{1}{\log_m n}$$

(A) logn
(B) nlogm1
(C) 0
(D) 1

28. The ratio compounded of 4:5 and sub-duplicated of "a":9 is 8:5. Then value of "a" is **[Dec. 2011]**

(A) 16
(B) 9
(C) 4
(D) 36

29. If $\log_2 x + \log_4 x = 6$, then the value of x is

(A) 2 **[Dec. 2011]**
(B) 8
(C) 16
(D) 32

30. If $\log_x y = 100$ and $\log_2 x = 10$ then the value of y **[June 2012]**

(A) $2^{\frac{1}{10}}$
(B) 2^{1000}
(C) $2^{\frac{1}{100}}$
(D) 2^{100}

31. Which of the following are not in proportion **[June 2012]**

(A) 6, 8, 5, 7
(B) 7, 3, 14, 6
(C) 18, 27, 12, 18
(D) 8, 6, 12, 9

32. The value of $\frac{3^{n+1}+3^n}{3^{n+3}-3^{n-1}}$ **[June 2012]**

(A) $\frac{3}{20}$
(B) $\frac{1}{9}$
(C) $\frac{1}{8}$
(D) $\frac{1}{6}$

33. Find the two numbers such that the mean proportional between them is 18 and third proportional between them is 144.

(A) (15, 24) **[Dec. 2012]**
(B) (9, 24)
(C) (9, 36)
(D) (8, 36)

34. If $\log_{10}5 + \log_{10}(5x+1) = \log_{10}(x+5)+1$ then x = **[Dec. 2012]**

(A) 3
(B) 2
(C) 1
(D) 0

35. Value of x, if $x \times x^{\frac{1}{3}} = \left(x^{\frac{1}{3}}\right)^x$ **[Dec. 2012]**

(A) 2
(B) 4
(C) 8
(D) 16

36. Which is True if $\frac{1}{ab}+\frac{1}{bc}+\frac{1}{ca}=\frac{1}{abc}$ **[Dec. 2012]**

(A) log (a+b+c) = 1
(B) log (abc) = 0
(C) log (abc) = 1
(D) log (a+b+c) = 0

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37. if $\left(\log_{\sqrt{x}}2\right)^2 = \log_x 2$ then x =

[June 2013]

(A) 2
(B) 4
(C) 8
(D) 16

38. Triplicate ratio of 4:5 is **[June 2013]**

(A) $\frac{\sqrt[3]{4}}{\sqrt[3]{5}}$
(B) $\frac{64}{125}$
(C) $\frac{2}{\sqrt{5}}$
(D) $\frac{16}{25}$

39. The mean proportion between 24 and 54 is _____ **[June 2013, May 2018]**

(A) 40
(B) 32
(C) 36
(D) 30

40. Find the value of $\left[\log_y x.\log_z y.\log_x z\right]^3$

[Dec. 2013]

(A) 2
(B) 1
(C) 0
(D) logxyz

41. Find the value of $\log_4 9 \log_3 2$

[Dec. 2013, May 2018]

(A) 1
(B) 2
(C) $\frac{3}{2}$
(D) $\frac{2}{3}$

42. If $\sqrt[3]{a} + \sqrt[3]{b} + \sqrt[3]{c} = 0$ then find the value of $\left[\frac{a+b+c}{3}\right]^3$

[Dec. 2013]

(A) a+b+c
(B) abc
(C) $\frac{a+b+c}{9}$
(D) $\frac{abc}{9}$

43. The ratio of three numbers is 1:2:3 and sum of their squares is 504 then the numbers are

[Dec. 2013]

(A) 6, 12, 18
(B) 3, 6, 9
(C) 4, 8, 12
(D) 5, 10, 15

44. If $x = \log_{24}12 : y = \log_{36}24 : z = \log_{48}36$ then xyz+1 = ?

[June 2014]

(A) 2xy
(B) 2xz
(C) 2yz
(D) 2xyz

45. If $x^2+y^2 = 7xy$ then $\log\frac{1}{3}(x+y)$

(A) $\frac{1}{2}(\log x+\log y)$ **[June 2014]**
(B) log(xy)
(C) $\log(x+y)^3$
(D) $\frac{1}{3}\log(x+y)$

46. If $(25)^{150} = (25x)^{50}$ then the value of x will be **[June 2014]**

(A) 5
(B) 25
(C) 125
(D) 625

47. The value of $\left(\frac{y^a}{y^b}\right)^{a^2+ab+b^2}\left(\frac{y^b}{y^c}\right)^{b^2+bc+c^2}\left(\frac{y^c}{y^a}\right)^{c^2+ca+a^2}$

(A) 0 **[June 2014]**
(B) 1
(C) $\frac{1}{y}$
(D) y^{a+b+c}

48. If P is 25% less than Q and R is 20% higher than Q the Ratio of R and P

(A) 5:8 **[June 2014]**
(B) 5:3
(C) 8:5
(D) 3:5

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49. A person has assets worth Rs. 1,48,200. He wishes to divide it amongst his wife, son and daughter in the ratio 3:2:1 respectively. From the assets the share of his son will be:

[June 2014]

(A) 45,000
(B) 39,600
(C) 49,400
(D) 52,000

50. If x:y = 2:3 then (5x+2y) : (3x-y) =

[June 2014]

(A) $\frac{16}{3}$
(B) $\frac{15}{7}$
(C) $\frac{4}{3}$
(D) $\frac{8}{3}$

51. If logx = a+b; logy = a-b then $\log\left(\frac{10x}{y^2}\right)$

[Dec. 2014]

(A) 1-a+3b
(B) a-1+3b
(C) a+3b+1
(D) 1-b+3a

52. $x = 1+\log_p qr$, $y = 1+\log_q rp$, $z = 1+\log_r pq$, find $\frac{1}{x}+\frac{1}{y}+\frac{1}{z}$

[Dec. 2014]

(A) 1
(B) 2
(C) 3
(D) 4

53. The first, second and third month salaries of a person are in the ratio 2:4:5. The difference between the product of the salaries of first 2 months & last 2 months is 4,80,00,000. Find the salary of the second month

[Dec. 2014]

(A) 9000
(B) 7500
(C) 7000
(D) 8000

54. If $p^x = q$, $q^y = r$, $r^z = p^6$ then the value of xyz is

[June 2015]

(A) 1
(B) $\frac{1}{6}$
(C) 6
(D) 3

55. $15(2p^2 - q^2) = 7pq$ where are positive then p:q

[June 2015]

(A) 3:5
(B) 5:6
(C) 6:5
(D) 5:3

56. If one type of rice of cost Rs. 13.84 is mixed with another type of rice of cost Rs. 15.54 & the mixture is sold at Rs. 17.60 with a profit of 14.6% on selling price then in which proportion the two types of rice are mixed?

[June 2015]

(A) 3:7
(B) 4:5
(C) 7:3
(D) 5:3

57. Find the ratio of third proportional of 12 & 30 and mean proportional of 9, 25

[Dec. 2015]

(A) 5:2
(B) 5:3
(C) 5:4
(D) 5:1

58. $\log_3 5 \times \log_5 4 \times \log_2 3$

[Dec. 2015]

(A) log2
(B) log3
(C) 2
(D) 1

59. What must be added to each of the number 10, 18, 22, 38 to make them proportional

[Dec. 2015]

(A) 1
(B) 2
(C) 3
(D) 4

60. The integral part of logarithm is called _____, and the decimal part of a logarithm is called _____.

[June 2016]

(A) Mantissa, Characteristic
(B) Characteristic, Mantissa
(C) Integer, Fraction
(D) Fraction, Integer

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61. The value of $\frac{1}{\log_3 60}+\frac{1}{\log_4 60}+\frac{1}{\log_5 60}=$

(A) 1
(B) 2
(C) log 5
(D) log 2

62. If $2^{x-y}=2^{2x-y}=\sqrt{8}$ then the respective value of x and y are _____

(A) $\left(\frac{3}{2},0\right)$
(B) $\left(0,\frac{-3}{2}\right)$
(C) $\left(0,\frac{3}{2}\right)$
(D) $\left(\frac{-3}{2},0\right)$

63. x, y, z together starts a business. If x invests 3 times as much as y invests and y invests two third of what z invests, then the ratio of capitals of x, y, z is _____ **[Dec. 2015]**

(A) 6:2:3
(B) 2:3:6
(C) 3:6:2
(D) 3:4:6

64. Given log 2 = 0.3010 and log 3 = 0.4771 then the value of log 24 **[Dec. 2016]**

(A) 1.0936
(B) 1.3801
(C) 1.6258
(D) 1.1937

65. If $3^x=5^y=(75)^z$ then **[Dec. 2016]**

(A) $\frac{1}{x}+\frac{1}{z}=\frac{2}{y}$
(B) $\frac{1}{x}+\frac{2}{z}=\frac{1}{y}$
(C) $\frac{1}{x}+\frac{2}{y}=\frac{1}{z}$
(D) $\frac{1}{z}+\frac{1}{y}=\frac{2}{z}$

66. A bag contains 23 numbers of coins in the form of 1 rupee, 2 and 5 rupee coins. The total sum of the coins is Rs. 43. The ratio between 1 rupee and 2 rupees coins is 3:2. Then the number of 1 rupee coins. **[Dec. 2016]**

(A) 16
(B) 12
(C) 10
(D) 8

67. If $x=3^{1/3}+3^{-1/3}$ then find value of $3x^3-9x$ **[June 2009]**

(A) 3
(B) 9
(C) 12
(D) 10

68. The recurring decimal 2.7777.....can be expressed as: **[Dec. 2010]**

(A) $\frac{24}{9}$
(B) $\frac{22}{9}$
(C) $\frac{26}{9}$
(D) $\frac{25}{9}$

69. The value of $(\log_y x \cdot \log_z y \cdot \log_x z)^3$ is

(A) 0 **[Dec. 2013]**
(B) –1
(C) 1
(D) 3

70. If log x = m + n and log y = m – n, then $\log\left(\frac{10x}{y^2}\right)=$ **[June 2015]**

(A) 3n – m + 1
(B) 3m – n + 1
(C) 3n + n + 1
(D) 3m + n + 1

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71. The value of $\left[\frac{x^2-(y-z)^2}{(x+z)^2-y^2}+\frac{y^2-(x-z)^2}{(x+y)^2-z^2}+\frac{z^2-(x-y)^2}{(y+z)^2-x^2}\right]$ is **[June 2016]**

(A) 0
(B) 1
(C) –1
(D) ∞

72. If $\log_4(x^2+x)-\log_4(x+1)=2$, then the value of X is: **[June 2016]**

(A) 2
(B) 3
(C) 16
(D) 8

73. Value of $\frac{1}{\log_3 60}+\frac{1}{\log_4 60}+\frac{1}{\log_5 60}$ is:

(A) 0 **[June 2016]**
(B) 1
(C) 5
(D) 60

74. If abc = 2, then the value of $\frac{1}{1+a+2b^{-1}}+\frac{1}{1+\frac{1}{2}b+c^{-1}}+\frac{1}{1+c+a^{-1}}$ is:

(A) 1 **[Dec. 2016]**
(B) 2
(C) 3
(D) $\frac{1}{2}$

75. If a : b = 2 : 3, b : c = 4 : 5 and c : d = 6 : 7, then a : d is: **[June 2017]**

(A) 24 : 35
(B) 8 : 15
(C) 16 : 35
(D) 7 : 15

76. The value of $\log(1^3+2^3+3^3+.....n^3)$ is equal to: **[June 2017]**

(A) 3 log 1 + 3 log 2 + ... + 3 log n
(B) 2 log n + 2 log (n+1) – 2 log 2
(C) log n + log (n+1) + log (2n+1) – log 6
(D) 1

77. If $a=\frac{\sqrt{6}+\sqrt{5}}{\sqrt{6}-\sqrt{5}}$ and $b=\frac{\sqrt{6}-\sqrt{5}}{\sqrt{6}+\sqrt{5}}$ then the value of $\frac{1}{a^2}+\frac{1}{b^2}$ is equal to:

(A) 480 **[June 2017]**
(B) 482
(C) 484
(D) 486

78. The ratio of the number of Rs. 5 coins and Rs. 10 coins is 8 : 15. If the value of Rs. 5 coins is Rs. 360, then the number of Rs. 10 coins will be: **[Dec. 2017]**

(A) 72
(B) 120
(C) 135
(D) 185

79. If $\log_3[\log_4(\log_2 x)]=0$, then the value of 'x' will be: **[Dec. 2017]**

(A) 4
(B) 8
(C) 16
(D) 32

80. If $\log\left(\frac{x-y}{2}\right)=\frac{1}{2}(\log x+\log y)$, then the value of $x^2+y^2=$_____. **[Dec. 2017]**

(A) 2xy
(B) 4xy
(C) $2x^2y^2$
(D) 6xy

81. If $\frac{1}{2},\frac{1}{3},\frac{1}{5}$ and $\frac{1}{x}$ are in proportion, then the value of 'x' will be: **[Dec. 2017]**

(A) $\frac{15}{2}$
(B) $\frac{6}{5}$
(C) $\frac{10}{3}$
(D) $\frac{5}{6}$

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82. If p : q is the sub-duplicate ratio of $p-x^2 : q-x^2$, then x^2 is: **[May 2018]**

(A) $\frac{p}{p+q}$

(B) $\frac{q}{p+q}$

(C) $\frac{qp}{p-q}$

(D) None

83. The value of the expression: $a^{\log_a b \times \log_b c \times \log_c d \times \log_d t}$ **[May 2018]**

(A) t

(B) abcdt

(C) (a + d + c + d + t)

(D) None

84. $\frac{3x-2}{5x+6}$ is the duplicate ratio of $\frac{2}{3}$ then find the value of x: **[Nov. 2018]**

(A) 2

(B) 6

(C) 5

(D) 9

85. $\frac{2^{m+1}x3^{2m+n+3}x5^{n+m+4}x6^{2n+m}}{6^{2m+n}x10^{n+1}x15^{m+3}}$ **[Nov. 2018]**

(A) 3^{2m-2n}

(B) 3^{2n-2m}

(C) 1

(D) None of the above

86. The ratio of two numbers are 3 : 4. The difference of their squares is 28 Greater no. is: **[Nov. 2019]**

(A) 8

(B) 12

(C) 24

(D) 64

87. The price of scooter and moped are in the ratio 7 : 9. The price of moped is Rs. 1,600 more than that of scooter. Then the price of moped is: **[Nov. 2019]**

(A) Rs. 7,200

(B) Rs. 5,600

(C) Rs. 800

(D) Rs. 700

88. $\log_{0.01} 10,000 = ?$ **[Nov. 2019]**

(A) 2

(B) –2

(C) 4

(D) –4

89. Value of $\left|9^{n+\frac{1}{4}} \times \frac{\sqrt{3 \times 3^n}}{3\sqrt{3^{-n}}}\right|^{\frac{1}{n}}$ **[Nov. 2019]**

(A) 9

(B) 27

(C) 81

(D) 3

90. If $x = \sqrt{3} + \frac{1}{\sqrt{3}}$ then

$$\left(x - \frac{\sqrt{126}}{\sqrt{42}}\right)\left(x - \frac{1}{x - \frac{2\sqrt{3}}{3}}\right) = ?$$

(A) $\frac{5}{6}$ **[Nov. 2019]**

(B) $\frac{6}{5}$

(C) $\frac{2}{3}$

(D) $-\frac{3}{5}$

91. If a : b = 3 : 7, then 3a + 2b : 4a + 5b = ?

(A) 23 : 47 **[Nov. 2020]**

(B) 27 : 43

(C) 24 : 51

(D) 29 : 53

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92. If $\log_a \sqrt{3} = \frac{1}{6}$, find the value of a: **[Nov. 2020]**

(A) 9
(B) 81
(C) 27
(D) 3

93. log 9 + log 5 is expressed as: **[Nov. 2020]**

(A) log 4
(B) $\log\frac{9}{5}$
(C) $\log\frac{5}{9}$
(D) log 45

94. If a : b = 9 : 4, then $\sqrt{\frac{a}{b}} + \sqrt{\frac{b}{a}} = ?$ **[Nov. 2020]**

(A) $\frac{3}{2}$
(B) $\frac{2}{3}$
(C) $\frac{6}{13}$
(D) $\frac{13}{6}$

95. The ratio of number of boys and the number of girls in a school is found to be 15 : 32. How many boys and equal number of girls should be added to bring the ratio to $\frac{2}{3}$? **[Nov. 2020]**

(A) 19
(B) 20
(C) 23
(D) 27

96. Find the value of a from the following: $\sqrt{(9)}^{-5} \times \sqrt{(3)}^{-7} = \sqrt{(3)}^{-a}$ **[Nov. 2020]**

(A) 11
(B) 13
(C) 15
(D) 17

97. Find the value of $\frac{3t^{-1}}{t^{-1/3}}$ **[Jan. 2021]**

(A) $\frac{3}{t^{2/3}}$
(B) $\frac{3}{t^{3/2}}$
(C) $\frac{3}{t^{1/3}}$
(D) $\frac{3}{t^2}$

98. If $\log_a(ab) = x$, then $\log_b(ab)$ is **[Jan. 2021]**

(A) $\frac{1}{x}$
(B) $\frac{x}{1+x}$
(C) $\frac{x}{x-1}$
(D) None of these

99. In a certain business A and B received profit in a certain ratio B and C received profits in the same ratio. If A gets Rs. 1600 and C gets Rs. 2500 then how much does B get? **[Jan. 2021]**

(A) Rs. 2,000
(B) Rs. 2,500
(C) Rs. 1,000
(D) Rs. 1,500

100. The ratio of two quantities is 15 : 17. If the consequent of its inverse ratio is 15, then the antecedent is; **[Jan. 2021]**

(A) 15
(B) $\sqrt{15}$
(C) 17
(D) 14

101. The salaries of A, B and C are in the ratio 2 : 3 : 5. If increments of 15%, 10% and 20% are allowed respectively to their salary, then what will be the new ratio of their salaries? **[Jan. 2021]**

(A) 3 : 3 : 10
(B) 10 : 11 : 20
(C) 23 : 33 : 60
(D) Cannot be determined

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102. The mean proportional between $12x^2$ and $27y^2$ is: **[Sept. 2024]**

(A) 18xy
(B) 81xy
(C) 8xy
(D) 19.5xy

103. If A : B = 5 : 3, B : C = 6 : 7 and C : D = 14 : 9 then the value of A : B : C : D is:

(A) 20 : 14 : 12 : 9 **[July 2021]**
(B) 20 : 9 : 12 : 14
(C) 20 : 9 : 14 : 12
(D) 20 : 12 : 14 : 9

104. A vessel contained a solution of acid and water in which water was 64%. Four litres of the solution were taken out of the vessel and the same quantity of water was added. If the resulting solution contains 30% acid, the quantity (in litres) of the solution, in the beginning in the vessel, was **[July 2021]**

(A) 12
(B) 36
(C) 24
(D) 2

105. If xy + yz + zx = –1 then the value of $\left(\frac{x+y}{1+xy}+\frac{z+y}{1+zy}+\frac{x+z}{1+zx}\right)$ is:

(A) xyz **[July 2021]**
(B) $\frac{-1}{yz}$
(C) $\frac{1}{xyz}$
(D) $\frac{1}{x+y+z}$

106. If $\log_4 x+\log_{16} x+\log_{64} x+\log_{256} x=\frac{25}{6}$ then the value of x is **[July 2021]**

(A) 64
(B) 4
(C) 16
(D) 2

107. Let $a=\frac{(\sqrt{5}+\sqrt{3})}{(\sqrt{5}-\sqrt{3})}$ and $b=\frac{(\sqrt{5}-\sqrt{3})}{(\sqrt{5}+(\sqrt{3})}$.
What is the value of a^2+b^2?

(A) 64 **[Dec. 2021]**
(B) 62
(C) 60
(D) 254

108. Incomes of R and S are in the ratio 7 : 9 and their expenditures are in the ratio 4 : 5. Their total expenditure is equal to income of R. What is the ratio of their savings?

(A) 23 : 36 **[Dec. 2021]**
(B) 28 : 41
(C) 31 : 43
(D) 35 : 46

109. A bag contains 105 coins containing some 50 paise, and 25 paise coins. The ratio of the number of these coins is 4 : 3. The total value (in Rs.) in the bag is

(A) 43.25 **[Dec. 2021]**
(B) 41.25
(C) 39.25
(D) 35.25

110. If $\log_{10} 3=x$ and $\log_{10} 4=y$, then the value of $\log_{10} 120$ can be expressed as

(A) x – y + 1 **[Dec. 2021]**
(B) x + y + 1
(C) x + y – 1
(D) 2x + y – 1

111. Find the value of $\log(x^6)$, if $\log(x)+2\log(x^2)+3\log(x^3)=14$.

(A) 3 **[Dec. 2021]**
(B) 4
(C) 5
(D) 6

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

112. The value of $\frac{6^{n+4}+3^{n+3}\times 2^{n+3}}{5\times 6^n+6^n}$ is: **[Dec. 2021]**

(A) 232
(B) 242
(C) 252
(D) 262

113. In a department, the number of males and females are in the ratio 3 : 2. If 2 males and 5 females join the department, then the ratio becomes 1 : 1. Initially, the number of females in the department is **[Dec. 2021]**

(A) 9
(B) 6
(C) 3
(D) 8

114. If, $\left(\frac{3a}{2b}\right)^{2x-4}=\left(\frac{2b}{3a}\right)^{2x-4}$, for some a and b, then the value of x is **[Dec. 2021]**

(A) 8
(B) 6
(C) 4
(D) 2

115. The value of $\left(1-\sqrt[3]{0.027}\left(\frac{5}{6}\right)\left(\frac{1}{2}\right)^2\right)$ is: **[Dec. 2021]**

(A) $\frac{11}{16}$
(B) $\frac{13}{16}$
(C) $\frac{15}{16}$
(D) 1

116. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets ₹ 1,000 more than D, what is B's share? **[Dec. 2022]**

(A) 2,000
(B) 1500
(C) 2500
(D) 1000

117. A group of 400 soldiers posted at border area had a provision for 31 days. After 28 days 280 from this group were called back. Find the number of days for which the remaining rations will be sufficient? **[Dec. 2022]**

(A) 3
(B) 6
(C) 8
(D) 10

118. By simplifying $(2a^3b^4)^6/[(4a^3b)^2\times(a^2b^2)]$, the answer will be **[Dec. 2022]**

(A) $4a^2b^3$
(B) $4a^6b$
(C) $4a^{10}b^{10}$
(D) $4a^{10}b^{20}$

119. If $\log_{10}2=y$ and $\log_{10}3=x$, then the value of $\log_{10}15$ is: **[Dec. 2022]**

(A) x – y + 1
(B) x + y + 1
(C) x –y – 1
(D) y – x + 1

120. $\log_3 4\times\log_4 5\times\log_5 6\times\log_6 7\times\log_7 8\times\log_8 9$ equal to **[Dec. 2022]**

(A) 3
(B) 2
(C) 1
(D) 0

121. *If* $\sqrt[3]{a}+\sqrt[3]{b}+\sqrt[3]{c}=0$ then the value of $\left(\frac{a+b+c}{3}\right)^3$ is equal to **[June 2022]**

(A) abc
(B) 9abc
(C) 1/(abc)
(D) (1/9)abc

122. The value of $\left[\log_{10}(5\log_{10}100)\right]^2$ is **[June 2023]**

(A) 1
(B) 2
(C) 10
(D) 25

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

123. The age of a man is four times the sum of the ages of his two sons and after 10 years, his age will be double the sum of their ages. The present age of the man must be

(A) A. 56 Years **[June 2023]**

(B) B. 45 Years

(C) C. 60 Years

(D) D. 64 Years

124. Given that $\log_{10} x = m + n - 1$ and $\log_{10} y = m - n$ the value of $\log_{10} (100x/y^2)$ is expressed in terms of m and n as

(A) $1 - m + 3n$ **[June 2023]**

(B) $m - 1 + 3n$

(C) $m + 3n + 1$

(D) $m^2 - n^2$

125. If $x = y^a, y = z^b, z = x^c$, then the value of abc is

(A) 1 [June 2023]

(B) 2

(C) 3

(D) 4

126. If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{6z} = \frac{24}{7}$, then the value of z is: **[Dec. 2023]**

(A) $\frac{7}{16}$

(B) $\frac{7}{32}$

(C) $\frac{7}{48}$

(D) $\frac{7}{64}$

127. Divide 27 into two parts, so that 5 times the first and 11 times the second together equal to 195, then the ratio of first and second part is: **[Dec. 2023]**

(A) 17 : 10

(B) 15 : 12

(C) 14 : 13

(D) 16 : 11

128. If $\frac{9^n \times 3^5 \times (27)^5}{3 \times (81)^4} = 27$, then the value of n is

(A) 2 **[Dec. 2023]**

(B) 0

(C) 3

(D) 4

129. Given $x = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}$ and $y = \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$ then find the value of $\frac{1}{x^2} + \frac{1}{y^2}$ **[Dec 2023]**

(A) 63

(B) 61

(C) 62

(D) 60

130. If $\log_a b = 3$ and $\log_b c = 2$, then $\log_a c$ is:

(A) 5 **[June 2024]**

(B) 6

(C) 9

(D) 1

131. If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{6z} = \frac{24}{7}$, then the value of z is: **[June 2024]**

(A) 7/16

(B) 7/32

(C) 7/48

(D) 7/64

132. If the four numbers 1/4, 1/6, 1/10, an d 1/x are proportional, then what is the value of x?

(A) 14 **[June 2024]**

(B) 15

(C) 10

(D) 1/12

133. $\log_2 \log_2 \log_4 256 + 2 \log_{\sqrt{2}} 2$ is equal to :

(A) 2 **[Sept. 2024]**

(B) 3

(C) 5

(D) 7

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

134. What is the value of - **[Sept. 2024]**

$$\left(\frac{x^b}{x^c}\right)^{(b+c-a)} \times \left(\frac{x^c}{x^a}\right)^{(c+a-b)} \times \left(\frac{x^a}{x^b}\right)^{(a+b-c)} ?$$

(A) x^{abc}

(B) $X^{(a+b+c)}$

(C) -1

(D) 1

135. The ratio of income of A and B is 5:4 and their expenditure is 3:2 If at the end of year each saves ₹ 1,600, then the income of A is: **[Sept. 2024]**

(A) ₹ 3,400

(B) ₹3,600

(C) ₹4,000

(D) ₹4,400

136. If $\left(\frac{x}{y}\right)^{a^2+4} = (x^{-1}y)^{-5a}$ then the value of a is **[Jan. 2025]**

(A) –4,1

(B) 4, –1

(C) –4, –1

(D) 4,1

137. If $x = \sqrt{2} + \frac{1}{\sqrt{2}}$ and $y = \sqrt{2} - \frac{1}{\sqrt{2}}$ then $x^2 + y^2$ is **[Jan. 2025]**

(A) $\sqrt{2}$

(B) $\frac{1}{\sqrt{2}}$

(C) 5

(D) 0

138. Suppose a father had a sum of Rs. 3,600 and he decided to divide this amount among his three sons Anil, Sunil and Nimal in such a way that 3 times Anil's share, 6 times Sunil's share, and 8 times Nimal's share are all equal. Then Anil's share is **[Jan. 2025]**

(A) Rs. 1,920

(B) Rs. 960

(C) Rs. 720

(D) Rs. 1,860

139. The ratio of age of two sisters is 5: 7. One is elder to the other by 8 years. Then the ratio of their age after 4 years between older to younger is **[Jan. 2025]**

(A) 2:5

(B) 4: 3

(C) 4: 5

(D) 3:5

140. The simplified value of $[5a^5 b^2 \times 3(a\, b^3)^2]/(15a^2b)$ is **[Jan. 2025]**

(A) a^5b^7

(B) a^7b^7

(C) a^5b^5

(D) a^7b^5

141. Three Employees A, B and C of a firm receive variable incentive money in the ratio 3: 4: 5. Then the Management also gave a fixed incentive of Rs. 4,000 to each of them. As a result now the total incentive amount of A, B and C becomes in the ratio 5: 6:7. How much amount did B get as variable incentive?

(A) Rs. 2,000 **[Jan. 2025]**

(B) Rs. 4,000

(C) Rs. 6,000

(D) Rs. 8,000

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY									
1.	B	2.	C	3.	B	4.	D	5.	B
6.	D	7.	C	8.	A	9.	B	10.	C
11.	B	12.	A	13.	D	14.	C	15.	C
16.	A	17.	C	18.	B	19.	C	20.	D
21.	B	22.	C	23.	D	24.	A	25.	C
26.	B	27.	D	28.	D	29.	C	30.	B
31.	A	32.	D	33.	C	34.	A	35.	A
36.	D	37.	D	38.	B	39.	C	40.	B
41.	A	42.	B	43.	A	44.	C	45.	A
46.	D	47.	B	48.	C	49.	C	50.	A
51.	A	52.	A	53.	D	54.	C	55.	B
56.	A	57.	D	58.	C	59.	B	60.	B
61.	A	62.	B	63.	A	64.	B	65.	C
66.	B	67.	D	68.	D	69.	C	70.	A
71.	B	72.	C	73.	B	74.	A	75.	C
76.	B	77.	B	78.	C	79.	C	80.	D
81.	A	82.	D	83.	A	84.	B	85.	D
86.	A	87.	A	88.	B	89.	B	90.	A
91.	A	92.	C	93.	D	94.	D	95.	A
96.	D	97.	A	98.	C	99.	A	100.	C
101.	C	102.	A	103.	D	104.	C	105.	C
106.	C	107.	B	108.	D	109.	B	110.	B
111.	D	112.	C	113.	B	114.	D	115.	C
116.	A	117.	D	118.	D	119.	A	120.	B
121.	A	122.	A	123.	C	124.	A	125.	A
126.	C	127.	A	128.	B	129.	C	130.	B
131.	C	132.	B	133.	C	134.	D	135.	C
136.	D	137.	C	138	A	139.	B	140.	A
141.	D								

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 2
EQUATIONS

1. $x^3 - 6x^2 + 11x - 6 = 0$ find $3x - 4$

(A) (1, -2, 5)
(B) (1, 2, 5)
(C) (-1, 2, 5)
(D) (1, 2, -5)

2. The age of father is 3 times the age of his son. 15 years later, the age of father double's the age of son, then present age of father is?

(A) 60 years
(B) 45 years
(C) 30 years
(D) 35 years

3. If the cost of manufacturing 10 box is Rs. 28,000 & cost of manufacturing 20 box is Rs. 36,000. Find the cost equation.

(A) y = 20000+800x
(B) y = 10000+800x
(C) y = 5000+400x
(D) y = 12000+800x

4. α & β are roots of Equation $4x^2 - 5x + 9 = 0$ then $\frac{1}{\alpha^2} + \frac{1}{\beta^2} = ?$

(A) $\frac{40}{81}$
(B) $\frac{-47}{81}$
(C) $\frac{47}{69}$
(D) None of these

5. $2 + \sqrt{3}$ is one root of the equation & $x^2 + px + q = 0, then\ p = ?, q = ?$

(A) (1, 4)
(B) (-4, 1)
(C) (-1, 4)
(D) (-1, -4)

6. If area of Rectangle is 6000 mt²& perimeter is 340 mts. then length of rectangle is

(A) 50
(B) 100
(C) 120
(D) 140

7. If $x^2 - 2(2 + 3m)x + (2 + 7m) = 0$& if one root is reciprocal of other then what is the sum of roots?

(A) 3
(B) 2
(C) $\frac{15}{7}$
(D) $\frac{22}{7}$

8. If $3^{\frac{1}{3}} + 9^{\frac{1}{3}} = x$ find $x^3 - 9x$

(A) 10
(B) -12
(C) 12
(D) -10

9. Point of intersection of $2x - 5y = 6, x - y = 3$ is

(A) (2, 2)
(B) (3, 0)
(C) (0, 3)
(D) (3, -3)

10. If the length of rectangle is 5 more than the breadth & its perimeter is 40, find length & breadth **[Dec. 2009]**

(A) L = 15, B = 10
(B) L = 20, L = 15
(C) L = 12.5, B = 7.5
(D) None of these

11. $3x^2 - 14x + K = 0$ what is the value of K such that roots are reciprocal of each other **[June 2010]**

(A) 3
(B) $\frac{1}{3}$
(C) $\frac{14}{3}$
(D) $\frac{-3}{14}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. If life expectancy (E) is defined as a linear function of time. If is given that in 1980, life expectancy was 70 yrs & in 2000 it was 75 yrs. What would be the life expectancy in 2012?

(A) 76 years
(B) 78 years
(C) 80 years
(D) Not

13. If $x^2 - 3x + 2 = 0$ *then x is*

(A) (1, 2)
(B) (-2, 1)
(C) (-1, 2)
(D) Not

14. $12x^2 + Kx + 5 = 0$ if ratio of roots $\frac{\alpha}{\beta} = \frac{3}{2}$ then k is

(A) $5\sqrt{10}$
(B) $2\sqrt{5}$
(C) 50
(D) 100

15. If one root of the Equation $px^2 + qx + r = 0$ is r then other root of the equation will be **[Dec. 2011]**

(A) $\frac{1}{q}$
(B) q
(C) p
(D) $\frac{1}{p}$

16. If the ratio of the roots of the equation $4x^2 - 6x + p = 0$ is 1:2 then the value of p is **[Dec. 2011]**

(A) 1
(B) 2
(C) -1
(D) 4

17. If p & q are the roots of the Equation $x^2 - bx + c = 0$, then what is the Equation whose roots are (pq+p+q) and (pq-p-q)?

(A) $x^2 - 2cx + c^2 - b^2 = 0$ **[Dec. 2011]**
(B) $x^2 - 2cx + b^2 - c^2 = 0$
(C) $x^2 - 2bx + b^2 - c^2 = 0$
(D) $x^2 - 2bx + c^2 - b^2 = 0$

18. If x varies inversely as square of y and given that y = 2 for x = 1, then the value of x for y = 6 will be **[Dec. 2011]**

(A) $\frac{4}{9}$
(B) $\frac{1}{9}$
(C) $\frac{2}{7}$
(D) $\frac{5}{12}$

19. If the A.M. between the roots of a quadratic equation is '8' and G.M. is '5' then the equation is

(A) $x^2 - 16x + 25 = 0$
(B) $x^2 + 25x - 16 = 0$
(C) $x^2 - 5x + 8 = 0$
(D) $x^2 + 5x - 8 = 0$

20. α, β are the roots of the equation $2x^2 + 3x + 7 = 0$. Then the value of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$ is

(A) $\frac{-10}{13}$
(B) $\frac{-14}{19}$
(C) $\frac{-19}{14}$
(D) $\frac{-13}{10}$

21. If $|x - 2| + |x - 3| = 7$ then **[Dec. 2012]**

(A) 6
(B) -1
(C) 6 & -1
(D) None

22. The quadratic equation $x^2 - 2kx + 16 = 0$ will have equal roots then k =

(A) 4 **[Dec. 2012]**
(B) -4
(C) ± 4
(D) None of these

23. If α, β are roots of $x^2 + 7x + 11 = 0$ then the equation whose roots as $(\alpha + \beta)^2$ & $(\alpha - \beta)^2$ is **[June 2013]**

(A) $x^2 - 49x + 145 = 0$
(B) $x^2 - 54x + 176 = 0$
(C) $x^2 - 54x + 245 = 0$
(D) $x^2 - 35x + 170 = 0$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

24. A seller makes an offer of selling certain articles that can be described by the equation $x = 25 - 2y$ where x is price per unit and y denotes that no. of units. The cost price of the article is Rs. 10 per unit. The maximum quantity that can be offered in a single deal to avoid loss is **[Dec. 2013]**

(A) 7
(B) 5
(C) 10
(D) 12

25. Divide 80 into two parts so that their products is maximum, then the numbers are **[Dec. 2013]**

(A) 15, 65
(B) 25, 55
(C) 35, 45
(D) 40, 40

26. If $b^2 - 4ac$ is a perfect square but not equal to zero then the roots of the equation **[Dec. 2013]**

(A) Irrational and equal
(B) Rational and equal
(C) Rational and unequal
(D) Imaginary

27. If the equation $kx + 2y = 5, 3x + y = 1$ has no solution then the value of k is **[Dec. 2013]**

(A) 3
(B) 6
(C) 2
(D) 4

28. If $kx - 4 = (k - 1)x$ which of the following is true **[Dec. 2013]**

(A) x = -5
(B) x = -4
(C) x = -3
(D) x = 4

29. The roots of equation $y^3 + y^2 - y - 1 = 0$ are **[June 2014]**

(A) (1, -1, -1)
(B) (1, 1, -1)
(C) (-1, -1, -1)
(D) (1, 1, 1)

30. If $x + 5y = 33$ and $\frac{x+y}{x-y} = \frac{13}{3}$ then $(x, y) =$ **[Dec. 2014]**

(A) (8, 5)
(B) (5, -8)
(C) (4, -3)
(D) (5, 7)

31. The age of a person is 8 years more than thrice the age of the sum of his two grandsons who were twins. After 8 years his age will be 10 years more than twice the sum of the ages of his grandsons. Then the age of the person when the twins were born is **[June 2015]**

(A) 75 years
(B) 77 years
(C) 73 years
(D) 80 years

32. Roots of the cubic equation $x^2 - 7x + 6 = 0$ are _____ **[June 2015]**

(A) (6, -1)
(B) (-6, 1)
(C) (1, 6)
(D) (-1, -6)

33. In a school number of students in each section is 36. If 12 new students are added, then the number of sections are increased by 4, and the number of students in each section becomes 30. The original number of sections at first is **[June 2015]**

(A) 20
(B) 18
(C) 22
(D) 16

34. A person on a tour has Rs. 9600 for his expenses. But the tour was extended for another 16 days, so he has to cut down his daily expenses by Rs. 20. The original duration of the tour had been? **[June 2015]**

(A) 80
(B) 96
(C) 100
(D) 120

35. If α, β be the roots of a quadratic equation if $\alpha+\beta=-2, \alpha\beta=-3$. Find quadratic equation **[Dec. 2015]**

(A) $x^2-2x-3=0$

(B) $x^2-2x+3=0$

(C) $x^2+2x+3=0$

(D) $x^2+2x-3=0$

36. Value of k for which roots are equal of given equation $4x^2-12x+k=0$ are equal

(A) 8 **[Dec. 2015]**

(B) 9

(C) 10

(D) 12

37. The value of

$$\frac{x^2-(y-x)^2}{(x+z)^2-y^2}+\frac{y^2-(x-z)^2}{(x+y)^2-z^2}+\frac{z^2-(x-y)^2}{(y+z)^2-x^2}$$

(A) 0

(B) 1

(C) $\frac{1}{2}$

(D) -1

38. If difference between the roots of the equation $x^2-kx+8=0$ is 4 then the value of K is **[June 2016]**

(A) $\pm 2\sqrt{3}$

(B) $\pm 3\sqrt{2}$

(C) $\pm 4\sqrt{2}$

(D) $\pm 4\sqrt{3}$

39. Particular company produces some articles on a day. The cost of production per article is Rs. 2 more than thrice the number of articles and the total cost of production is Rs. 800 on a day then the number of articles is

(A) 15

(B) 16

(C) 20

(D) 22

40. One root of the equation:

$x^2-2(5+m)x+3(7+m)=0$

is reciprocal of the other. Find the value of m.

(A) $\frac{-20}{3}$ **[June 2009]**

(B) 7

(C) $\frac{1}{7}$

(D) $-\frac{1}{7}$

41. Positive value of 'k' for which the roots of equation $12x^2+kx+5=0$ are in ratio 3:2, is:

(A) $\frac{5}{12}$ **[Dec. 2010]**

(B) $\frac{12}{5}$

(C) $\frac{5\sqrt{10}}{2}$

(D) $5\sqrt{10}$

42. If one root of the equation $x^2-3x+k=0$ is 2, then value of k will be: **[Dec. 2010]**

(A) –10

(B) 0

(C) 2

(D) 10

43. If one of the roots of the equation $x^2+px+a=0$ is $\sqrt{3}+2$, then the value of 'p' and 'a' is: **[June 2012]**

(A) $-4,-1$

(B) $4,-1$

(C) $-4,1$

(D) 4, 1

44. Roots of equation $2x^2+3x+7=0$ and α and β. The value of $\alpha\beta^{-1}+\beta\alpha^{-1}$ is

(A) 2 **[Dec. 2012]**

(B) $\frac{3}{7}$

(C) $\frac{7}{2}$

(D) $-\frac{19}{14}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

45. If α and β be the roots of the quadratic equation $2x^2-4x=1$, the value of $\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}$ is _____. **[June 2015]**

(A) –11

(B) 22

(C) –22

(D) 11

46. Let E_1 and E_2 are two linear equations in two variables x and y. (0, 1) is a solution of both equations E_1 and E_2. $(2,-1)$ is a solution of equation E_1 only and $(-2,-1)$ is solution of E_2 only then E_1 and E_2 are _____. **[June 2016]**

(A) $x=0, y=1$

(B) $2x-y=-1, 4x+y=1$

(C) $x+y=1, x-y=-1$

(D) $x+2y=2, x+y=1$

47. If $2^{x+y}=2^{2x-y}=\sqrt{8}$ then the respective values of X and Y are ___. **[June 2016]**

(A) $1,\frac{1}{2}$

(B) $\frac{1}{2},1$

(C) $\frac{1}{2},\frac{1}{2}$

(D) None of these

48. If the sides of an equilateral triangle are shortened by 3 units, 4 units and 5 units respectively and a right triangle is formed, then the side of and equilateral triangle is:

(A) 6 units **[June 2017]**

(B) 7 units

(C) 8 units

(D) 10 units

49. If α, β are the roots of the equation $x^2+x+5=0$ then $\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}$ is equal to

(A) $\frac{16}{5}$ **[June 2017]**

(B) 2

(C) 3

(D) $\frac{14}{5}$

50. If $\frac{3}{x+y}+\frac{2}{x-y}=-1$ and $\frac{1}{x+y}-\frac{1}{x-y}=\frac{4}{3}$ then (x, y) is: **[June 2017]**

(A) (2, 1)

(B) (1, 2)

(C) (–1, 2)

(D) (–2, 1)

51. The roots of the cubic equation $x^3+7x^2-21x-27=0$ are **[Dec. 2017]**

(A) –1, 3, 9

(B) 1, –3, 9

(C) –1, 3, –9

(D) –1, –3, 9

52. The difference between the roots of the equation $x^2-7x-9=0$ is: **[Dec. 2017]**

(A) 7

(B) $\sqrt{85}$

(C) 9

(D) $2\sqrt{85}$

53. If the sum of two numbers is 13 and the sum of their squares is 85 then the numbers will be: **[Dec. 2017]**

(A) 3, 10

(B) 5, 8

(C) 4, 9

(D) 6, 7

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

54. If $u^{5x}=v^{5y}=w^{5z}$ and $u^2=vw$, then the value of xy+xz – 2yz will be: **[Dec. 2017]**

(A) 5
(B) 2
(C) 1
(D) 0

55. If $\alpha+\beta=-2$ and $\alpha\beta=-3$, then α,β are the roots of the equation, which is:

(A) $x^2-2x-3=0$ **[May 2018]**
(B) $x^2+2x-3=0$
(C) $x^2+2x+3=0$
(D) $x^2-2x+3=0$

56. If $2^{x+y}=2^{2x-y}=\sqrt{8}$, then the respective values of x and y are _____ **[May 2018]**

(A) $1,\frac{1}{2}$
(B) $\frac{1}{2},1$
(C) $\frac{1}{2},\frac{1}{2}$
(D) None of these

57. If $\frac{3}{x+y}+\frac{2}{x-y}=-1$ and $\frac{1}{x+y}-\frac{1}{x-y}=\frac{4}{3}$ then (x, y) is: **[May 2018]**

(A) (2, 1)
(B) (1, 2)
(C) (–1, 2)
(D) (–2, 1)

58. If α, β are the roots of the equation $x^2+x+5=0$ then $\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}$ is equal to

(A) $\frac{16}{5}$ **[May 2018]**
(B) 2
(C) 3
(D) $\frac{14}{5}$

59. Let α and β be the roots of $x^2+7x+12=0$. Then the value of $\left(\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}\right)$ will be: **[Nov. 2018]**

(A) $\frac{7}{12}+\frac{12}{7}$
(B) $\frac{49}{144}+\frac{144}{49}$
(C) $-\frac{91}{12}$
(D) None of the above

60. When two roots of quadratic equation are $\alpha,\frac{1}{\alpha}$ then what will be the quadratic equation: **[Nov. 2018]**

(A) $\alpha x^2-(\alpha^2+1)x+\alpha=0$
(B) $\alpha x^2-\alpha^2 x+1=0$
(C) $\alpha x^2-(\alpha^2+1)x+1=0$
(D) None of these

61. A number consists of two digits such that the digit in one's place in thrice the digit in ten's place. If 36 be added then the digits are reversed. Find the number ____.

(A) 62 **[June 2019]**
(B) 26
(C) 39
(D) None of these

62. Find the condition that one roots is double the other of $ax^2+bx+c=0$

(A) $2b^2=3ac$ **[June 2019]**
(B) $b^2=3ac$
(C) $2b^2=9ac$
(D) $2b^2>9ac$

63. Roots of the equation $x^3+9x^2-x-9=0$.

(A) 1, 2, 3 **[Nov. 2019]**
(B) 1, –1, –9
(C) 2, 3, –9
(D) 1, 3, 9

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64. $\frac{2x+5}{10}+\frac{3x+10}{15}=5$ **[Nov. 2019]**

(A) 10.58
(B) 9.58
(C) 9.5
(D) None

65. Find value of $x^2-10x+1$ if $x=\frac{1}{5-2\sqrt{6}}$

(A) 25 **[Nov. 2019]**
(B) 1
(C) 0
(D) 49

66. Find the value of K in $3x^2-2kx+5=0$ if $x=2$

(A) $\frac{17}{4}$ **[Nov. 2019]**
(B) $-\frac{7}{14}$
(C) $\frac{4}{17}$
(D) $-\frac{4}{17}$

67. The rational root of the equation $2p^3-p^2-4p+2=0$ is: **[Nov. 2020]**

(A) 2
(B) –2
(C) $\frac{1}{2}$
(D) $-\frac{1}{2}$

68. If $2x^2-(a+6)2x+12a=0$, then the roots are: **[Nov. 2020]**

(A) 6 and a
(B) 4 and a^2
(C) 3 and 2a
(D) 6 and 3a

69. Solving equation $m+\sqrt{m}=\frac{6}{25}$, the value of m works out to: **[Nov. 2020]**

(A) $\frac{1}{25}$
(B) $\frac{2}{25}$
(C) $\frac{3}{25}$
(D) 1

70. The value of P for which the difference between the root of equation $x^2+px+8=0$ is 2 is **[Jan. 2021]**

(A) ± 2
(B) ± 4
(C) ± 6
(D) ± 8

71. If one of the root of the cubic equation $3x^3-5x^2-11x-3=0$ *is* $-\frac{1}{3}$, then other two roots are: **[Sept. 2024]**

(A) 1 & 3
(B) -1 & 3
(C) 1 &-3
(D) -1 &-3

72. The harmonic mean of the roots of the equation $(5+\sqrt{2})x^2-(4+\sqrt{5})x+8+2\sqrt{5}=0$ is **[Jan. 2021]**

(A) 2
(B) 4
(C) 6
(D) 8

73. If α and β are the roots of the equation $2x^2+5x+k=0$,and $4(\alpha^2+\beta^2+\alpha\beta)=23$, then which of the following is true?

(A) $k^2+3k-2=0$ **[July 2021]**
(B) $k^2-2k+3=0$
(C) $k^2-2k-3=0$
(D) $k^2-3k+2=0$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

74. The value of 'k' is _____, if 2 is one of the root of the following cubic equation: $x^3-(k+1)x+k=0$. **[July 2021]**

(A) 2
(B) 6
(C) 1
(D) 4

75. The cost of 2 oranges and 3 apples is Rs. 28. If the cost of an apple is doubled then the cost of 3 oranges and 5 apples is Rs. 75. The original cost of 7 oranges and 4 apples (in (Rs.)) is: **[July 2021]**

(A) 59
(B) 47
(C) 71
(D) 63

76. The sum of square of any real positive quantity and its reciprocal is never less than: **[July 2021]**

(A) 1
(B) 2
(C) 3
(D) 4

77. If one root is half of the other of a quadratic equation and the difference in roots is a, then the equation is

(A) $x^2+ax+2a^2=0$ **[Dec.2021]**
(B) $x^2-3ax-2a^2=0$
(C) $x^2-3ax+2a^2=0$
(D) $x^2+3ax-2a^2=0$

78. In a multiple choice question paper consisting of 100 questions of 1 mark each, a candidate gets 60% marks. If the candidate attempted all questions and there was a penalty of 0.25 marks for wrong answer, the difference between number of right answers and wrong answers is:

(A) 32 **[Dec. 2021]**
(B) 36
(C) 40
(D) 38

79. If the square of a number exceeds twice of the number by 15, then number that satisfies the condition is **[Dec. 2021]**

(A) –5
(B) 3
(C) 5
(D) 15

80. Solve $x^3-7x+6=0$ **[Dec. 2021]**

(A) $x=6,7,-4$
(B) $x=-1,-2,-3$
(C) $x=1,2,-3$
(D) $x=2,4,6$

81. The solution of the following system of linear equation $2x-5y+4=0$ and $2x+y-8=0$ will be **[Nov. 2022]**

(A) (2, –3)
(B) (1,–4)
(C) (3,2)
(D) (–2,2)

82. If the cost of 3 bags and 4 pens is ₹ 257 where as the cost of 4 bags and 3 pens is ₹ 324, then the cost of one bag is:

(A) 8 **[Dec. 2022]**
(B) 24
(C) 32
(D) 75

83. What will be the value of k, if the roots of the equation $(k-4)x^2-2kx+(k+5)=0$ are equal

(A) 18 **[Dec. 2022]**
(B) 20
(C) 19
(D) 21

84. If the roots of the equation $x^2-px+q=0$ are in the ratio 2 : 3 then

(A) $p^2=25q$ **[Dec. 2022]**
(B) $p^2=6q$
(C) $6p^3=5q$
(D) $6p^2=25q$

85. If α and β are roots of the quadratic equation $x^2-2x-3=0$, then the equation whose roots are $\alpha+\beta$ and $\alpha-\beta$ is:

[Jun. 2023]

(A) $x^2-6x-8=0$

(B) $x^2-6x+8=0$

(C) $x^2+6x+8=0$

(D) $x^2+6x-8=0$

86. The largest side of a triangle is 3 times the shortest side and third side is 4 cm shorter then largest s side. If the perimeter of the triangle is at least 59 cm, what is the length of shortest side?

[Jun. 2023]

(A) Less than 7 cm

(B) Greater than or equal to 7 cm

(C) Less than 9 cm

(D) Greater than or equal to 9cm

87. If α and β are roots of the equation $x^2-\left(n^2+1\right)x+\frac{1}{2}\left(n^4+n^2+1\right)=0$ then the value of $\alpha^2+\beta^2$ is:

[Jun. 2023]

(A) 2n

(B) n^2

(C) $2n^2$

(D) n^3

88. The solution of cubic equation $x^3-23x^2+142x-120=0$ is given by the triplet:

[Dec. 2023]

(A) (1, 10, 12)

(B) (1, –10, 12)

(C) (–1, –10, –12)

(D) (1, 10, –12)

89. The solution of the linear simultaneous equations $2x-y=4$ and $3x+4y=17$ is

[Dec. 2023]

(A) $x=3; y=2$

(B) $x=2; y=3$

(C) $x=-3; y=-2$

(D) $x=-2; y=-3$

90. The roots of the equation $x^3+x^2-x-1=0$ are

[Dec. 2023]

(A) $x=1, x=-1\ x=-1$

(B) $x=1, x=1, x=-1$

(C) $x=-1, x=-1, x=-1$

(D) $x=1, x=1, x=1$

91. If α and β are the roots of the equation $x^2-4x+1=0$, then value of $\alpha^3+\beta^3$ will be

[Dec. 2023]

(A) –76

(B) 76

(C) –52

(D) 52

92. The equation $x^3-3x^2-4x=12=0$ has three real roots. They are:

[June 2024]

(A) –2, 2, 3

(B) -2, -2, 3

(C) 2, -2, -3

(D) -2, 2, -3

93. If α and β are roots of the equation $ax^2+bx+c=0$, then the equation whose roots are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ is :**[June 2024]**

(A) $cx^2-bx-a=0$

(B) $cx^2+bx-a=0$

(C) $x^2+bx+a=0$

(D) $x^2+bx-a=0$

94. If α and β are roots of the equation $x^2-8x+12=0$ then $\frac{1}{\alpha}+\frac{1}{\beta}=$ _____

[June 2024]

(A) 2/3

(B) 2/4

(C) 3/4

(D) 4/5

95. The roots of the equation $x^2-7x+10=0$ are:

[June 2024]

(A) 2 and 5

(B) –2 and –5

(C) 2 and –5

(D) –2 and 5

96. A fraction becomes 1, when 3 are added to the numerator and 1 is added to the denominator. But when the numerator and denominator are decreased by 2 and 1, respectively, it becomes 1/2. The denominator of the fraction is:

[June 2024]

(A) 5

(B) 6

(C) 7

(D) 8

97. A number consists of two digits. The digits in the ten's place is 3 times the digit in the unit's place. If 54 is subtracted from the number, then the digits are reversed. The number is:

[Sept. 2024]

(A) 39

(B) 62

(C) 93

(D) 31

98. A person purchased 2 apples and 5 bananas at the cost of ₹ 90. Later he visited to another shop where shopkeeper told him that if you give me ₹ 50 and one banana, I can give you 3 apples. He agreed to the deal. What is the cost of one apple and one banana?

[Sept. 2024]

(A) (15,10)

(B) (10,15)

(C) (10,20)

(D) (20,10)

99. If one of the root of the equation $x^2 - 3x + k = 0$ is 1, then the value of 'k' is :

[Sept. 2024]

(A) 2

(B) 1

(C) -2

(D) -1

100. What are the values of x & y from the given equations?

Given that $\frac{x}{2}-\frac{y}{5}=y-x$ and $\frac{x-5}{y-10}=1$

[Jan. 2025]

(A) (15,20)

(B) (20, 25)

(C) (25,30)

(D) (30,35)

101. If α and β are roots of the equation $2x^2 - 4x + 6 = 0$ then the quadratic equation with roots $\frac{\alpha^2}{\beta}$ and $\frac{\beta^2}{\alpha}$ is

[Jan. 2025]

(A) $3x^2 - 10x + 9 = 0$

(B) $3x^2 + 10x + 9 = 0$

(C) $x^2 - 13x + 3 = 0$

(D) $x^2 + 10x + 9 = 0$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	C	2.	B	3.	A	4.	B	5.	B
6.	C	7.	D	8.	C	9.	B	10.	C
11.	A	12.	B	13.	A	14.	A	15.	D
16.	B	17.	A	18.	B	19.	A	20.	C
21.	C	22.	C	23.	C	24.	A	25.	D
26.	C	27.	B	28.	D	29.	A	30.	A
31.	C	32.	C	33.	B	34.	A	35.	D
36.	B	37.	B	38.	D	39.	B	40.	A
41.	D	42.	C	43.	C	44.	D	45.	C
46.	C	47.	A	48.	C	49.	D	50.	B
51.	C	52.	B	53.	D	54.	D	55.	B
56.	A	57.	B	58.	D	59.	C	60.	A
61.	B	62.	C	63.	B	64.	B	65.	C
66.	A	67.	C	68.	A	69.	A	70.	C
71.	B	72.	B	73.	D	74.	B	75.	A
76.	B	77.	C	78.	B	79.	C	80.	C
81.	C	82.	D	83.	B	84.	D	85.	B
86.	D	87.	B	88.	A	89.	A	90.	A
91.	D	92.	A	93.	B	94.	A	95.	A
96.	C	97.	C	98.	D	99.	A	100.	B
101.	B								

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Space for Notes

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CHAPTER – 3
INEQUALITIES

1. $3x + 2y = 6, 3x - y = 12$ will intersect in which quadrant

(A) 1st

(B) 2nd

(C) 3rd

(D) 4th

2. If $x > 0$ & $y < 0$ then which quadrant is this?

(A) 1st

(B) 2nd

(C) 3rd

(D) 4th

3. Graph of a line x = 15 is

(A) Line Parallel to x axis

(B) Line Parallel to y axis

(C) Parabola

(D) Circle

4. What is the solution of $\frac{5-2x}{3} \leq \frac{x}{6} - 5$

(A) $x \geq 5$ **[June 2010]**

(B) $x \geq 8$

(C) $x \geq 7$

(D) $x \geq 10$

5. if one experienced worker manufactures 7 units/day & one inexperienced worker manufactures 5 unit/day. If the employer requires at least 35 unit to be manufactured per day then it can be expressed as. **[Dec. 2010, 11 & 12]**

(A) $7x + 5y \geq 35$

(B) $7x + 5y \leq 35$

(C) $7x + 5y > 35$

(D) $7x + 5y < 35$

6. Solution space of the inequalities $2x + y \leq 10$ $and x - y \leq 5$:

(i) includes the origin

(ii) includes the point (4, 3)

Which one is correct?

(A) Both (i) and (ii)

(B) Neither (i) nor (ii)

(C) Only (i)

(D) Only (ii)

7. The range of real value of 'x' satisfying the inequality $3x - 2 > 7$ and $4x - 13 > 15$ is

(A) x>3 **[June 2012]**

(B) x>7

(C) x<7

(D) x<3

8. The union forbids the employer to employ less than 2 experienced persons (x) to each fresh person (y). This situation can be expressed as **[June 2013]**

(A) $x \leq 2y$

(B) $x \geq 2y$

(C) $x > 2y$

(D) $x < 2y$

9. The solution of the inequality $8x + 6 < 12x + 14$ is **[Dec. 2013]**

(A) (-2, 2)

(B) (-2, 0)

(C) $(2, \infty)$

(D) $(-2, \infty)$

10. The common region represented by the inequalities $2x + y \geq 8$, $x + y \geq 12$, $3x + 2y \leq 34$ is

(A) Unbounded **[June 2015]**

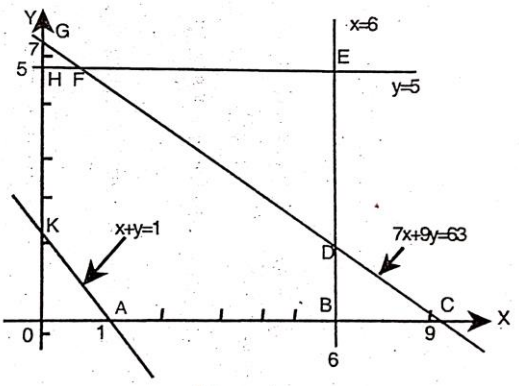
(B) In feasible

(C) Feasible and bounded

(D) Feasible and unbounded

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

11. The graph of linear inequalities $7x+9y\le 63,\ x+y\ge 1,\ 0\le x\le 6$ and $0\le y\le 5$



Common region of the inequalities is:

(A) BCDB and DEFD **[June 2014]**

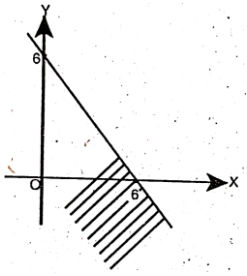
(B) Unbounded

(C) HFGH

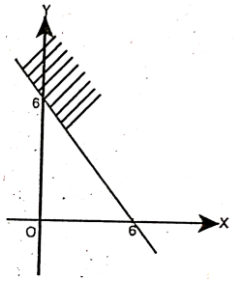
(D) ABDFHKA

12. The graph to express the inequality $x+y\le 6$ is: **[Dec. 2014]**

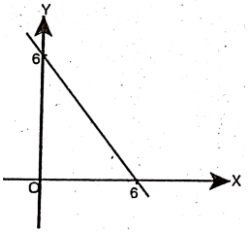
(A)



(B)

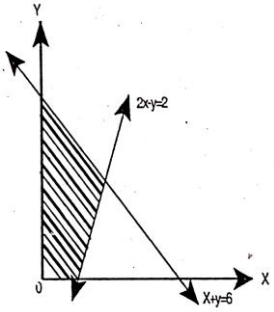


(C)



(D) None of these

13. The common shaded region in the graph represents the linear inequalities as: **[Dec. 2015]**



(A) $x+y\ge 6,\ 2x-y-2\ge 0,\ x,y\ge 0$

(B) $x+y\ge 6,\ 2x-y-2\le 0,\ x,y\ge 0$

(C) $x+y\le 6,\ 2x-y-2\le 0,\ x,y\ge 0$

(D) $x+y\le 6,\ 2x-y-2\ge 0,\ x,y\ge 0$

14. A dietician wishes to mix together two kinds of food so that the vitamins content of the mixture is atleast 9 units of vitamin A, 7 units of vitamin B, 10 units of vitamin C, 12 units of vitamin D. The vitamin content per kg. of each food is shown in table. Assuming 'x' units of food I is to be mixed with 'y' units of food II the situation can be expressed as:

	A	B	C	D
Food I	2	1	1	2
Food II	1	1	2	3

(A) $2x+y\le 9,\ x+y\le 7,\ x+2y\le 10,\ 2x+3y\le 12,\ x>0,y>0$ **[June 2017]**

(B) $2x+y\ge 30,\ x+y\le 7,\ x+2y\ge 10,\ 2x+3y\ge 12,\ x>0,y>0,\ 2x+y\ge 9,\ x+y\ge 7$

$x+2y \le 10$

(C) $x+3y \le 12$

$x \ge 0, y > 0$

$2x+y \ge 9$

$x+y \ge 7$

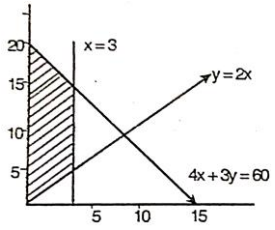
(D) $x+2y \ge 10$

$2x+3y \ge 12$

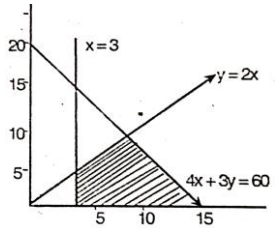
$x \ge 0, y \ge 0$

15. The common regions by the inequalities $4x+3y \le 60;\ y \ge 2x; x \ge 3, x \ge 0$ and $y \ge 0$ is **[June 2017]**

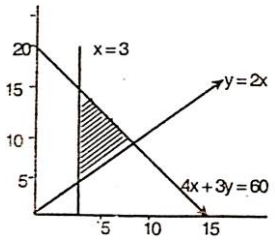
(A)



(B)



(C)



(D) None of these

16. The linear relationship between two variables in an inequality: **[May 2018]**

(A) $ax+by \le c$

(B) $ax.by \le c$

(C) $axy+by \le c$

(D) $ax+bxy \le c$

17. An employer recruits experienced (x) and fresh workmen (y) for his under the condition that he cannot employ more than 11 people. x and y can related by the inequality. **[June 2019]**

(A) $x+y \ne 11$

(B) $x+y \le 11, x \ge 0, y \ge 0$

(C) $x+y \ge 11, x \ge 0, y \ge 0$

(D) None of these

18. The solution set of the in equations $x+2>0$ and $2x-6>0$ is **[June 2019]**

(A) $(-2,\infty)$

(B) $(3,\infty)$

(C) $(-\infty,-2)$

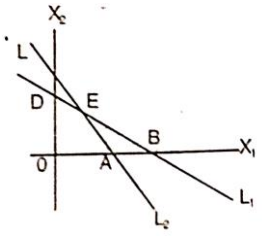
(D) $(-\infty,-3)$

19. The common region represented by the following inequalities

$L_1 = 2x_1 + x_2 \le 6;$

$L_2 = x_1 + 2x_2 \ge 6 \qquad [x_1 \ge 0, x_2 \ge 0]$

[June 2019]



(A) OABC

(B) Outside of OAB

(C) ΔBCE

(D) ΔABE

20. A dietician recommends mixture of two kinds of foods to a person so that mixture contains at least 45 units of carbs, 25 units of protein, 15 units of fat and 15 units of fibre. The above contents of nutrients are available in the foods as below:

	Carbs	Protein	Fat	Fibre
Food-1	20	5	3	2
Food-2	10	2	4	5

[Sept. 2024]

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

If 'x' units of food-1 is mixed with 'y' units offood-2, how dietician 4 recommendation can be expressed?

(A) $20x + 10y \leq 45;\ 5x + 2y \geq 25;\ 3x + 4y \leq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(B) $20x + 10y \leq 25;\ 5x + 2y \geq 45;\ 3x + 4y \leq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(C) $20x + 10y \geq 45;\ 5x + 2y \geq 25;\ 3x + 4y \geq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(D) $20x + 10y \leq 45;\ 5x + 2y \leq 25;\ 3x + 4y \leq 15;\ 2x + 5y \leq 15;\ x \geq 0;\ y \geq 0$

21. Solve for x of the Inequalities $2 \leq \frac{3x-2}{5} \leq 4$ where x – N **[Nov. 2020]**

(A) {5, 6, 7}

(B) {3, 4, 5, 6}

(C) {4, 5, 6}

(D) None of these

22. The common region in the graph of the inequalities $x+y \leq 4, x-y \leq 4, x \geq 2$ is

(A) Equilateral triangle **[Jan. 2021]**

(B) Isosceles triangle

(C) Quadrilateral

(D) Square

23. XYZ Company has a policy for its recruitment as: it should not recruit more than eight men (x) to three women (y). How can this fact be expressed in inequality? **[Dec. 2021]**

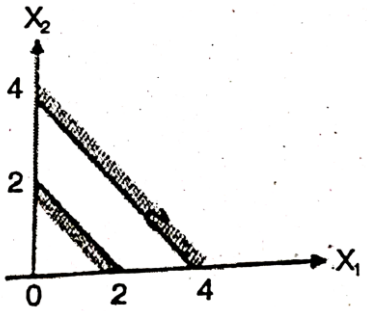
(A) $3y \geq 8x$

(B) $3y \leq \frac{x}{8}$

(C) $8y \geq 3x$

(D) $8y \leq 3x$

24. The region indicated by the shading in the graph is expressed by the inequalities **[Dec. 2021]**



(A) $x_1 + x_2 \leq 2;\ x_1 + x_2 \geq 4;\ x_1 \geq 0, x_2 \geq 0$

(B) $x_1 + x_2 \leq 2;\ x_2 x_1 + x_2 \leq 4;\ x_1 \geq 0, x_2 \geq 0$

(C) $x_1 + x_2 \geq 2;\ x_1 + x_2 \geq 4;\ x_1 \geq 0, x_2 \geq 0$

(D) $x_1 + x_2 \leq 2;\ x_1 + x_2 \geq 4;\ x_1 \geq 0, x_2 \geq 0$

25. If $2x + 5 > 3x + 2$ and $2x - 3 \leq 4x - 5$, the 'x' can take which of the following value? **[Dec. 2022]**

(A) 4

(B) –4

(C) 2

(D) –2

26. In a garment factory, an average experienced tailor can stitch 5 shirts while a fresh tailor can stitch 3 shirts daily, but the employer has to maintain an output of at least 30 shirts stitched per day. This can be formulated as **[Jun. 2023]**

(A) $5x + 3y \leq 30$

(B) $5x + 3y > 30$

(C) $5x + 3y \geq 30, x \geq 0, y \geq 0$

(D) $5x + 3y \leq 30, x \geq 0, y \geq 0$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

27. A fertilizer company produces two types of fertilizers called grade I and grade II. Each of these types is processed through a critical chemical plant unit. The plant has maximum of 180 hours available in a week. Manufacturing one bag of grade I fertilizer requires 4 hours in the plant. Manufacturing one bag of grade II fertilizer requires 10 hours in the plant. Express this using linear inequalities

(A) $2x_1 + 5x_2 \leq 180$ **[Jun. 2023]**

(B) $4x_1 + 10x_2 > 180$

(C) $2x_1 + 5x_2 > 180$

(D) $4x_1 + 10x_2 \leq 180$

28. A software company should recruit more than or equal to 10 employees at a time in their recruitment drive. Under these conditions, company recruits experienced (x) and freshers(y) employees. The value of x and y can be related by the following inequality. **[Dec. 2023]**

(A) $x + y \leq 10, x \geq 0, y \geq 0$

(B) $x + y \geq 10, x \geq 0, y \geq 0$

(C) $x + y \neq 10, x \geq 0, y \geq 0$

(D) $x + y \geq 10, x \leq 0, y \leq 0$

29. the solution of the inequalities $\frac{5-2x}{3} \leq \frac{x}{6} - 5$

(A) $x \geq 8$ **[Dec. 2023]**

(B) $x \geq 7$

(C) $x \leq 80/3$

(D) $x \geq 40/3$

30. A senior typist can type five reports and a junior typist can type three reports per day. But the management needs to complete at least 30 reports in a day. If S and J denote the number of senior and junior typists assigned for the work, which of the following inequality represents the constraint?

(A) $5S + 3J \leq 30$ **[June 2024]**

(B) $3S + 5J > 35$

(C) $5S + 3J \geq 30$

(D) $3S + 5J < 30$

31. Given the constraints, $x \leq 3, y \leq 4$ and $4x + 3y \leq 12$, the point _____is in the feasible region (Select from the below given list)

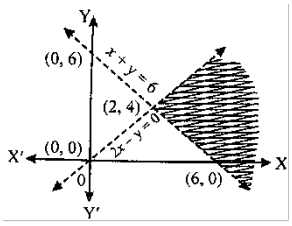
(A) (3, 4) **[June 2024]**

(B) (2, 4)

(C) (2, 2)

(D) (1, 1)

32. The shaded area is represented by which of the following option? **[Sept. 2024]**



(A) $x + y > 6;\ 2x - y > 0; x > 0$

(B) $x + y < 6;\ 2x - y > 0; x < 0$

(C) $x + y > 6;\ 2x - y < 0;\ x >$ 0

(D) $x + y > 6; 2x - y > 0; x < 0$

33. A dietician recommends mixture of two kinds of foods to a person so that mixture contains at least 45 units of carbs, 25 units of protein, 15 units of fat and 15 units of fibre. The above contents of nutrients are available in the foods as below:

	Carbs	Protein	Fat	Fibre
Food-1	20	5	3	2
Food-2	10	2	4	5

If 'x' units of food-1 is mixed with 'y' unitsoffood-2, how dietician recommendation can be expressed? **[Sept. 2024]**

(A) $20x + 10y \leq 45;\ 5x + 2y \geq 25;\ 3x + 4y \leq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(B) $20x + 10y \leq 25;\ 5x + 2y \geq 45;\ 3x + 4y \leq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(C) $20x + 10y \geq 45;\ 5x + 2y \geq 25;\ 3x + 4y \geq 15;\ 2x + 5y \geq 15;\ x \geq 0;\ y \geq 0$

(D) $20x + 10y \leq 45;\ 5x + 2y \leq 25;\ 3x + 4y \leq 15;\ 2x + 5y \leq 15;\ x \geq 0;\ y \geq 0$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

34. A company produce two type of product A & B which require processing in two machines. First machine can be used up to 15 hrs. and second can be used at most 12 hrs. in a day. The product A requires 2 hrs. on machine 1 & 3 hrs. on machine 2. The product B requires 3 hrs. on machine 1 & 1 hour on machine 2. This can be expressed as:

(A) $2x_1 + 3x_2 \le 15$, $3x_1 + x_2 \le 12$ **[Jan. 2025]**

(B) $2x_1 + 3x_2 \le 15$, $3x_1 + x_2 \le 15$

(C) $3x_1 + 2x_2 \le 15$, $2x_1 + x_2 \le 12$

(D) $2x_1 + 3x_2 \le 12$, $3x_1 + x_2 \le 15$

35. A manufacturer produces two products A and B. The profit on product A is Rs. 8 on each unit and profit on product Bis Rs. 13 on each unit. Then the objective function is

[Jan. 2025]

(A) Minimize $Z = 8x_1 + 13x_2$

(B) Maximize $Z = 8x_1 + 13x_2$

(C) Minimize $Z = 13x_1 + 8x_2$

(D) Maximize $Z = 13x_1 + 8x_2$

ANSWER KEY

1.	D	2.	D	3.	B	4.	B	5.	A
6.	C	7.	B	8.	B	9.	D	10.	C
11.	D	12.	A	13.	C	14.	D	15.	C
16.	A	17.	B	18.	B	19.	D	20.	C
21.	D	22.	B	23.	C	24.	A	25.	C
26.	C	27.	D	28.	B	29.	A	30.	C
31.	D	32.	A	33.	C	34.	A	35.	B

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 4
MATHEMATICS OF FINANCE

1. If an amount doubles at 5% p.a. C.I. then find time period? **[June 2009]**

(A) 16 years
(B) 14 years
(C) 20 years
(D) 18 years

2. If effective interest is 7% then what is compound interest p.a. compounded semiannually.

(A) 7.109%
(B) 7.243%
(C) 7.122%
(D) 7.07%

3. Find principal if simple interest is 340 Rs. less than the principal at 4% p.a. for 8 years.

(A) 600
(B) 500
(C) 800
(D) 1000

4. If in 4 yrs, the price doubles then rate of compound interest is

(A) 18%
(B) 17.5%
(C) 18.2%
(D) 18.9%

5. What is effective interest rate if rate of compound interest is 10% p.a. compounded 3 times a year?

(A) 10.24%
(B) 10.34%
(C) 10.55%
(D) 10.78%

6. If an amount double in 5 yrs, Compound interest, then in how many years it will become 8 times.

(A) 10 years
(B) 14 years
(C) 15 years
(D) 20 years

7. If P = 4000 Rs., A = 4560, T = 2 yrs. Then P = 5000 Rs., T = 4 yrs, A = ?

(A) 6400
(B) 7200
(C) 7400
(D) 8000

8. If the difference between simple & compound interest at 10% p.a. compounded annually for 2 years is 11 Rs. then principal is

(A) 1000
(B) 1100
(C) 1200
(D) 1500

9. If a sum becomes Rs. 2688 in 3 yrs & 2784 Rs. in 4 yrs then rate of SI is **[June 2009]**

(A) 5%
(B) 8%
(C) 6%
(D) 4%

10. If the sum doubles itself in 15 yrs at compound interest then in how many years it will become 8 times

(A) 30 years
(B) 60 years
(C) 50 years
(D) 45 years

11. Compound interest on certain sum @ 5% for 1 yr is Rs. 25 then find out simple interest of 2 yrs at the same rate & sum. **[Dec. 2009]**

(A) 50.25
(B) 50
(C) 51
(D) 51.5

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. In how many years will Rs. 1000 become Rs. 1331 at 10% p.a. compounded annually

(A) 2.5 years **[June 2009, Dec. 2009]**
(B) 3 years
(C) 4 years
(D) 5 years

13. If 1000 Rs. is deposited at the end of each month @ 6% p.a. paid annually. Find the amount that will be received at the end of 10th Installment

(A) 10526
(B) 10104
(C) 10228
(D) 10714

14. What is the present value of Annuity in which a sum of Rs. 1000 is deposited every year for 10 yrs, rate of interest being 6% p.a.

(A) 6984
(B) 7360
(C) 7927
(D) 7524

15. At what rate of CI will the sum of money becomes 16 times in 4 yrs. **[June 2010]**

(A) 75%
(B) 50%
(C) 150%
(D) 100%

16. Simple interest on a sum for 2 yrs @ 12% is 3600 Rs. What is the Compound Interest on the same sum for same time & same rate

(A) 3750 **[June 2010]**
(B) 3600
(C) 3816
(D) 3590

17. If the original value of Machine is Rs. 1,25,000. Find the scrap value after 20 yrs if depreciation is at the rate of 10%. Given $(0.90)^{20} = 0.12157665458$

(A) 15197 **[Dec. 2010]**
(B) 17403
(C) 16521
(D) 15649

18. If SI on principal P is calculated @ 10% for 2 yrs & CI on principal Q is calculated @ 5% for same time then what is relation between P & Q. if interest in both case is same

(A) $P = \frac{80}{81}Q$ **[Dec. 2010]**
(B) $P = \frac{41}{80}Q$
(C) $Q = \frac{80}{81}P$
(D) $Q = \frac{41}{80}P$

19. Bank A gives 9.25%, annual interest while gives Bank B gives 9.00%, Semi Annual interest. Which bank is better?

(A) A is better
(B) B is better
(C) Both are equally good
(D) Indeterminate

20. Calculate effective interest rate if rate of compound interest is 6% p.a. compounded half yearly. **[Dec. 2010]**

(A) 6.16%
(B) 6.03%
(C) 6.09%
(D) 6.21%

21. If 5000 Rs. is deposited every year at 9% p.a. for 20 yrs. Find the future value.

(A) 240305
(B) 260763
(C) 255800
(D) 251314

22. If the difference of S.I. and C.I. is 72 at 12% for 2 years. Calculate the amount.

(A) 6000 **[June 2011]**
(B) 5500
(C) 5000
(D) 7000

23. If a simple interest on a sum of money at 6% p.a. for 7 years is equal to twice of simple interest on another sum for 9 years at 5% p.a. The ratio will be:

(A) 15:14 **[June 2011]**
(B) 15:7
(C) 7:8
(D) 14:15

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

24. By mistake a clerk, calculated the simple interest on principal for 5 months at 6.5% p.a. instead of 6 months at 5.5% p.a. If the error in calculation was Rs. 25.40. The original sum of principal was ____ **[June 2011]**

(A) 50400
(B) 48600
(C) 60960
(D) 71350

25. If the simple interest on Rs. 1,400 for 3 years is less than the simple interest on Rs. 1,800 for the same period by Rs. 80, then the rate of interest is **[Dec. 2011]**

(A) $5\frac{2}{3}\%$
(B) $6\frac{1}{3}\%$
(C) $6\frac{2}{3}\%$
(D) $7\frac{1}{3}\%$

26. Nominal rate of interest is 9.9% p.a. if interest is compound monthly, what will be the effective rate of interest $\left(\frac{4000}{4033}\right)^{12}$ given = 1.1036 (approx) **[Dec. 2011]**

(A) 10.25%
(B) 10.45%
(C) 10.55%
(D) 10.36%

27. The S.I. on Rs. 2000 for 5 months at the rate of 16% per annum is **[June 2012]**

(A) 150
(B) 125
(C) 140
(D) 133.33

28. The S.I. on a sum of money is 4/9 of the principal and the no. of years is equal to the rate of interest per annum. Find the rate of interest per annum. **[June 2012]**

(A) $5\frac{2}{3}\%$
(B) $6\frac{1}{3}\%$
(C) $6\frac{2}{3}\%$
(D) $7\frac{1}{3}\%$

29. How much investment is required to yield an annual income of Rs. 420 at the rate of 7% p.a. by simple interest? **[Dec. 2012]**

(A) 6000
(B) 3000
(C) 4500
(D) 7000

30. Principal of 90.50 with simple rate of interest 7.5% p.a. was wrongly takens 5.7% and the difference came as Rs. 9.774. Find the time period? **[Dec. 2012]**

(A) 5 years
(B) 6 years
(C) 7 years
(D) 10 years

31. The difference between CI and SI on a certain sum of money for 2 years at 4% per annum is Rs. 1. The sum is **[June 2013]**

(A) 650
(B) 625
(C) 700
(D) 720

32. If the sum of money when compounded annually become 1140 in 2 years and 1710 in 3 years at rate of interest **[June 2013]**

(A) 30%
(B) 40%
(C) 45%
(D) 50%

33. What principle will amount to Rs. 370 in 6 years at 8% p.a. at simple interest **[Dec. 2013]**

(A) 280
(B) 250
(C) 300
(D) 325

34. The difference between C.I. & S.I. at 7% p.a. for 2 years is Rs. 29.4 then principal is **[Dec. 2013]**

(A) 5000
(B) 6000
(C) 6500
(D) 7000

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

35. In what time will a sum money double itself at 6.25% p.a. simple interest

(A) 15 years **[Dec. 2013]**
(B) 20 years
(C) 16 years
(D) 25 years

36. If a sum triples in 15 yrs at Simple rate of interest then the rate of interest per annum will be **[June 2014]**

(A) 15%
(B) 12%
(C) 13.3%
(D) 14.5%

37. The Partners A& B together lent Rs. 3903 at 4% p.a. interest compounded annually. After a span of 7 years. A gets the same amount as B gets after 9 years. The share of A in the sum of Rs. 3903/- would have been.

(A) 1875 **[June 2014]**
(B) 2028
(C) 2130
(D) 1940

38. How much amount is required to be invested every year as to accumulate Rs. 6,00,000 at the end of 10^{th} year, if interest is compounded annually at 10% rate of interest? [Given : $(1.1)^{10} = 2.59374$

(A) 35430 **[June 2014]**
(B) 37380
(C) 37650
(D) 36144

39. A certain sum of money was invested at S.I. for 3 years. If it has invested at rate 7% higher, then the interest have been Rs. 882 more, then the sum is **[Dec. 2014]**

(A) 4400
(B) 4200
(C) 4500
(D) 4000

40. A certain sum of money double itself in 4 years at C.I. In how many years it will become 32 times to itself **[Dec. 2014]**

(A) 8 years
(B) 12 years
(C) 16 years
(D) 20 years

41. The future value of an annuity of Rs. 1,000 made annually for 5 years at the rate of interest 14% compound annually is **[Dec. 2014, May 2018]**

(A) 6430
(B) 6570
(C) 6610
(D) 6715

42. A sum money will be doubled itself in 8 years at S.I. In how many years the sum will be tripled itself. **[June 2015]**

(A) 10 years
(B) 12 years
(C) 14 years
(D) 16 years

43. A sum of 44,000 is divided into 3 parts such that the corresponding interest earned after 2 years, 3 years and 6 years may be equal at the rate of simple interest rate 6% p.a., 8% p.a., & 6% p.a. respectively. Then the smallest part of the sum will be.

(A) 9000 **[June 2015]**
(B) 8000
(C) 6000
(D) 10000

44. Suppose your mom decides to gift you Rs. 10,000 every year starting from today for the next sixteen years. You deposit this amount in a bank as and when you receive and get 8.5% per annum interest rate compound annually. What is the present value of this money : Give that P (15,0.085) = 8.304236 **[Dec. 2015]**

(A) 93042
(B) 73042
(C) 83042
(D) 83542

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

45. Number of years a sum becomes 4 times itself at 12% p.a. simple interest is

(A) 20 years **[Dec. 2015]**
(B) 25 years
(C) 30 years
(D) 40 years

46. On a certain sum rate of interest @ 10% p.a. SI is Rs. 90 & term is 2 year, Find compound interest for the same. **[Dec. 2015]**

(A) 90
(B) 92
(C) 94.5
(D) 98

47. If an amount is kept at Simple Interest, it earns Rs. 600 in first 2 years but when kept at Compound Interest it earns at interest of Rs. 660 for the same period; then the rate of interest and principle amount respectively are. **[June 2016, May 2018]**

(A) 20%, 1500
(B) 20%, 3000
(C) 15%, 3000
(D) 15%, 1500

48. The difference between the simple interest and compound interest on a certain sum of money invested for 2 years at 5% p.a. is Rs. 30. Then the sum. **[Dec. 2016]**

(A) 15000
(B) 12000
(C) 10000
(D) 20000

49. If a person lends Rs. 6000 for 4 years and Rs. 8,000 for 3 years at S.I. The total interest earned is Rs. 2400 then the rate of interest is. **[Dec. 2016]**

(A) 8%
(B) 10%
(C) 6%
(D) 5%

50. A sum of money amount to Rs. 7803 for one year at the rate of 4% compounded semiannually then the sum invested is

(A) 7000 **[Dec. 2016]**
(B) 7200
(C) 7500
(D) 7600

51. The time by which a sum of money is 8 times of itself if it doubles itself in 15 years interest compounded annually.

(A) 42 years **[June 2009]**
(B) 43 years
(C) 45 years
(D) 46 years

52. Paul borrows Rs. 20,000 on condition to repay it with compound interest at 5% p.a. in annual instalment of Rs. 2,000 each. Find the number of years in which the debt would be paid off. **[June 2009]**

(A) 10 years
(B) 12 years
(C) 14 years
(D) 15 years

53. Find the present value of an annuity of Rs. 1,000 payable at the end of each year for 10 years. If rate of interest is 6% compounding per annum (given$(1.06)^{-10} = 0.5584$):

(A) Rs. 7,360 **[June 2010]**
(B) Rs. 8,360
(C) Rs. 12,000
(D) None of these

54. The future value of an annuity of Rs. 5,000 is made annually for 8 years at interest rate of 9% compounded annually [Given that $(1.09)^8 = 1.99256$] is _____

(A) Rs. 55,142.22 **[Dec. 2010]**
(B) Rs. 65,142.22
(C) Rs. 65,532.22
(D) Rs. 57,425.22

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

55. Mr. X bought an electronic item for Rs. 1,000. What would be the future value of the same item after 2 years, if the value is compounded semi annually at 22% per annum? **[June 2016]**

(A) Rs. 1,488.40
(B) Rs. 1,518.07
(C) Rs. 2,008.07
(D) Rs. 2,200.00

56. The future value of an annuity of Rs. 1,500 made annually for five years at interest rate 10% compounded annually is (Given that $(1.1)^5 = 1.61051$): **[June 2017]**

(A) Rs. 9,517.56
(B) Rs. 9,157.65
(C) Rs. 9,715.56
(D) Rs. 9,175.65

57. The difference between the Compound interest and Simple interest at 10% per annum for 4 years on Rs. 10,000 is Rs. _____. **[June 2017]**

(A) 650
(B) 640
(C) 641
(D) 600

58. How much amount is required to be invested every year as to accumulate Rs. 7,96,870 at the end of 10 years, if interest compounded annually at 10% given that A(10, 0.1) = 15.9374? **[June 2017]**

(A) Rs. 40,000
(B) Rs. 4,50,000
(C) Rs. 48,000
(D) Rs. 50,000

59. If compound interest on any sum at the rate of 5% for two years is Rs. 512.50 then the sum would be: **[Dec. 2017]**

(A) Rs. 3,000
(B) Rs. 4,000
(C) Rs. 5,000
(D) Rs. 6,000

60. The effective rate of interest equivalent to the nominal rate of 7% converted monthly: **[Dec. 2017]**

(A) 7.26%
(B) 7.22%
(C) 7.02%
(D) 7.20%

61. Mr. X invest Rs. 10,000 every year starting from today for next: 10 years suppose interest rate is 8% per annual compounded annually. Calculate future value of the annuity. **[May 2018]**

(A) Rs. 1,56,454.88
(B) Rs. 1,56,554.88
(C) Rs. 1,44,865.625
(D) None of these

62. How much amount is required to be invested every year so as to accumulate Rs. 3,00,000 at the end of 10 years, if interest is compounded annually at 10%? **[May 2018]**

(A) Rs. 18,823.65
(B) Rs. 1,56,554.88
(C) Rs. 1,44,865.62
(D) None of these

63. If Rs. 1,000 be invested at interest rate of 5% and the interest be added to the principal every 10 years, than the number of years in which it will amount to Rs. 2,000 is: **[May 2018]**

(A) $16\frac{2}{3}$ years
(B) $6\frac{1}{4}$ years
(C) 16 years
(D) $6\frac{2}{3}$ years

64. A person borrows Rs. 5,000 for 2 years at 4% per annual simple interest. He immediately leads to another person at $6\frac{1}{4}\%$. per annum for 2 years, find his gain in the transaction for an year. **[May 2018]**

(A) Rs. 112.50
(B) Rs. 225
(C) Rs. 125
(D) Rs. 107.50

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

65. If an amount is kept at S.I. it earns an interest of Rs. 600 in first two years but when kept at compound interest it earns an interest of Rs. 660 for the same period, then the rate of interest and principal amount respectively are: **[May 2018]**

(A) 20%., Rs. 1,200
(B) 20%, Rs. 1,500
(C) 10%, Rs. 1,200
(D) 10%, Rs. 1,500

66. If Rs. 10,000 is invested at 8% per year compounded quarterly, then the value of the investment after 2 years is:

(A) Rs. 11,716.59 **[Nov. 2018]**
(B) Rs. 10,716.59
(C) Rs. 117.1659
(D) None of the above

67. A bank pays 10% rate of interest compounded annually. A sum of Rs. 400 is deposited in the bank. The amount at the end of 1 year will be **[Nov. 2018]**

(A) Rs. 440
(B) Rs. 439
(C) Rs. 441
(D) Rs. 442

68. The certain sum of money became Rs. 692/- in 2 yrs and Rs. 800/- in 5 yrs then the principle amount is _____ **[June 2019]**

(A) Rs. 520
(B) Rs. 620
(C) Rs. 720
(D) Rs. 820

69. A sum of money amount to Rs. 6,200 in 2 years and Rs. 7,400 in 3 years as per S.I. then the principal is **[June 2019]**

(A) Rs. 3,000
(B) Rs. 3,500
(C) Rs. 3,800
(D) None

70. A sum was invested for 3 years as per C.I. and the rate of interest for first year is 9%, 2nd year is 6% and 3rd year is 3% p.a. respectively. Find the sum if the amount in three years is Rs. 550? **[June 2019]**

(A) Rs. 250
(B) Rs. 300
(C) Rs. 462.16
(D) Rs. 350

71. P = Rs. 5,000 R = 15% T = $4\frac{1}{2}$ using $I = \frac{PTR}{100}$ then I will be **[June 2019]**

(A) Rs. 3,375
(B) Rs. 3,300
(C) Rs. 3,735
(D) None

72. The effective rate of interest does not depend upon **[June 2019]**

(A) Amount of Principal
(B) Amount of Interest
(C) Number of Conversion Periods
(D) None of these

73. A person wants to lease out a machine costing Rs. 5,00,000 for a 10 year period. It has fixed a rental of Rs. 51,272 per annum payable annually starting from the end of first year. Suppose rate of interest is 10% per annum compounded annually on which money can be invested. To whom this agreement is favourable? **[June 2019]**

(A) Favour of Lessee
(B) Favour of Lessor
(C) Not for both
(D) Can't be determined

74. Let a person invest a fixed sum at the end of each month in an account paying interest 12% per year compounded monthly. If the future value of this annuity after the 12th payment is Rs. 55,000 then the amount invested every month is? **[June 2019]**

(A) Rs. 4,837
(B) Rs. 4,637
(C) Rs. 4,337
(D) Rs. 3,337

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

75. If P i^2 = Rs. 96, and R = 8% compounded annually then P = **[June 2019]**

(A) Rs. 14,000
(B) Rs. 15,000
(C) Rs. 16,000
(D) Rs. 17,000

76. Determine the present value of perpetuity of Rs. 50,000 per month @ rate of interest 12% p.a. is _____ **[June 2019]**

(A) Rs. 45,00,000
(B) Rs. 50,00,000
(C) Rs. 55,00,000
(D) Rs. 60,00,000

77. In simple interest if the principal is Rs. 2,000 and the rate and time are the roots of the equation $x^2 - 11x + 30 = 0$ then simple interest is **[June 2019]**

(A) Rs. 500
(B) Rs. 600
(C) Rs. 700
(D) Rs. 800

78. A man invests Rs. 12,000 at 10% p.a. and another sum of money at 20% p.a. for one year. The total investment earns at 14% p.a. simple interest the total investment is:

(A) Rs. 8,000 **[Nov. 2019]**
(B) Rs. 20,000
(C) Rs. 14,000
(D) Rs. 16,000

79. The difference in simple interest of a sum invested of Rs. 1,500 for 3 years is Rs. 18. The difference in their rates is:

(A) 0.4 **[Nov. 2019]**
(B) 0.6
(C) 0.8
(D) 0.10

80. Find the effective rate of interest on Rs. 10,000 on which interest is payable half yearly at 5% p.a. **[Nov. 2019]**

(A) 5.06%
(B) 4%
(C) 0.4%
(D) 3%

81. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.

(A) 10.38% **[Nov. 2019]**
(B) 5%
(C) 5.04%
(D) 4%

82. What will be the population after 3 years when present population is Rs. 25,000 and population increases at the rate of 3% in I year, at 4% in II year and at 5% in III year?

(A) Rs. 28,119 **[Nov. 2019]**
(B) Rs. 29,118
(C) Rs. 27,000
(D) Rs. 30,000

83. The value of scooter is Rs. 10,000 find its value after 7 years if rate of depreciation is 10% p.a. **[Nov. 2019]**

(A) Rs. 4,782.96
(B) Rs. 4,278.69
(C) Rs. 42,079
(D) Rs. 42,000

84. SI = 0.125P at 10% p.a. Find time.

(A) 1.25 years **[Nov. 2019]**
(B) 25 years
(C) 0.25 years
(D) None

85. Scrap value of a machine valued at Rs. 10,00,000, after 10 years within depreciation at 10% p.a.: **[Nov. 2019]**

(A) Rs. 3,48,678.44
(B) Rs. 3,84,679.45
(C) Rs. 4,00,000
(D) Rs. 3,00,000

86. The difference between CI and SI for 2 years, is 21. If rate of interest is 5% find principal **[Nov. 2019]**

(A) Rs. 8,400
(B) Rs. 4,800
(C) Rs. 8,000
(D) Rs. 8,200

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

87. Present value of a scooter is Rs. 7,290 if its value decreases every year by 10% then its value before 3 years is equal to:

(A) 10,000 **[Nov. 2019]**

(B) 10,500

(C) 20,000

(D) 20,500

88. On what sum will the compound interest at 5% per annum for 2 year compounded annually be Rs. 3,280.

(A) Rs. 32,000 **[Nov. 2020]**

(B) Rs. 16,000

(C) Rs. 48,000

(D) Rs. 64,000

89. An amount P becomes Rs. 5,100.5 and Rs. 5,203 after second and fourth years respectively. Thus values of P and R are: **[Nov. 2020]**

(A) Rs. 4,000 and 1.5

(B) Rs. 5,000 and 1

(C) Rs. 6,000 and 2

(D) Rs. 5,500 and 3

90. A certain sum invested at 4% per annum compounded semi-annually amounts to Rs. 1,20,000 at the end of one year. Find the sum: **[Nov. 2020]**

(A) 1,15,340

(B) 1,10,120

(C) 1,12,812

(D) 1,13,113

91. Find the future value of annuity of Rs. 1,000 made annually for 7 years at interest rate of 14% compounded annually. Given that $1.14^7 = 2.5023$ **[Nov. 2020]**

(A) 10,730.7

(B) 5,365.35

(C) 8,756

(D) 9,892.34

92. Find the present value of Rs. 1,00,000 to be required after 5 years if the interest rate be 9%. Given that $1.09^5 = 1.5386$.

(A) 78,995.98 **[Nov. 2020]**

(B) 64,994.15

(C) 88,992.43

(D) 93,902.12

93. A five year annuity due has periodic cash flow of Rs. 100 each year. If the interest rate is 8% the future value of this annuity is given by: **[Nov. 2020]**

(A) (Rs. 100) × (future value at rate 8% for 5 years) × (0.08)

(B) (Rs. 100) × (future value at rate 8% for 5 years) × (1 - .08)

(C) (Rs. 100) × (future value at rate 8% for 5 years) × (1 + 0.08)

(D) (Rs. 100) × (future value at rate 8% for 5 years) × $\left(\frac{1}{0.08}\right)$

94. A person decides to invest Rs. 1,25,000 per year for the next five years in an annuity which gives 5% per annum compounded annually. What is the approx. future value? (use $1.05^5 = 1.2762$, if needed)

(A) 1,59,535 **[Nov. 2020]**

(B) 6,90,500

(C) 5,90,704

(D) 3,59,535

95. Find the compound interest if an amount of Rs. 50,000 is deposited in a bank for one year at the rate of 8% per annum compounded semi-annually.

(A) Rs. 3,080 **[Nov. 2020]**

(B) Rs. 4,080

(C) Rs. 5,456

(D) Rs. 7,856

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

96. Which of the following statements is True? (assume that the yearly cash flow? Are identical for both annuities) **[Nov. 2020]**

(A) The present value of an annuity due is greater than the present value of an ordinary annuity

(B) The present value of an ordinary annuity is greater than the present value of an annuity due

(C) The future value of an ordinary annuity is greater than the future value of an annuity due

(D) The future value of an annuity due is equal to future value of ordinary annuity

97. Rs. 2,500 is paid every year for 10 years to pay off a loan. What is the loan amount if interest rate be 14% per annum compounded annually? **[Nov. 2020]**

(A) Rs. 15,847.90
(B) Rs. 13.040.27
(C) Rs. 14,674.21
(D) Rs. 16,345.11

98. An amount is lent at a nominal rate of 4.5% per annum compounded quarterly. What would be the gain in rupees over when compounded annually? **[Nov. 2020]**

(A) 0.56
(B) 0.45
(C) 0.076
(D) 0.85

99. What sum of money will produce Rs. 42,800 as an interest in 3 years and 3 months at 2.5% p.a. simple interest? **[Nov. 2020]**

(A) Rs. 3,78,000
(B) Rs. 5,26,769
(C) Rs. 4,22,000
(D) Rs. 2,24,000

100. The ratio of principal and the compound interest value for three years (compounded annually) is 216 : 127. The rate of interest (in decimal) is: **[Nov. 2020]**

(A) 0.1777
(B) 0.1567
(C) 0.1666
(D) 0.1587

101. A stock pays annually an amount of Rs. 10 from 6th year onwards. What is the present value of the perpetuity, if the rate of return is 20%? **[Nov. 2020]**

(A) 20.1
(B) 19.1
(C) 21.1
(D) 22.1

102. A certain sum amounted to Rs. 575 at 5% in a time in which Rs. 750 amounted to Rs. 840 at 4%. If the rate of interest is simple, find the sum- **[Jan. 2021]**

(A) 525
(B) 550
(C) 515
(D) 500

103. Find the amount of compound interest, if an amount of Rs. 50,000 is deposited in a bank for one year at the rate of 8% per annum compounded semiannually **[Jan. 2021]**

(A) 3,080
(B) 4,080
(C) 5,456
(D) 7,856

104. The population of a town increase by 2% of the population at the beginning of the year. The number of year by which the total increases in population would be 40% is: **[Jan. 2021]**

(A) 7 years
(B) 10 years
(C) 17 years
(D) 19 years (approx.)

105. Find the future value of annuity of Rs. 1,000 made annually for 7 year at interest rate of 14% compounded annually (Given that $1.14^7 = 2.5023$) **[Jan. 2021]**

(A) Rs. 10,730.7
(B) Rs. 5,365.35
(C) Rs. 8,756
(D) Rs. 9892.34

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

106. Two equal amounts of money an deposited in two banks each at 15% p.a. fix 3.5 year in the bank and fix 5 years in the either. The difference between the interest amount from the bank in Rs. 144. Find the sum

(A) Rs. 620 **[Jan. 2021]**
(B) Rs. 640
(C) Rs. 820
(D) Rs. 840

107. The simple on sum at 4% p.a. for 2 years is Rs. 80. Find the CI on the same sum for the same period. **[Jan. 2021]**

(A) Rs. 81.60
(B) Rs. 80.80
(C) Rs. 83.20
(D) Rs. 82.30

108. Which is a better investment 9% p.a. compounded quarterly or 9.1% p.a. simple interest? **[Jan. 2021]**

(A) 9% compounded
(B) 9.1% S.I.
(C) Both are same
(D) Cannot be said

109. The effective rate of interest corresponding to a nominal rate of 7% p.a. compounded quarterly is **[Jan. 2021]**

(A) 7.5%
(B) 7.6%
(C) 7.7%
(D) 7.18%

110. Assuming that the discount rate is 7% p.a. how much would pay to receive Rs. 200 growing at 5% annually for ever?

(A) Rs. 2,500 **[Jan. 2021]**
(B) Rs. 5,000
(C) Rs. 7,500
(D) Rs. 10,000

111. A man invested one-third of his capital at 7% one fourth at 8% and the remainder at 10%. If the annual income is Rs. 561. The capital is- **[Jan. 2021]**

(A) Rs. 4,400
(B) Rs. 5,500
(C) Rs. 6,600
(D) Rs. 5,800

112. A sum of money is lent at C.I. Rate 20% p.a. 2 years. It would fetch Rs. 482 more if the interest is compounded half yearly. The sum is: **[Jan. 2021]**

(A) Rs. 19,800
(B) Rs. 19,900
(C) Rs. 20,000
(D) Rs. 20,100

113. Rs. 800 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annually after 10^{th} payment?

(A) Rs. 4,444 **[Jan. 2021]**
(B) Rs. 8,756
(C) Rs. 3,491
(D) Rs. 8,182

114. What 'i' denote the actual rate of interest in decimal, and n denote the number of conversion periods, the formula for computing the effective rate of interest E is given by. **[Jan. 2021]**

(A) $(1+i)^n$
(B) $(1+i)^n - 1$
(C) $1-(1+i)^n$
(D) $(1+i)^{-n}$

115. The present value of an Annuity immediate is the same as **[Jan. 2021]**

(A) Annuity regular for (n – 1) plus the initial receipt in the beginning of the period
(B) Annuity regular for (n – 1) years
(C) Annuity regular for (n + 1) years
(D) Annuity regular for (n + 1) years plus the initial receipt in the beginning of the period

116. If the desired future value after 5 years with 18% interest rate is Rs. 1,50,000, then the present value (in Rs.) is (Given that $(1.18)^5 = 2.2877$)?

(A) 63,712 **[July 2021]**
(B) 65,568
(C) 53,712
(D) 41,712

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

117. The effective rate of return for 24% per annum convertible monthly is given as: **[July 2021]**

(A) 24%
(B) 26.82%
(C) 18%
(D) 24.24%

118. What is the compound interest (in Rs.) on a sum of Rs. 12,600 for $1^{1/2}$ years at 20% per annum if the interest is compounded half yearly? **[July 2021]**

(A) 4,271
(B) 4,171
(C) 4,711
(D) 4,117

119. If discount rate is 14% per annum, then hour much a company has to pay to receive Rs. 280 growing at 9% annually forever? **[July 2021]**

(A) Rs. 5,600
(B) Rs. 2,800
(C) Rs. 1,400
(D) Rs. 4,200

120. If the nominal rate of growth is 17% and inflation is 9% for the five years. Let P be the Gross Domestic Product (GDP) amount at the present year then the projected real GDP after 6 years is: **[July 2021]**

(A) 1.587 P
(B) 1.921 P
(C) 1.403 P
(D) 2.51 P

121. A sum of Rs. 7,500 amounts to Rs. 9,075 at 10% p.a., interest being compounded yearly in a certain time. The simple interest (in Rs.) on the same sum for the same time and the same rate is: **[July 2021]**

(A) 1,000
(B) 1,250
(C) 1,800
(D) 1,500

122. A loan of Rs. 1,02,000 is to be paid back in two equal annual instalments. If the rate of interest is 4% p.a., compounded annually, then the total interest charged (in Rs.) under this installment plan is: **[July 2021]**

(A) 6,160
(B) 8,120
(C) 5,980
(D) 7,560

123. If a person bought a house by paying Rs. 45,00,000 down payment and Rs. 80,000 at the end of each year till the perpetuity. Assuming the rate of interest as 16% the present value of house (in Rs.) is given as: **[July 2021]**

(A) 47,00,000
(B) 45,00,000
(C) 57,80,000
(D) 50,00,000

124. Let the operating profit of a manufacturer for five years is given as:

Years	1	2	3	4	5	6
Operating profit (in lakh Rs.)	90	100	106.4	107.14	120.24	157.34

Then the operating profit of Compound Annual Growth Rate (CAGR) for year 6 with respect to year 2 is given that: **[July 2021]**

(A) 9%
(B) 12%
(C) 11%
(D) 13%

125. If the cost of capital be 12% per annual, then the net present value (in nearest Rs.) from the given cash flow is given as:

Years	0	1	2	3
Operating profit (in thousands Rs.)	(100)	60	40	50

(A) 31048
(B) 34185
(C) 21048
(D) 24187

[July 2021]

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

126. A certain sum amounts to Rs. 15,748 in 3 years at simple interest at r% p.a. The same sum amounts to Rs. 16,510 at $(r+2)\%$ p.a. simple **[July 2021]**

(A) 10%
(B) 8%
(C) 12%
(D) 6%

127. What is the difference (in Rs.) between the simple interest and the compound interest on a sum of Rs. 8,000 for $2\frac{2}{5}$ years at the rate of 10% p.a. when the interest is compounded yearly? **[July 2021]**

(A) 136.12
(B) 129.50
(C) 151.75
(D) 147.20

128. The future value of annuity of Rs. 2,000 for 5 years at 5% compounded annually is given (in nearest Rs.) as: **[July 2021]**

(A) 51,051
(B) 21,021
(C) 11,051
(D) 61,254

129. A sum of Rs. x amounts to Rs. 27,900 in 3 years and to Rs. 41,850 in 6 years at a certain rate percent per annum when the interest is compounded yearly. The value of x is: **[July 2021]**

(A) 16,080
(B) 18,600
(C) 18,060
(D) 16,800

130. Mr. X wants to accumulate Rs. 50,00,000 at the end of 10 years. Then how much amount is required to be invested every year if interest is compounded annually at 10%? (Given that P(10, 0.10) = 15.9374298) **[Dec. 2021]**

(A) Rs. 3,13,726.87
(B) Rs. 4,13,726.87
(C) Rs. 3,53,726.87
(D) Rs. 4,53,726.87

131. Rahul invested Rs. 70,000 in a bank at the rate of 6.5% p.a. simple interest rate. He received Rs. 85,925 after the end of term. Find out the period for which sum was invested by Rahul. **[Dec. 2021]**

(A) 2 years
(B) 3 years
(C) 3.5 years
(D) 2.5 years

132. A company needs Rs. 10,000 in five years to replace as equipment. How much (in Rs.) should be invested now at an interest rate of 8% p.a. is order to provide for this equipment? **[Dec. 2021]**

(A) 6,000
(B) 6,805
(C) 10,000
(D) 11,000

133. R needs money to pay Rs. 5,00,000 in 10 years. He invested a sum in a scheme at 9% rate of interest compounded half-yearly. How much amount (in Rs.) he invested? $(1.046^{20} = 2.41171)$ **[Dec. 2021]**

(A) 3,07,321
(B) 2,70,321
(C) 2,07,321
(D) 3,40,321

134. An amount is lent at R% simple interest for R years and the simple interest amount was one-fourth of the principal amount. Then R is _____ **[Dec. 2021]**

(A) 5
(B) 6
(C) $5\frac{1}{2}$
(D) $6\frac{1}{2}$

135. A sum of money is put at 20% compound interest rate p.a. At which year the aggregated amount just exceeds the double of the original sum? **[Dec. 2021]**

(A) 6
(B) 5
(C) 4
(D) 3

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

136. The present value of Rs. 25,000 to be received after 10 years at 6% per annum compounded annually is Rs. _____. $(1.06^5 = 1.33823)$ **[Dec. 2021]**

(A) Rs. 15,960
(B) Rs. 13,960
(C) Rs. 11,960
(D) Rs. 17,960

137. A farmer borrowed ₹ 3600 at the rate of 15% simple interest per annum. At the end of 4 years, he cleared this account by paying ₹ 4000 and a cow. The cost of the cow is:

(A) ₹ 1000 **[Dec. 2022]**
(B) ₹ 1200
(C) ₹ 1550
(D) ₹ 1760

138. If ₹ 64 Amount to ₹ 83.20 in 2 years, what will ₹ 86 amount to in 4 years at the same rate percent per annum?

(A) ₹ 127.60 **[Dec. 2022]**
(B) ₹ 147.60
(C) ₹ 145.34
(D) ₹ 117.60

139. The effective annual rate of interest corresponding to a normal rate of 6% per annum payable half yearly is: **[Dec. 2022]**

(A) 6.06%
(B) 6.07%
(C) 6.08%
(D) 6.09%

140. Mr. Prakash invested money in two schemes 'A' and 'B' offering compound interest at the rate of 8% and 9% per annum respectively. It the total amount of interest accrued through these two schemes together in two years was ₹ 4818.30 and total amount invested was ₹ 27,000. What was the amount invested in schemes 'A'? **[Dec. 2022]**

(A) ₹ 12,000
(B) ₹ 12,500
(C) ₹ 13,000
(D) ₹ 13,500

141. A sum of money invested of compound interest double itself in four years. In how many years it become 32 times of itself at the same rate of compound interest. **[Dec. 2022]**

(A) 12 Years
(B) 16 Years
(C) 20 Years
(D) 24 Years

142. A sum of money doubles itself in 4 years at certain compound interest rate. In how many years this sum will become 8 times at the same compound interest rate? **[Dec. 2022]**

(A) 12 Years
(B) 14Years
(C) 16 Years
(D) 18 Years

143. The difference between compound interest and simple interest on an amount of ₹ 15,000 for 2 years is ₹ 96. What is the rate of interest per Annam? **[Dec. 2022]**

(A) 9%
(B) 8%
(C) 11%
(D) 10%

144. A machine worth ₹ 4,90,740 is depreciated at 15% on its opening value each year. When it value would reduce to ₹ 2,00,750

(A) 5 year 5 months **[Dec. 2022]**
(B) 5 year 6 months
(C) 5 years 7 months
(D) 5 year 8 months

145. How much amount is required to be invested every year so as to accumulate₹ 5,00,000 at the end of 12 years if interest is compounded annually at 10%? **[Dec. 2022]**

(A) ₹ 23381.65
(B) ₹ 24385.85
(C) ₹ 26381.65
(D) ₹ 28362.75

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

146. Raju invests ₹ 20,000 every year in a deposit scheme starting from today for next 12 years. Assuming that interest rate on this deposit is 7% per annum compounded annually. What will be the future value of this annuity? **[Dec. 2022]**

(A) ₹ 540,576
(B) ₹ 382,813
(C) ₹ 643,483
(D) ₹ 357,769

147. Mr. A invested ₹ 10,000 every year for next 3 years at the interest rate of 8 percent per annum compounded annually. What is future value of the annuity? **[Dec. 2022]**

(A) 32644
(B) 32464
(C) 34264
(D) 36442

148. ₹ 5,000 is invested every month and in an account paying interest @ 12% per annum compounded monthly. What is the future value of this annuity just after making 11^{th} payment? **[Dec. 2022]**

(A) ₹ 57,800
(B) ₹ 56,100
(C) ₹ 56,800
(D) ₹ 57,100

149. Sinking fund factor is the reciprocal of: **[Dec. 2022]**

(A) Present value interest factor of a single cash flow
(B) Present value interest factor of an annuity
(C) Future value interest factor of an annuity
(D) Future value interest factor of a single cash flow.

150. 10 years ago the earning per share (EPS) of ABC Ltd. was ₹ 5 share Its EPS for this year is ₹ 22. Compute at what rate, EPS of the company grow annually? **[Dec. 2022]**

(A) 15.97%
(B) 16.77%
(C) 18.64%
(D) 14.79%

151 Suppose you have decided to make a Systematic Investment Plan (SIP) in a mutual fund with ₹ 1,00,000 every year from today for next 10 years where you get return at the rate of 10% per annum compounded annually. What is the future value of this annuity? Given $1.1^{10} = 2.59374$.**[Jun. 2023]**

(A) ₹ 17,35,114
(B) ₹ 17,53,411
(C) ₹ 17,35,411
(D) ₹ 17,53,114

152. Ms. Paul invested ₹ 1,00,000 in a mutual fund scheme in January 2018. After oneyear in January 2019, she got a dividend amounting to ₹ 10,000 for first year, ₹ 12,000 for second year, ₹ 16,000 for third year ₹ 18,000 for fourth year and ₹ 21,000 for fifth year in January 2023. What is Compounded Annual Growth Rate (CAGR) of dividend return? Given $1.2038^4 = 2.1$ **[Jun. 2023]**

(A) 20.38%
(B) 18.59%
(C) 16.36%
(D) 15.89%

153. Mr. Ram invested a total of ₹ 1,00,000 in two different banks for a fixed period. The first bank yields an interest of 9% per annum and second, 11% per annum. If the total interest at the end of one year is 9.75% per annum, then the amount invested in these banks are respectively: **[Jun. 2023]**

(A) ₹ 52,500, ₹47,500
(B) ₹ 62,500, ₹ 37,500
(C) ₹ 57,500, ₹ 42,500
(D) ₹ 67,500, ₹ 32,500

154. A company want to replace its existing tool room machine at the end of 10 years, the expected cost of machine would be ₹ 10,00,000. If management of the company creates a sinking fund, how much provision needs to be made out of revenue each year which can earn at the rate of 10% compounded annually? Given A(10,0.10) = 15.937425. **[Jun. 2023]**

(A) ₹ 74,625
(B) ₹ 72,514
(C) ₹ 62,745
(D) ₹ 67,245

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

155. The Nominal rate of interest is 10% per annum. The interest is compounded quarterly. The effective rate of interest per annum will be: **[Jun. 2023]**

(A) 10%
(B) 10.10%
(C) 10.25%
(D) 10.38%

156. A car is available for ₹ 4,98,200 cash payment or ₹ 60,000 cash down payment followed by three equal annual instalments. If the rate of interest charged is 14% per annum compounded yearly, then total interest charged in the instalment plan is (Given P(3,0.14) = 2.32163): **[Jun. 2023]**

(A) ₹ 1,46,314
(B) ₹ 1,46,137
(C) ₹ 1,28,040
(D) ₹ 1,58,040

157. The difference between compound interest and simple interest on a certain sum of money invested for 3 years at 6% per annum is ₹ 110.16. The principle is **[Jun. 2023]**

(A) ₹ 3,000
(B) ₹ 3,700
(C) ₹ 12,000
(D) ₹ 10,000

158. A machine depreciates at 10% of its value at the beginning of a year. The cost and scrap value realized at the time of sale being ₹ 23,240 and ₹ 9,000 respectively. Approximately, for how many years the machine is put to use? **[Jun. 2023]**

(A) 7
(B) 8
(C) 9
(D) 10

159. The population of a town increases every year by 2% of the population at the beginning of that year. The approximate number of years, by which the total increase of population will be 40%, is _____ . (Given 1.02^8 = 1.17166) **[Jun. 2023]**

(A) 15
(B) 17
(C) 19
(D) 20

160. Govinda's mother decides to gift him ₹ 50,000 every year starting from today for the next five years. Govinda deposits this amount in a bank as and when he receives and gets 10% per annum interest rate, compounded annually. What is the present value of this annuity? Given P(4,0.10) = 3.16987.

(A) ₹ 2,80,493.5 **[Jun. 2023]**
(B) ₹ 2,08,493.5
(C) ₹ 2,08,943.5
(D) ₹ 2,58,493.5

161. The compound interest on ₹ 15,625 for 9 months at 16% per annum compounded quarterly is: **[Jun. 2023]**

(A) ₹ 1,851
(B) ₹ 1,941
(C) ₹ 1,951
(D) ₹ 1,961

162. If the discount rate is 10% per annum, how much amount would you pay to receive 2,500 growing at 8%, annually forever? **[Jun. 2023]**

(A) ₹ 1,25,000
(B) ₹ 2,50,000
(C) ₹ 1,50,000
(D) ₹ 2,00,000

163. Mr. Sharad got his retirement benefits amounting to ₹ 50,00,000. He want to receive a fixed monthly sum of amount for his rest of life, starting after one month and thereafter he want to pass on the same to future generation. He expects to earn an interest of 9% compounded annually. Determine how much perpetuity amount he will receive every month? **[Jun. 2023]**

(A) ₹ 39,500
(B) ₹ 38,500
(C) ₹ 37,500
(D) ₹ 36,600

164. Jonny wants to have ₹ 2,00,000 in his saving account after three year. The rate of interest offered by bank is 8% per annum compounded annually. How much should he invest today to achieve his target amount?

(A) ₹ 1,47,489.10 **[Jun. 2023]**
(B) ₹ 1,58,766.44
(C) ₹ 1,71,035.59
(D) ₹ 1,84,417.96

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

165. How much amount is required to be invested every year so as to accumulate Rs. 30,000 at the end of 10 years if the interest compounded annually at 10%. Given A(10, 0.1) = 15.9374 **[Dec. 2023]**

(A) Rs. 1882.36
(B) Rs. 1828.30
(C) Rs. 1832.65
(D) Rs. 1853.65

166. Suppose Mr. X invested Rs. 5,000 every year starting from today in mutual fund for next 10 years. Assuming that average return compounded annually is at 18% per annum. What is future value? **[Dec. 2023]**

(A) Rs. 1,83,677.68
(B) Rs. 1,38,678.85
(C) Rs. 1,83,776.53
(D) Rs. 1,38,774.55

167. A person wants to open a shop have two options to acquire a commercial space either by leasing for 10 years at annual rent of Rs. 2,00,000 or by purchasing the space for Rs. 12,00,000. If person can borrow money at 14% compounded per annum. Which alternate is most suitable? Given P(10,0.14) = 5.21611 **[Dec. 2023]**

(A) Leasing
(B) Purchase
(C) Can't say
(D) Data insufficient

168. What is the effective rate of interest when principal amount of Rs. 50,000 deposited in a nationalized bank for one year, corresponding to a nominal rate interest 8% per annum compounded quarterly, given $(1.02)^4 = 1.0824$ **[Dec. 2023]**

(A) 10.38%
(B) 8.08%
(C) 8.16%
(D) 8.24%

169. Manoj invests Rs. 12,000 at 6% per annum simple interest to obtain a total amount of Rs. 14,880. What is the time for which the amount was invested? **[Dec. 2023]**

(A) 3 years
(B) 4 years
(C) 2 years
(D) 5 years

170. Mr. X makes a deposit of Rs. 50,000 in the bank for a period of $2\frac{1}{2}$ years. If the rate of interest is 12% per annum compounded half yearly, then the maturity value of the money deposited by Mr. X is:

[Where $(1.06)^5 = 1.3382$] **[Dec. 2023]**

(A) Rs. 66,910
(B) Rs. 66,123
(C) Rs. 67,925
(D) Rs. 65,550

171. What will be the future value of an annuity of Rs. 2,500 made annually for12 years at interest rate of 5% compounded annually if $(1.05)^{12} = 1.7958$ **[Dec. 2023]**

(A) Rs. 37,588.58
(B) Rs. 39,790.00
(C) Rs. 40,873.13
(D) Rs. 42,603.68

172. If the initial investment of Rs. 4,00,000 becomes Rs. 6,00,000 in 24 months, then the Compound Annual Growth Rate (CAGR) is:

(A) 30.33% **[Dec. 2023]**
(B) 22.4%
(C) 19.46%
(D) 14.47%

173. Mrs. X invests in an annuity immediately that promises annual payments of Rs. 50,000 for the next 16 years. If the interest rate is 6% compounded annually then the approximate present value of this annuity is _____,

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

where $(1.06)^{15} = 2.3965$. **[Dec. 2023]**

(A) Rs. 5,51,217.75
(B) Rs. 5,75,900.00
(C) Rs. 5,05,288.08
(D) Rs. 5,35,612.45

174. A machine costing Rs. 1,00,000 has useful life of 10 years. If the rate of depreciation is 12%, what is scrap value of the machine at the end of life? Given $(0.88)^{10} = 0.27850$ **[Dec. 2023]**

(A) Rs. 25,850
(B) Rs. 26,850
(C) Rs. 27,850
(D) Rs. 28,850

175. Compute the compound interest on Rs. 6,000 for $1\frac{1}{4}$ years at 8% per annum. Interest will be compounded quarterly

(A) 642
(B) 630.78
(C) 634.68
(D) 624.48

176. The population of a city increases at the rate of 5% every year. What will be the population of the city in the year 2023, if its population in 2021 was 1,00,000? **[Dec. 2023]**

(A) 1,05,500
(B) 1,10,250
(C) 1,15,240
(D) 1,20,550

177. Mr. XYZ invested Rs. 60,000 in a nationalized bank in the form of fixed deposit at the rate of 7.5% per annum simple interest rate. He received Rs. 73,500 after the end of the term of fixed deposit. Calculate the period for which Rs. 60,000 was invested in fixed deposit. **[Dec. 2023]**

(A) 3 Years
(B) 3.5 Years
(C) 4 Years
(D) 4.5 Years

178. Calculate the present value of Rs. 2,000 to be required after 10 years Compounded annually at 5% per annum given $(1.05)^{10} = 1.62889$ **[Dec. 2023]**

(A) 1,227.82
(B) 1,282.48
(C) 1,328.35
(D) 1,822.65

179. If a loan of Rs. 30,000 is to be paid in 5 annual instalments with interest rate of 14% per annum, then the equal annual instalment will be _____ **[June 2024]**

(A) Rs. 7,400
(B) Rs. 8,100
(C) Rs. 8,738
(D) Rs. 8,322

180. Assuming that the discount rate is 12% per annum, how much would you pay to get Rs. 100 per year, growing at 4% annually forever? **[June 2024]**

(A) Rs. 1,425
(B) Rs. 1,300
(C) Rs. 1,250
(D) Rs. 1,150

181. Find the future value of an annuity of Rs. 5,000 made annually for 6 Years at interest rate of 12% compounded annually, if $(1 + 0.12)^6 = 1.9738$

(A) Rs. 45,575 **[June 2024]**
(A) Rs. 40,575
(B) Rs. 39,465
(C) Rs. 37,868

182. If the interest rate on a loan is 1% per month the effective annual rate of interest is:

(A) 12% **[June 2024]**
(B) 12.36%
(C) 12.68%
(D) 12.84%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

183. Ram borrowed Rs. 5,000 at 12.5% per annum compound interest. The money was repaid after 3 years. The total interest paid by him approximately is

(A) Rs. 2,119 **[June 2024]**
(A) Rs. 2,200
(B) Rs. 2,000
(C) Rs. 2,500

184. A person invests in a fund that pays 4% per annum for four years. The future value of current Rs. 4,000 would be Rs. _____. (Use, if needed, $(1.04)^4 = 1.1698$, $\frac{1}{(1.04)^4} = 0.8548$, $(1.04)^2 = 1.2160$ and $\frac{1}{(1.04)^4} = 0.8219$.)

(A) Rs. 3,419 **[June 2024]**
(B) Rs. 4,679
(C) Rs. 4,866
(D) Rs. 3,287

185. What is the present value of Rs. 5,000 to be obtained after six years if the interest rate is 5% per annum? (Use the fallowing if needed $\frac{1}{1.05^2} = 0.74621$, 0.71068, 0.67686 and 0.64462, for a = 6, 7, 8 and 9 respectively)

(A) Rs. 3,731 **[June 2024]**
(B) Rs. 3,553
(C) Rs. 3,384
(D) Rs. 3,223

186. Find the effective rate of interest if an amount of Rs. 40,000 deposited in a bank for 1 year at the rate of 10% compounded semi-annually.

(A) 10.20% **[June 2024]**
(B) 10.05%
(C) 10.25%
(D) 10.10%

187. The difference between the compound interest amount and the simple interest amount for a period of two years, at same interest rate r, is _____.

(A) $P \times r^2$ **[June 2024]**
(B) $P \times \frac{r}{2}$
(C) $P \times 2 \times r$
(D) $P^2 \times r$

188. An amount Rs. 4,500 becomes Rs. 7,200 in two years at a simple interest rate of:

(A) 15% **[June 2024]**
(B) 25%
(C) 30%
(D) 40%

189. You bought a painting 10 years ago as an investment. You originally paid Rs. 85,000 for it. If you sold it for Rs. 4,84,050, what was your annual return on investment?

(A) 47% **[June 2024]**
(B) 4.7%
(C) 19%
(D) 12.8%

190. What is the present value of an investment that pays Rs. 400 at the end of three years and Rs. 500 at the end of 6 years?

(A) Rs. 320 **[June 2024]**
(B) Rs. 335
(C) Rs. 340
(D) Rs. 280

191. At 8% compounded annually, how long will it take Rs. 750 to double?

(A) 6.5 years **[June 2024]**
(B) 48 months
(C) 9 years
(D) 12 years

192. You are considering two investments: Investment A yields 10% compounded quarterly. Investment B yields r % compounded semi-annually. Both investments have equal annual yields. Find x.

(A) 19.875% **[June 2024]**
(B) 10%
(C) 10.38%
(D) 10.125%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

193. At a certain rate of interest per annum, the difference between the compound interest and simple interest on ₹3,00,000 for two years is ₹ 480, then the rate of interest per annum is: **[Sept. 2024]**

(A) 2%
(B) 4%
(C) 6%
(D) 8%

194. The value of a machine depreciates every year at the rate of 10% per annum, on its value at the beginning of that year. If the present value of the machine is 72,900, then machine's worth 3 years ago was:

(A) ₹ 94,710 **[Sept. 2024]**
(B) ₹80,000
(C) ₹ 1,00,000
(D) ₹ 75,087

195. What is the effective rate of interest when principal amount of ₹ 50,000 deposited in a nationalized bank for one year, corresponding to a nominal rate of interest 6% per annum payable half yearly?

(A) 6.06% **[Sept. 2024]**
(B) 6.07%
(C) 6.08%
(D) 6.09%

196. Kanta wants to accumulate ₹ 4,91,300 in her savings account after three years. The rate of interest offered by bank is $6\frac{1}{4}$% per annum compounded annually. How much amount should she invest today to achieve her target amount? **[Sept. 2024]**

(A) ₹4,09,600
(B) ₹ 4,37,500
(C) ₹46,900
(D) ₹ 49,600

197. The sum required to earn a monthly interest of ₹ 1,200 at 18% per annum simple interest is: **[Sept. 2024]**

(A) ₹ 50,000
(B) ₹ 60,000
(C) ₹ 80,000
(D) ₹ 66,000

198. The compound interest on ₹ 40,000 at 12% per annum compounded quarterly for 6 months is: **[Sept. 2024]**

(A) ₹ 2,643
(B) ₹ 2,463
(C) ₹ 2,364
(D) ₹ 2,436

199. In an account paying interest @ 9% per year compounded monthly, ₹ 200 is invested at the end of each month. What is the future value of this annuity after 10th payment?
(Where $(1.0075)^{10} = 1.0775$)

(A) ₹ 1,022 **[Sept. 2024]**
(B) ₹ 2,066
(C) ₹ 2,044
(D) ₹ 2,155

200. What is the present value of 1,000 to be received after two years compounded annually at 10% interest rate ?

(A) ₹ 800 **[Sept. 2024]**
(B) ₹ 826
(C) ₹ 836
(D) ₹ 835

201. Mr. X makes a deposit of ₹ 12,000 in a bank where the amount doubles at compound interest in 5 years, then what will be the total amount he will have after twenty years?

(A) ₹ 96,000 **[Sept. 2024]**
(B) ₹1,20,000
(C) ₹ 1,24,000
(D) ₹ 1,92,000

The Earning Per Share (EPS) of a company for five years is given below:

Year	2019	2020	2021	2022	2023
EPS	40	25	40	60	90

202. Calculate the Compounded Annual Growth Rate (CAGR) of EPS.

(A) 24.47% **[Sept. 2024]**
(B) 23.47%
(C) 22.47%
(D) 21.47%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

203. A loan of 16,550 is to be paid in three equal annual instalments at compound interest. The value of annual instalment, if the rate of interest is 10% per annum is:

(A) ₹ 6,655 **[Sept. 2024]**

(B) ₹ 1,243

(C) ₹ 6,565

(D) ₹1,343

204. A Perpetuity has a cash flow of ₹ 625 and a required rate of return of 8%. If the cash flow is expected to grow at a constant rate of 4% per year, then the intrinsic value of this perpetuity (present value of growing perpetuity) is:

(A) ₹15,625 **[Sept. 2024]**

(B) ₹13,000

(C) ₹ 14,250

(D) ₹ 16,667

205. What is the annual contribution required by an organization to accumulate ₹ 20,00,000 in ten years for the construction of a new manufacturing plant, utilizing a sinking fund with an annual interest rate of 6% compounded annually?

(Where A(10, 0.06)=13.180785)

(A) ₹ 1,51,736.03 **[Sept. 2024]**

(B) ₹ 1,67,440.90

(C) ₹ 1,75,433.60

(D) ₹ 1,83,714.28

206. An investor intends to purchase a three year ₹ 1,000 par value bond having nominal interest rate of 10%. At what price the bond may be purchased now, if it matures at par and the investor requires a rate of return of 14%?

(A) ₹ 904 **[Sept. 2024]**

(B) ₹ 907.125

(C) ₹ 905.25

(D) ₹ 909

207. A roadside tea stall merchant borrows ₹ 9,000 at 2.76% Simple Interest per annum. The principal and the interest ale to be paid in 10 monthly instalments. If each instalment is double than the preceding one, find the value of the last instalment.

(A) 1,024 **[Sept. 2024]**

(B) 4,608

(C) 9,207

(D) 4,096

208. A certain amount at a rate of simple interest x, doubles in 5 years. At another rate of simple interest y, it becomes three times in 8 years. Then the difference between these two interest rates is **[Jan. 2025]**

(A) 5%

(B) 8%

(C) 3%

(D) 4%

209. Anil deposited a certain amount in a bank at the rate of 10% per annum compounded semi-annually. At the end of one year Anil received a sum of Rs. 13,230. Then the sum deposited in the bank is **[Jan. 2025]**

(A) Rs. 13,000

(B) Rs. 1,200

(C) Rs. 12,000

(D) Rs. 5,000

210. The future value of an annuity of Rs. 7,200 made annually for 5 years at the rate of 12% compounded annually is (Given that $(1.12)^5 = 1.76234$) **[Jan. 2025]**

(A) Rs. 45,740.40

(B) Rs. 4,574.50

(C) Rs. 54,740.50

(D) Rs. 2,400.50

211. John borrows a loan ofRs. 10,000 from a bank and he agreed to pay back in 24 equal instalments at the rate of 10% compound interest per annum. Then each instalment amount is (Given that $(1.1)^{24} = 9.84973$)

(A) Rs. 1,200.35 **[Jan. 2025]**

(B) Rs. 1,112.99

(C) Rs. 1,211.99

(D) Rs. 1,321.56

212. What is the present value of Rs. 8,000 to be required after 10 years if the interest rate be 6%? (Given that $(1.06)^{10} = 1.7908$)

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

(A) Rs. 6,499.87 [Jan. 2025]
(B) Rs. 4,467.28
(C) Rs. 5,867.32
(D) Rs. 1,790.86

213. The effective rate of interest corresponding to a nominal rate of 8% per annum payable quarterly is (Given that $(1.02)^4 = 1.08243216$) [Jan. 2025]
(A) 6.24%
(B) 5.38%
(C) 8.24%
(D) 82.4%

214. Sunil plans to save for his higher studies. He wants to accumulate a sum of Rs. 5,00,000 at the end of 10 years. How much amount should he invest every year if the interest rate is 10% compounded annually?
(Given that $(1.1)^{10} = 2.593742$) [Jan. 2025]
(A) Rs. 31,372.71
(B) Rs. 3,137.27
(C) Rs. 31,312.71
(D) Rs. 3,000.32

215. Rs. 1,500 is paid every years for 10 years to pay a loan. What is the loan amount, if rate of interest 5% p.a? If $(1.05)^{10} = 1.6288$
(A) Rs. 11,581.53 [Jan. 2025]
(B) Rs. 11,505.50
(C) Rs. 11,903.38
(D) Rs. 12,503.48

216. A certain amount is invested in a bank. What annual rate of interest compounded annually becomes 8 times of this investment in 5 years?(Given that $8^{1/5} = 1.515716$)
(A) 51.57% [Jan. 2025]
(B) 5.15%
(C) 15.15%
(D) 1.51%

217. If the compound interest on a certain sum for 2 years at 5% per annum is Rs. 246, then the simple interest on the same sum for double the time and double the rate per annum is:
(A) Rs. 900 [Jan. 2025]
(B) Rs. 960
(C) Rs. 1,000
(D) Rs.1,100

218. Sam invested Rs. 12,000 for 10 years in a financial company. At the end of 10th year his investment value is Rs. 18,000. Then the Compound Annual GrowthRate (CAGR) is if $(x)^{1/n} = 1.0413$ [Jan. 2025]
(A) 41.40%
(B) 4.13%
(C) 11.56%
(D) 12.06%

219. Mr. A invested Rs. 20,000 in a bank at the rate of 4.5% p.a. He receivedRs. 27,500 after end of term. Find out the period?
(A) 4.50 Yrs [Jan. 2025]
(B) 8.34Yrs
(C) 6.50Yrs
(D) 8.10 Yrs

220. Assuming that the discount rate is 12% per annum, how much would you pay to receive Rs. 100, growing at 8% annually forever?
(A) Rs.2,500 [Jan. 2025]
(B) Rs. 2,700
(C) Rs.3,000
(D) Rs. 2,000

221. Madhu deposits Rs. 100 in a Bank at the beginning of every year for 20 years at 10% interest rate compounded annually, how much would she earn after 20 years? [Given that $(1.1)^{20} = 6.7275$] [Jan. 2025]
(A) Rs. 6,300.25
(B) Rs. 6,500.45
(C) Rs. 5,600.25
(D) Rs. 6,250.35

222. How much amount is required to be invested every year so as to accumulate Rs. 15,00,000 at the end of 20 years if interest is compounded annually at 10%? [Given A(n, i) = 57.274999] [Jan. 2025]
(A) Rs. 26,189.44
(B) Rs. 29,190.35
(C) Rs. 24,155.35
(D) Rs. 30,698.44

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY									
1.	B	2.	C	3.	B	4.	D	5.	B
6.	C	7.	A	8.	B	9.	D	10.	D
11.	B	12.	B	13.	C	14.	B	15.	D
16.	C	17.	A	18.	B	19.	A	20.	C
21.	C	22.	C	23.	B	24.	C	25.	C
26.	D	27.	D	28.	C	29.	A	30.	B
31.	B	32.	D	33.	B	34.	B	35.	C
36.	C	37.	B	38.	C	39.	B	40.	D
41.	C	42.	D	43.	B	44.	A	45.	B
46.	C	47.	A	48.	B	49.	D	50.	C
51.	C	52.	D	53.	A	54.	A	55.	B
56.	B	57.	C	58.	D	59.	C	60.	B
61.	A	62.	A	63.	A	64.	B	65.	B
66.	A	67.	A	68.	B	69.	C	70.	C
71.	A	72.	A	73.	A	74.	C	75.	B
76.	B	77.	B	78.	B	79.	A	80.	A
81.	A	82.	A	83.	A	84.	A	85.	A
86.	A	87.	A	88.	A	89.	B	90.	A
91.	A	92.	B	93.	C	94.	B	95.	B
96.	A	97.	B	98.	C	99.	B	100.	C
101.	A	102.	D	103.	B	104.	C	105.	A
106.	B	107.	A	108.	A	109.	D	110.	D
111.	C	112.	C	113.	D	114.	B	115.	A
116.	B	117.	B	118.	B	119.	A	120.	A
121.	D	122.	A	123.	D	124.	B	125.	D
126.	B	127.	D	128.	C	129.	B	130.	A
131.	C	132.	B	133.	C	134.	A	135.	C
136.	B	137	D	138	C	139	D	140	A
141	C	142	A	143	B	144	B	145	A
146	B	147	B	148	A	149	C	150	A
151	D	152	A	153	B	154	C	155	D
156	C	157	D	158	C	159	B	160	B
161	C	162	A	163	C	164	B	165	A

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

166	D	167	A	168	D	169	B	170	A
171	B	172	B	173	D	174	C	175	D
176	B	177	A	178	A	179	C	180	C
181	B	182	C	183	A	184	B	185	A
186	C	187	A	188	C	189	C	190	A
191	C	192	D	193	B	194	C	195	D
196	A	197	C	198	D	199	B	200	B
201	D	202	C	203	A	204	A	205	A
206	B	207	B	208	A	209	C	210	A
211	B	212	B	213	C	214	A	215	A
216	A	217	B	218	B	219	B	220	A
221	A	222	A						

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 5
PERMUTATION & COMBINATION

1. If ${}^{n}C_{18} = {}^{n}C_{12}$, then find ${}^{32}C_{n}$

(A) 496
(B) 420
(C) 286
(D) 252

2. ${}^{n}P_{3} = 120$, find n?

(A) 8
(B) 5
(C) 7
(D) 6

3. In how many ways a committee of a 7 be made from 8 men & 5 women such that 2 women are must in the committee?

(A) 1475
(B) 1568
(C) 1620
(D) 1748

4. How many necklaces can be made by 40 different beads?

(A) 39!
(B) $\frac{39!}{2}$
(C) 40!
(D) $\frac{40!}{2}$

5. How many words can be formed from letter of the word LUCKNOW such that no two letters out of U, C, Kshould come together?

(A) 720
(B) 360
(C) 1440
(D) 120

6. $(2n-1)! = 20 \times n!$ then n is

(A) 5
(B) 6
(C) 4
(D) 3

7. How many numbers are greater than 40,000 can be made from 1, 2, 3, 4 & 5?

(A) 48
(B) 24
(C) 96
(D) 72

8. ${}^{6}P_{r} = 24 \times 6C_{r}$, then r is?

(A) 3
(B) 4
(C) 5
(D) 6

9. How many arrangements of the letter of word "EXAMINATION" can be made such that vowels come together?

(A) 50300
(B) 48600
(C) 64800
(D) 72400

10. In how many ways 7 men & 5 women grouped in 4 such that there will be exactly 3 women?

(A) 140
(B) 35
(C) 14
(D) 70

11. ${}^{n}P_{3} : {}^{n-1}P_{2} = 7 : 1$ find n?

(A) 6
(B) 7
(C) 8
(D) 10

12. In how many ways 5 Maths book, 3 Accounts book & 2 Biology book be arranged so that all Maths, all Accounts & all the Biology books are together

(A) 8460
(B) 8064
(C) 8406
(D) 8640

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

13. If $5!\,x + 6!\,(x-1) - 7! = 0$, *then* $x =$

(A) $\frac{24}{7}$

(B) $\frac{48}{7}$

(C) $\frac{36}{7}$

(D) $\frac{30}{7}$

14. There are 7 paintings in a room. How many ways are there which there is a specific painting on either side of 1 painting?

(A) 720

(B) 360

(C) 840

(D) 1440

15. ${}^{n}C_6 = {}^{n}C_8$, find ${}^{n}P_3$

(A) 2184

(B) 3024

(C) 1296

(D) 2914

16. In how many ways a committee of 6 be made out of 7 boys and 4 girls such that there are at least there are 2 girls in it?

(A) 273

(B) 310

(C) 371

(D) 425

17. How many 6 digit telephone numbers can be made?

(A) 9×9!

(B) 900000

(C) 9×8!

(D) None of these

18. In how many ways 7 books be arranged in an almirah so that 2 specific books are that corner. **[June 2009]**

(A) 60

(B) 120

(C) 240

(D) 480

19. ${}^{18}C_r = {}^{18}C_{r+2}$, then ${}^{r}C_5 =$ **[June 2009]**

(A) 28

(B) 42

(C) 56

(D) 21

20. Number of ways of painting 6 faces of a cube by 6 colours is **[June 2009]**

(A) 15

(B) 6

(C) 30

(D) 18

21. $(n+1)! = 20\times(n-1)!$ Find n. **[Dec. 2009]**

(A) 5

(B) 4

(C) 3

(D) 2

22. In how many ways letters of the word REGULATIONS be arranged so that vowels always come at even place?

(A) 4!×5! **[Dec. 2009]**

(B) 6!×4!

(C) 5!×6!

(D) 3!×4!

23. In how many ways a committee can be formed from 4 men & 6 women such that women are twice of man selected?

(A) 144

(B) 150

(C) 154

(D) 172

24. In how many ways 6 boys & 4 girls be arranged in a row so that all girls are together. **[June 2010]**

(A) 4!×6!

(B) 4!×7!

(C) 4!×5!

(D) 5!×6!

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

25. How many numbers can be made from the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 such that the number does not exceed 1000? **[June 2010]**

(A) 504
(B) 480
(C) 585
(D) 420

26. 6 different points are given on a circle. How many quadrilaterals can be formed using these points as vertices? **[June 2010]**

(A) 10
(B) 12
(C) 14
(D) 15

27. 5 children are to be arranged between 6 trees such that there is 1 child between 2 trees. In how many ways they can be arranged **[Dec. 2010]**

(A) 5!×6!
(B) 6!
(C) 5!
(D) 5!×4!

28. In how many ways 11 players can be chosen from 15 players such that 1 player should not come. **[Dec. 2010]**

(A) 256
(B) 320
(C) 364
(D) 426

29. ${}^{15}C_3 + {}^{15}C_{13}$ is **[Dec. 2010]**

(A) 364
(B) 490
(C) 560
(D) 645

30. Find the number of arrangements of 5 things taken out of 12 things, in which one particular thing must always be included. **[June 2011]**

(A) $11_{c_5} \times 5!$
(B) $11_{c_3} \times 4!$
(C) $11_{c_4} \times 5!$
(D) None of these

31. In how many ways a team of 5 can be made out of 7 boys and 8 girls, if 2 girls are compulsory to Form a team? **[June 2011]**

(A) $8_{c_2} \times 13_{c_3}$
(B) 2702
(C) 3609
(D) 2945

32. If 15 persons are to be seated around 2 round tables, one occupying 8 persons and another 7 persons. Find the number of ways in which they can be seated. **[June 2011]**

(A) $15_{c_7} \times 7! \times 6!$
(B) $2 \times 15_{c_7} \times 7! \times 6!$
(C) $15_{c_6} \times 8! \times 7!$
(D) $2 \times 15_{c_6} \times 8! \times 7!$

33. In no. of ways of distributing 3 prizes to 5 brothers is **[Dec. 2011]**

(A) 5!
(B) 60
(C) 30
(D) 5

34. There are 12 questions to be answered to be yes or no. how many ways can these be answered? (Assume you have to answer all the questions) **[Dec. 2011]**

(A) 1023
(B) 1024
(C) 4095
(D) 4096

35. A team of 5 is to be selected from 8 boys and three girls. Find the probability that it includes two particular girls.

(A) 252
(B) 84
(C) 152
(D) 110

36. ${}^{n}P_4 = 20 \times {}^{n}P_2$ then n = **[June 2012]**

(A) 6
(B) 7
(C) 9
(D) 10

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

37. In a company there are 7 CA's, 6 M.B.A.'s and 3 Engineers. How many ways can be they form a Committee, if there are two members from each field is? **[June 2012]**

(A) 720
(B) 864
(C) 926
(D) 945

38. The letter of the word "VIOLENT" are arranged so that vowels occupy even places only. The number of permutations is **[June 2012]**

(A) 72
(B) 144
(C) 36
(D) 288

39. A man has 3 sons and 6 schools within his reach. How many ways can his sons go to school, if No. two of them are in the same school? **[Dec. 2012]**

(A) 60
(B) 216
(C) 124
(D) 120

40. If ${}^{13}C_6 + 2{}^{13}C_5 + {}^{13}C_4 = {}^{15}C_x$ then x = **[Dec. 2012]**

(A) 4
(B) 8
(C) 6
(D) 3

41. Number of permutations can be formed from the letter of the word "DRAUGHT", if the two vowels are in separable. **[Dec. 2012]**

(A) 720
(B) 360
(C) 1440
(D) 480

42. The total number of shake hands in a group of 10 persons to each other are _____ **[June 2013]**

(A) 90
(B) 10!
(C) 45
(D) $\frac{10!}{2}$

43. A regular polygon has 44 diagonal then the no. of sides are _____ **[June 2013]**

(A) 11
(B) 12
(C) 9
(D) 10

44. In how many ways the letter of the word "ARTICLES" can be arranged in a row so that vowels occupy even places? **[June 2013]**

(A) 1440
(B) 2880
(C) 720
(D) 8640

45. If ${}^{15}C_r = {}^{15}C_{r+3}$, then r =? **[Dec. 2013]**

(A) 4
(B) 5
(C) 6
(D) 7

46. In how many ways can a family consists of 3 children have different birthdays in a leap year? **[Dec. 2013]**

(A) ${}^{365}P_3$
(B) ${}^{366}P_3$
(C) ${}^{365}C_3$
(D) ${}^{366}C_3$

47. If 6 times the number of permutations of n items taken 3 at a time is equal to 7 times the Numbers of permutations of (n-1) items taken 3 at a time then the value of n will be **[June 2014]**

(A) 15
(B) 18
(C) 20
(D) 21

48. ${}^{1000}C_{98} = {}^{999}C_{97} + {}^{x}C_{901}$ then value of x will be? **[June 2014 & May 2018]**

(A) 1000
(B) 98
(C) 97
(D) 999

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

49. ${}^{6}P_r = 360$ then find r **[Dec. 2014]**

(A) 2
(B) 3
(C) 4
(D) 5

50. If 5 books of English, 4 books of Tamil and 3 books of Hindi are to be arranged in a single row so that books of same language come together. **[Dec. 2014]**

(A) 5!×4!×3!
(B) 4!×3!×3!
(C) 3!×3!×5!×4!
(D) 4!×5!

51. 5 Boys and 4 Girls are to be seated in row. If the girls occupy even places then the no. of such arrangements **[Dec. 2014]**

(A) 5!×4!
(B) 2!×5!×4!
(C) $\frac{4!\times5!}{2}$
(D) None of these

52. A person has 10 friends of which 6 of them are relatives. He wishes to invite 5 persons so that 3 of them are relatives. In how many ways he an invite?

(A) 60 **[June 2015]**
(B) 90
(C) 100
(D) 120

53. A students has 3 books on computer, 3 books of Economics, 5 on Commerce. If these books are to be arranged subject wise that these can be placed on a shelf in the _____number of ways.

[June 2015 & Dec. 2017]

(A) 3!×3!×3!×5!
(B) 3!×3!×4!×5!
(C) 3!×4!×5!
(D) None of these

54. The number of 4 digit numbers that can be formed from seven digits 1, 2, 3, 5, 7, 8, 9 such that no digit being repeated in any number, which are greater than 3000 are

(A) ${}^{7}P_4$ **[June 2015]**
(B) 420
(C) 600
(D) 540

55. A question paper consist 10 questions, 6 Que. in Maths and 4 in Stats. Find the number of ways to solve question paper if at least one question is to be attempted from each section .**[Dec. 2015]**

(A) 840
(B) 1023
(C) 945
(D) 511

56. There are 6 gents and 4 ladies. A committee of 5 is to be formed so that it includes at least two ladies. **[Dec. 2015]**

(A) 144
(B) 172
(C) 192
(D) 186

57. ${}^{n}P_r = 720$ and ${}^{n}C_r = 120$ find r?

(A) 4 **[Dec. 2015 & Nov. 2018]**
(B) 2
(C) 3
(D) 5

58. How many numbers between 1000 and 10,000 can be formed with the digits 1, 2, 3, 4, 5, 6 **[Dec. 2016]**

(A) 120
(B) 144
(C) 240
(D) 360

59. If ${}^{n+1}C_{r+1} : {}^{n}C_r : {}^{n-1}C_{r-1} = 8:3:1$ then find the value of n **[Dec. 2016]**

(A) 15
(B) 16
(C) 20
(D) 21

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

60. In how many ways 4 members can occupy 9 vacant seats in a row. **[Dec. 2016]**

(A) 1400
(B) 1920
(C) 2520
(D) 3024

61. Find the number of arrangements in which the letters of the word 'MONDAY' be arranged so that the words thus formed begin with 'M' and do not end with 'N'.

(A) 720 **[June 2009]**
(B) 120
(C) 96
(D) None

62. In how many ways can 17 billiard balls be arranged if 7 of them are black, 6 red and 4 while? **[June 2009]**

(A) 4084080
(B) 1
(C) 8048040
(D) None of these

63. Out of 4 gents and 6 ladies, a committee is to be formed. Find the number of ways the committee can be formed such that it comprises of at least 2 gents and the number of ladies should at least be double of gents. **[Dec. 2009]**

(A) 94
(B) 132
(C) 136
(D) 104

64. How many different words can be formed with the letters of the word "LIBERTY"

(A) 4050 **[Dec. 2013]**
(B) 5040
(C) 5400
(D) 4500

65. In how many ways can a selection of 6 out of 4 teachers and 8 students be done so as to include at least two teachers?

(A) 220 **[June 2016]**
(B) 672
(C) 596
(D) 968

66. There are 10 students in a class including 3 girls. The number of ways to arrange them in a row when any two girls out of three never come together:

(A) ${}^{8}P_{3}\lfloor 7$ **[June 2016]**
(B) ${}^{3}P_{3}\lfloor 7$
(C) ${}^{8}P_{3}\lfloor 10$
(D) None of these

67. The maximum number of points of inter section of 10 circles will be: **[June 2016]**

(A) 2
(B) 20
(C) 90
(D) 180

68. If ${}^{10}C_3 + 2\times {}^{10}C_4 + {}^{10}C_5 = {}^{n}C_5$ then value of n is: **[June 2017]**

(A) 10
(B) 11
(C) 12
(D) 13

69. The number of parallelograms, formed from a set of six parallel lines intersecting another set of four parallel lines is:

(A) 360 **[June 2017]**
(B) 90
(C) 180
(D) 45

70. If ${}^{n}P_{13} : {}^{n+1}P_{12} = 3:4$, then the value of 'n' will be: **[Dec. 2017]**

(A) 13
(B) 15
(C) 18
(D) 31

71. The number of triangle that can be formed by choosing the vertices from a set of 12 points, seven of which lie on the same straight line, is: **[May 2018]**

(A) 185
(B) 175
(C) 115
(D) 105

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

72. The number of words from the letters of the word BHARAT, in which B and H will never come together, is **[Nov. 2018]**

(A) 360
(B) 240
(C) 120
(D) None of the above

73. The value of N in $\frac{1}{7!}+\frac{1}{8!}=\frac{N}{9!}$ is

(A) 81 **[Nov.2018]**
(B) 78
(C) 89
(D) 64

74. Which of the following is a correct statement. **[June 2019]**

(A) ${}^{n}p_{n}={}^{n}p_{n-1}$
(B) ${}^{n}p_{n}={}^{2n}p_{n-2}$
(C) ${}^{n}p_{n}={}^{3n}p_{n-3}$
(D) ${}^{n}p_{n}={}^{n.(n-1)}p_{n-1}$

75. If these are 40 guests in a party. If each guest takes a shake hand with all the remaining guests. Then the total number of hands shake is _____.

(A) 780 **[June 2019]**
(B) 840
(C) 1,560
(D) 1,600

76. If ${}^{11}C_{x}={}^{11}C_{2x-4}$ and $x\neq 4$ than the value of ${}^{7}C_{x}=$ **[June 2019]**

(A) 20
(B) 21
(C) 22
(D) 23

77. In how many ways can the crew of an eight member boat be arranged so that 3 particular of crew can row only one side and 2 row on the other side? **[June 2019]**

(A) 1,728
(B) 256
(C) 164
(D) 126

78. Three girls and five boys are to be seated in a row so that no two girls sit together. Total no. of ways of this arrangement are:

(A) 14,400 **[Nov. 2019]**
(B) 120
(C) ${}^{5}p_{3}$
(D) $3!\times 5!$

79. How many numbers can be formed with the help of 2, 3, 4, 5, 6, 1 which are not divisible by 5, given that it is a five-digit no. and digits are not repeating?

(A) 600 **[Nov. 2019]**
(B) 400
(C) 1200
(D) 1400

80. How many different groups of 3 people can be formed from a group of 5 people?

(A) 5 **[Nov. 2019]**
(B) 6
(C) 10
(D) 9

81. In how many ways can 4 people be selected at random from 6 boys and 4 girls if there are to be exactly 2 girls?

(A) 90 **[Nov. 2019]**
(B) 360
(C) 92
(D) 480

82. ${}^{n}P_{3}:{}^{n}P_{2}=2:1$. Find n. **[Nov. 2019]**

(A) 4
(B) $\frac{7}{2}$
(C) 5
(D) $\frac{2}{7}$

83. A fruit basket contains 7 apples, 6 bananas, and 4 mangoes. How many selections of 3 fruits can be made so that all 3 are apples?

(A) 35 ways **[Nov. 2020]**
(B) 120 ways
(C) 165 ways
(D) 70 ways

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

84. Out of 7 boys and 4 girls, a team of a debate club of 5 is to be chosen. The number of teams such that each team includes at least one girl is: **[Nov. 2020]**

(A) 439
(B) 429
(C) 419
(D) 441

85. If ${}^{n}p_4 = 20\,{}^{n}p_2$ where p denotes the number of permutations, then n is: **[Nov. 2020]**

(A) 4
(B) 2
(C) 5
(D) 7

86. From a group of 8 men and 4 women, 4 persons are to be selected to form a committee so that at least 2 women are there on the committee. In how many ways can it be done? **[Nov. 2020]**

(A) 168
(B) 201
(C) 202
(D) 220

87. Eight Chairs are numbered from 1 to 8. Two women and three men are to be seated by allowing one chair for each. First, the women choose the chairs from the chairs numbered 1 to 4 and then men select the chairs from the remaining.
The number of possible arrangement is: **[Jan. 2021]**

(A) 120
(B) 288
(C) 32
(D) 1440

88. 'n' locks and 'n' corresponding keys are available but the actual combination is not known. The maximum number of trials that are needed to assigns the keys to the corresponding locks is: **[Jan. 2021]**

(A) $(n-1)C_2$
(B) $(n+1)C_2$
(C) $\sum_{k=2}^{n}(k-1)$
(D) $\sum_{k=2}^{n}k$

89. There are ten flights operating between city A and city B. The number of ways in which a person can travel from city A to city B and return by different flight is: **[Jan. 2021]**

(A) 90
(B) 95
(C) 80
(D) 78

90. How many four-digit odd numbers can be formed with digits 0, 1, 2, 3, 4, 7 and 8? **[Jan. 2021]**

(A) 150
(B) 300
(C) 120
(D) 210

91. In how many different ways can the letters of the word 'DETAIL' be arranged so that the vowels occupy only the odd positions? **[Jan. 2021]**

(A) 32
(B) 36
(C) 48
(D) 60

92. ${}^{n}C_P + 2\,{}^{n}C_{P-1} + {}^{n}C_{P-2} = ?$ **[Jan. 2021]**

(A) ${}^{n+1}C_P$
(B) ${}^{n+2}C_P$
(C) ${}^{n+1}C_{P+1}$
(D) ${}^{n+2}C_{P-1}$

93. A business houses wishes to simultaneously elevate two of its six branch heads. In how many ways can these elevations take place? **[Jan. 2021]**

(A) 12
(B) 3
(C) 6
(D) 15

94. If ${}^{n}p_6 = 20\,{}^{n}p_4$ then the value of n is given by: **[July 2021]**

(A) $n = 5$
(B) $n = 3$
(C) $n = 9$
(D) $n = 8$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

95. How many numbers of seven digit numbers which can be formed from the digits 3, 4, 5, 6, 7, 8, 9 no digits being repeated are not divisible by 5? **[July 2021]**

(A) 4320

(B) 4690

(C) 3900

(D) 3890

96. A person can go from place 'A' to 'B' by 11 different modes of transport but is allowed to return to "A" by any mode other than the one earlier. The number of different ways in which the entire journey can be completed is: **[July 2021]**

(A) 110

(B) 10^{10}

(C) 9^5

(D) 10^9

97. The number of ways 5 boys and 5 girls can be seated at a round table, so no two boys are adjacent is: **[July 2021]**

(A) 2,550

(B) 2,880

(C) 625

(D) 2,476

98. The number of four letter words can be formed using the letters of the word DECTIONARY is **[Dec. 2021]**

(A) 5040

(B) 720

(C) 90

(D) 30240

99. The number of words that can be formed using the letters of the "PETROL" such that the words do not have "P" in the first position, is **[Dec. 2021]**

(A) 720

(B) 120

(C) 600

(D) 540

100. If ${}^{n}p_{2} = 12$, then the value of n is **[Dec.2021]**

(A) 2

(B) 3

(C) 4

(D) 6

101. The number of different ways the letters of the word "DETAIL" can be arranged in such a way that the vowels can occupy only the odd position is **[Dec. 2021]**

(A) 32

(B) 36

(C) 48

(D) 60

102. Six boys and five girls are to be seated for a photograph in a row such that no two girls sit together and no two boys sit together. Find the number of ways in which this can be done. **[Dec. 2021]**

(A) 74,200

(B) 96,900

(C) 45,990

(D) 86,400

103. The number of ways 4 boys and 3 girls can be seated in a row so that they are alternate is **[Dec. 2022]**

(A) 12

(B) 288

(C) 144

(D) 256

104. How many 3 digit odd numbers can be formed using the digits 5,6,7,8,9, if the digits can be repeated? **[Dec. 2022]**

(A) 55

(B) 75

(C) 65

(D) 86

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

105. If ${}^{n}p_{r} = 3024$ and ${}^{n}c_{r} = 126$, then find n and r [Dec. 2022]

(A) 9,4
(B) 10,3
(C) 12,4
(D) 11,4

106. There are 20 points in a plane area. How many triangles can be formed by these points if 5 points are collinear? [Dec. 2022]

(A) 550
(B) 560
(C) 1130
(D) 1140

107. A committee of 3 women and 4 men is to be formed out of 8 women and 7 men. The Mrs. Kajal refuses to serve in a committee in which Mr. Yash is a member. The number of such committees can be: [Jun. 2023]

(A) 1530
(B) 1500
(C) 1520
(D) 1540

108. If ${}^{6}P_{2r} = 12 \times {}^{6}P_{r}$, then r is equal to [Jun. 2023]

(A) 1
(B) 2
(C) 3
(D) 4

109. In how many different ways can the letters of the word 'SOFTWARE' be arranged so that the vowels always come together? [Jun. 2023]

(A) 720
(B) 1440
(C) 2880
(D) 4320

110. In the next world cup of cricket, there will be 12 teams divided equally into two equal groups. Team of each group will play a match against other teams of the group. From each group, 3 top teams will qualify for next round. In this round, each team will play against each other. Four top teams of this round will qualify for semi-finals and play against each other and then two top teams will go to final, where they play the best of three matches. How much minimum number of matches in the next world cup will be? [Jun. 2023]

(A) 54
(B) 53
(C) 38
(D) 43

111. In how many different ways can the letters of the word 'CORPORATION' be arranged so that the vowels always come together? [Dec. 2023]

(A) 810
(B) 1440
(C) 25200
(D) 50400

112. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$ then r is equal to: [Dec. 2023]

(A) 5
(B) 4
(C) 3
(D) 2

113. Find 'n' if ${}^{n}P_{2} = 72$ [Dec. 2023]

(A) 12
(B) 36
(C) 24
(D) 9

114. A user wants to create a password using 4 lowercase letters (a – z) and 2 uppercase letters (A-Z). No letter can be repeated in any form. In how many ways can the password be created if the password must start with an uppercase letter? [June 2024]

(A) $26 \times 25 \times 24 \times 23 \times 22 \times 5 \times 21$
(B) $26 \times 25 \times 24 \times 23 \times 22 \times 2 \times 21$
(C) $26 \times 5 \times 25 \times 24 \times 23 \times 2 \times 22 \times 21$
(D) $6 \times 26 \times 25 \times 24 \times 23 \times 22 \times 21$

115. In how many ways can 5 boys and 3 girls sit in a row so that no two girls are together. [June 2024]

(A) 14,400
(B) 14,000
(C) 14,425
(D) 12,400

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

116. In how many ways the letters of the word "STADIUM" be arranged in such a say that the vowels all occur together?

(A) 7!/3!
(B) 5! 4!
(C) 5! 3!
(D) 7! 3!

[June 2024]

117. How many ways can 5 different trophies can be arranged on a shelf if one participate trophy must always be in the middle?

(A) 24
(B) 120
(C) 48
(D) 144

[June 2024]

118. In a party every person shakes hands with every other person. If there are 105 handshakes in total, find the number of persons in the party.

(A) 14
(B) 15
(C) 21
(D) 22

[Sept. 2024]

119. A selection is to be made for one post of Principal and two posts of Vice-Principal. Amongst the six candidates called for the interview, only two are eligible for the post of Principal, while they all six are eligible for the post of Vice-Principal. The number of possible combinations for the selection is:

(A) 4
(B) 12
(C) 18
(D) 20

[Sept. 2024]

120. In a class of 4 boys and 3 girls, they are required to sit in a row in such a way that no two girls can sit together. Compute, in how many different ways they can sit together.

(A) 60
(B) 480
(C) 720
(D) 1,440

[Sept. 2024]

121. How many total combinations can be formed of 8 different counters marked as 1, 2, 3, 4, 5, 6, 7 & 8, taking 4 counters at a time and there being at least one odd and one even numbered counter in each combination?

(A) 68
(B) 66
(C) 64
(D) 62

[Sept. 2024]

122. In how many ways can 5 Doctors, 4 Professors, and 6 Auditors be seated in a row so that all person of the same profession sit together?

(A) $3! \times 5!$
(B) $3! \times 5! \times 4!$
(C) $3! \times 5! \times 4! \times 6!$
(D) $3! \times 5! \times 6!$

[Jan. 2025]

123. In how many ways can 13 balls be arranged, if 4 of them are black, 6 red &5 are white?

(A) 3004
(B) 3005
(C) 3003
(D) 3008

[Jan. 2025]

124. A panel has total of 11 members including 5 males and 6 females. Find out the number of ways of picking 2 males and 3 females from the given panel team.

(A) 110
(B) 200
(C) 220
(D) 350

[Jan. 2025]

125. In how many ways can an interview panel of 3 members be formed from 3 engineers, 2 psychologists and 3 managers if at least 1 engineer must be included?

(A) 30
(B) 15
(C) 46
(D) 45

[Jan. 2025]

126. A committee of 3 members is formed from 5 women and 3 men in such a way that it consists at least 2 members who are women. In how many different ways can it be done?

(A) 40
(B) 50
(C) 60
(D) 30

[Jan. 2025]

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	A	2.	D	3.	B	4.	B	5.	C
6.	D	7.	A	8.	B	9.	C	10.	D
11.	B	12.	D	13.	B	14.	D	15.	A
16.	C	17.	B	18.	C	19.	C	20.	C
21.	B	22.	C	23.	C	24.	B	25.	C
26.	D	27.	C	28.	C	29.	C	30.	C
31.	B	32.	B	33.	B	34.	D	35.	B
36.	B	37.	D	38.	B	39.	D	40.	C
41.	C	42.	C	43.	A	44.	B	45.	C
46.	B	47.	D	48.	D	49.	C	50.	C
51.	A	52.	D	53.	A	54.	C	55.	C
56.	D	57.	C	58.	D	59.	A	60.	D
61.	C	62.	A	63.	C	64.	B	65.	B
66.	A	67.	C	68.	C	69.	B	70.	B
71.	A	72.	B	73.	A	74.	A	75.	A
76.	B	77.	A	78.	A	79.	A	80.	C
81.	A	82.	A	83.	A	84.	D	85.	D
86.	B	87.	D	88.	C	89.	A	90.	B
91.	B	92.	B	93.	D	94.	C	95.	A
96.	A	97.	B	98.	A	99.	C	100.	C
101.	B	102.	D	103.	C	104.	B	105.	A
106.	C	107.	D	108.	B	109.	D	110.	B
111.	D	112.	C	113.	D	114.	A	115.	A
116.	C	117.	A	118.	B	119.	D	120.	D
121.	A	122.	C	123.	C	124.	B	125.	C
126.	A								

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 6
SEQUENCE AND SERIES-ARTHMETIC AND GEOMETRIC PROGRESSION

1. If the series is in AP with common difference 2 & T_1, T_3, T_7 are in GP find T_2

(A) 4
(B) 6
(C) 8
(D) 10

2. If the series is an A.P. $T_P = \frac{1}{q}. T_q = \frac{1}{p}$ then, T_{pq}=?

(A) 1
(B) pq
(C) p+q
(D) $\frac{1}{p+q}$

3. Sum of all the integers between 2 & 100 which are divisible by 3

(A) 1430
(B) 1620
(C) 1595
(D) 1683

4. If $k^2 + k + 1, 2k^2 + k$ &$3k^2 - 4k + 1$ are in A.P. then K is

(A) $\frac{1}{5}$
(B) 1
(C) $\frac{2}{5}$
(D) $\frac{1}{2}$

5. Divide 144 in 3 parts such that they are in A.P. & the largest is the double of smallest. Find the smallest part **[June 2010]**

(A) 32
(B) 34
(C) 64
(D) 68

6. $1+1/3+1/3^2+\ldots\ldots = x$

$1+1/4+1/4^2+ \ldots\ldots = y$ find x.y

(A) 1
(B) $\frac{1}{2}$
(C) 2
(D) $\frac{1}{3}$

7. $\sqrt{2}, 5\sqrt{2}, 9\sqrt{2}$ ... find 9th term of series.

(A) $29\sqrt{2}$
(B) $33\sqrt{2}$
(C) $37\sqrt{2}$
(D) None of these

8. How many terms of the series $256 + 128 + 64 + \ldots\ldots$ will give a total of 511

(A) 7
(B) 9
(C) 8
(D) 10

9. If in an AP, $T_7 : T_{10} = 5:7$ then what is $T_8 : T_{11} = ?$ **[June 2009]**

(A) 6:7
(B) 15:17
(C) 17:23
(D) 21:25

10. $\sum n^2$ is

(A) $\frac{n(n+1)}{2}$
(B) $\frac{n(n+1)(2n+1)}{6}$
(C) $\left[\frac{n(n+1)}{2}\right]^2$
(D) None of these

11. Sum of infinite GP is 15 & sum of square of these term is 45. Find the common ratio. **[June 2009]**

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $\frac{3}{4}$
(D) $\frac{2}{3}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. If first terms of AP is – 4 & last term of AP is 146 then sum of its terms is 7171. Find the number of terms.

(A) 100
(B) 101
(C) 80
(D) 90

13. Insert two geometric means between $1/\sqrt{2}$&2

(A) $\sqrt{2}, \frac{1}{2}$
(B) $1, \sqrt{2}$
(C) $\sqrt{2}, \frac{1}{\sqrt{2}}$
(D) None of these

14. 1-1+1-1+1-1+1-1+.... **[Dec. 2009]**

(A) 0
(B) $\frac{1}{2}$
(C) 1
(D) None of the above

15. If a_1, a_2, a_3 are in A.P. & $a_1 = 2$ What should be the common difference such that $(a_1 + a_2)\, a_3$ is min.

(A) $\frac{5}{2}$
(B) $\frac{-5}{2}$
(C) $\frac{2}{5}$
(D) $\frac{-2}{5}$

16. $1+4/5+7/5^2+10/5^3+\ldots\ldots\infty$ **[June 2010]**

(A) $\frac{23}{29}$
(B) $\frac{35}{48}$
(C) $\frac{35}{16}$
(D) $\frac{23}{58}$

17. If Sum (S_n) of 'n' terms of an Arithmetic Progression is $(2n^2+n)$. What is the difference of its 10^{th} and 1^{st} term?

(A) 40 **[June 2011]**
(B) 38
(C) 36
(D) 30

18. Find the product of :

$(243), (243)^{1/6}, (243)^{1/36}$ .....∞

(A) 243 **[June 2011]**
(B) 81
(C) 729
(D) 256

19. Insert two arithmetic means between 68 and 260 **[June 2011, May 2018]**

(A) 132, 196
(B) 120, 190
(C) 152, 210
(D) 145, 190

20. Geometric Mean of P, P^2, P^3 .... P^n will be:

(A) $P^{\frac{n}{2}}$ **[June 2011]**
(B) $p^{\frac{n+1}{2}}$
(C) p^n
(D) p^{n+1}

21. Find the number whose arithmetic mean is 12.5 and geometric mean is 10.

(A) 12, 13 **[Dec. 2011]**
(B) 5, 20
(C) 10, 15
(D) 4, 25

22. If sum of 3 arithmetic means between "a" and 22 is 42, then "a" is **[Dec. 2011]**

(A) 5
(B) 7
(C) 6
(D) 8

23. If each month Rs. 100 increases in any sum then find out the total sum after 10 month, if the sum of first month is Rs. 2,000

(A) 22000 **[Dec. 2011]**
(B) 22500
(C) 23500
(D) 24500

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

24. The sum of all two digit odd numbers is

(A) 2550 **[Dec. 2011]**
(B) 2450
(C) 2475
(D) 2400

25. If 5^{th} term of a G.P. is $(3)^{1/3}$, then the product of first nine terms is **[Dec. 2011]**

(A) 27
(B) 9
(C) $\sqrt[3]{3}$
(D) 3^9

26. The sum of the third and ninth term of an A.P. is 8. Find the sum of the first 11 term of the progression. **[Dec. 2011]**

(A) 40
(B) 41
(C) 44
(D) 48

27. In an A.P. if the 4^{th} term is 3 times the first term and 7^{th} term exceeds twice the 3^{rd} term by 1 then the values of a and d are respectively. **[June 2012]**

(A) 3, 4
(B) 4, 3
(C) 2, 3
(D) 3, 2

28. If the 8^{th} term of an A.P. is 15 then the sum of first 15 term is **[June 2012]**

(A) 144
(B) 169
(C) 225
(D) 361

29. Find the sum of the series $2, \frac{4}{y}, \frac{8}{y^2}, \frac{16}{y^3} \ldots \ldots \infty$ given that $y > 2$ is

(A) $\frac{y}{2-y}$ **[June 2012]**
(B) $\frac{y}{y-2}$
(C) $\frac{2y}{y-2}$
(D) $\frac{y}{2y-1}$

30. In an A.P. the common difference is 2 and sum of n terms is 49. Find n if 7^{th} term is 13

(A) 10 **[Dec. 2012]**
(B) 8
(C) 9
(D) 7

31. If the sum of n terms is $2n^2 + 5n$ then is nth term is **[Dec. 2012]**

(A) 4n+3
(B) 4n-3
(C) 2n+3
(D) 2n-3

32. The first term of G.P. whose second term is 2 and sum to infinity is 8 will be

(A) 3 **[Dec. 2012]**
(B) 4
(C) 5
(D) 6

33. In an A.P. If $S_n = 3n^2 - n$ and its common difference is '6' then first term is _____

(A) 2 **[June 2013]**
(B) 1
(C) 3
(D) 5

34. In an A.P. if the sum of 4^{th}& 12^{th} terms is '8' then sum of first 15 term is _____

(A) 75 **[June 2013]**
(B) 50
(C) 48
(D) 60

35. There are 'n' AMs between 7 & 71 and 5^{th} AM is 27 then 'n' = _____ **[June 2013]**

(A) 14
(B) 16
(C) 15
(D) 20

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

36. In a G.P. the 6th term is 729 and the common ratio is 3 then 1st term is _____ **[June 2013]**

(A) 3
(B) 6
(C) 9
(D) 18

37. An AP has 13 terms whose sum is 143. The third term is 5, then first term is **[Dec. 2013]**

(A) 3
(B) 5
(C) 2
(D) 6

38. The value of $1^3 + 2^3 + 3^3 + \cdots + n^3$ is equal to **[June 2014]**

(A) $\frac{n(n+1)}{2}$
(B) $\left[\frac{n(n+1)}{2}\right]^2$
(C) $\frac{n(n-1)}{6}$
(D) None of these

39. The sum of the infinite GP $1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \cdots \infty$ is equal to **[June 2014]**

(A) $\frac{2}{3}$
(B) $\frac{3}{2}$
(C) $\frac{5}{3}$
(D) $\frac{4}{3}$

40. The sum of m terms of the series is 1+11+111+..... is equal to **[June 2014 & 15, May 2018]**

(A) $\frac{1}{9}\left[10(10^n - 1) - \frac{n}{9}\right]$
(B) $\frac{1}{9}\left[\frac{10}{9}(10^n - 1) - n\right]$
(C) $\frac{1}{81}[10(10^n - 1) - n]$
(D) $\frac{1}{81}\left[\frac{10}{9}(10^n - 1) - n\right]$

41. Sum of first n terms of an A.P. is $6n^2 + 6n$.Then find 4th term of series. **[Dec. 2014]**

(A) 42
(B) 46
(C) 48
(D) 50

42. In an A.P. If $S_n = n^2p$ and $S_m = m^2p$, $(m \neq n)$then S_p **[Dec. 2014]**

(A) p^2
(B) p^3
(C) $2p^3$
(D) p^4

43. If the numbers x, y, z are in G.P. then the numbers $x^2 + y^2, xy + yz, y^2 + z^2$ are in _____ **[Dec. 2014]**

(A) AP
(B) HP
(C) GP
(D) None of these

44. In an A.P. if the 3rd term is 18, 7th term is 30 then the sum of first 20 terms is **[June 2015]**

(A) 495
(B) 620
(C) 545
(D) 810

45. The sum of n terms of an AP is $3n^2 + 5n$, which terms of AP is 164. **[Dec. 2015]**

(A) 25
(B) 26
(C) 27
(D) 28

46. Three numbers a, b, c are in A.P. find a–b+c **[Dec. 2015]**

(A) a
(B) b
(C) c
(D) $\frac{a+b}{2}$

47. If $\frac{1}{b+c}, \frac{1}{c+a}, \frac{1}{a+b}$ are in Arithmetic Progression then a^2, b^2, c^2 are in _____ **[June 2016]**

(A) AP
(B) GP
(C) HP
(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

48. A G.P. (Geometric Progression) consists of 2n terms. If the sum of the terms occupying the odd places is S_1 and that of the terms in even places is S_2, the common ratio of the progression is **[June 2016]**

(A) $\frac{S_1}{S_2}$

(B) $\frac{S_2}{S_1}$

(C) $\frac{S_2^2}{S_1^2}$

(D) $\sqrt{S_1 S_2}$

49. 2.353535 ..... = **[Dec. 2016]**

(A) $\frac{233}{99}$

(B) $\frac{237}{99}$

(C) $\frac{235}{100}$

(D) $\frac{235}{99}$

50. The number of terms of the series needed for the sum of the series 50 + 45 + 40 + ...To become zero **[Dec. 2016]**

(A) 18

(B) 19

(C) 20

(D) 21

51. A person received the salary for the 1st year is Rs. 5,00,000 per year and he received an increment of Rs. 15,000 per year than the sum of the salary he taken in 10 years.

(A) 48,50,000 **[Dec. 2016]**

(B) 50,30,000

(C) 56,75,000

(D) 60,20,000

52. If G be Geometric Mean between two numbers a and b, then the value of $\frac{1}{G^2-a^2}+\frac{1}{G^2-b^2}$ is equal to **[Dec. 2010]**

(A) G^2

(B) $3G^2$

(C) $\frac{1}{G^2}$

(D) $\frac{2}{G^2}$

53. If arithmetic mean between roots of a quadratic equation is 8 and the geometric mean between them is 5, the equation is _____. **[June 2012]**

(A) $x^2-16x-25=0$

(B) $x^2-16x+25=0$

(C) $x^2-16x+5=0$

(D) None of these

54. If Geometric mean (G.M.) of a, b, c, d is 3, then G.M. of $\frac{1}{a},\frac{1}{b},\frac{1}{c},\frac{1}{d}$ will be:

(A) $\frac{1}{3}$ **[Dec.2013]**

(B) 3

(C) 81

(D) $\frac{1}{81}$

55. The arithmetic mean of the square of first 2n natural numbers is: **[Dec. 2014]**

(A) $\frac{1}{6}(2n+1)(4n-1)$

(B) $\frac{1}{6}(2n-1)(4n-1)$

(C) $\frac{1}{6}(2n-1)(4n+1)$

(D) $\frac{1}{6}(2n+1)(4n+1)$

56. If S be the sum, P the product and R is the sum of reciprocals of n-terms in G.P. then P^2R^n = _____. **[June 2015]**

(A) S^{2n}

(B) S^n

(C) S^{-2n}

(D) S^{-n}

57. Find the two numbers whose geometric mean is 5 and arithmetic mean in 7.5.

(A) 10 and 5 **[Dec. 2015]**

(B) 13.09 and 1.91

(C) 12 and 3

(D) None of the above

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

58. The sum of n terms of the series $\log x + \log\frac{x^2}{y} + \log\frac{x^3}{y^2} + ...$is **[June 2016]**

(A) $\frac{n}{2}\left[2n\log\left(\frac{x}{y}\right)+\log xy\right]$

(B) $\frac{n}{2}\left[n\log xy+\log\left(\frac{x}{y}\right)\right]$

(C) $\frac{n}{2}\left[n\log\left(\frac{x}{y}\right)-\log xy\right]$

(D) $\frac{n}{2}\left[n\log\left(\frac{x}{y}\right)+\log xy\right]$

59. The sum of n terms of the series $1 + (1 + 3) + (1 + 3 + 5) + ...$ is **[June 2017]**

(A) $\frac{n(n+1)(2n+1)}{6}$

(B) $\frac{n(n+1)(n+2)}{6}$

(C) $\frac{n(n+1)(2n+1)}{3}$

(D) None of these

60. The sum of first 20 terms of a GP is 1025 times the sum of first 10 terms of same GP then common ratio is: **[June 2017]**

(A) $\sqrt{2}$

(B) 2

(C) $2\sqrt{2}$

(D) $\frac{1}{2}$

61. The value C such that a, –3, b, 5, c are in A.P. is:

(A) –7 **[June 2017]**

(B) 1

(C) 13

(D) 9

62. The sum of all numbers between 100 and 1000 which are divisible by 11 will be:

(A) 44550 **[Dec. 2017]**

(B) 66770

(C) 55440

(D) 33440

63. A person pays Rs. 975 in monthly instalments, each instalment is less than former by Rs. 5. The amount of Ist instalment is Rs. 100. In what time will the entire amount be paid? **[May 2018]**

(A) 26 months

(B) 15 months

(C) Both (A) and (B)

(D) 18 months

64. If the sum of n terms of an AP is $(3n^2 - n)$ and its common difference is 6, then its first term is: **[May 2018]**

(A) 3

(B) 2

(C) 4

(D) 1

65. If the pth term of an A.P. is 'q' and the qth term is 'p', then its rth term is

(A) $p+q-r$ **[Nov. 2018]**

(B) $p+q+r$

(C) $p-q-r$

(D) $p-q$

66. The 3rd term of a G.P. is $\frac{2}{3}$ and the 6th term is $\frac{2}{81}$, then the 1st term is

(A) 6 **[Nov. 2018]**

(B) $\frac{1}{3}$

(C) 9

(D) 2

67. The sum of the series –8, –6, –4, ...n terms is 52. The number of terms n is

(A) 11 **[Nov. 2018]**

(B) 12

(C) 13

(D) 10

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

68. The value of K, for which the terms $7K+3$, $4K-5$, $2K+10$ are in A.P., is **[Nov. 2018]**

(A) 13
(B) –13
(C) 23
(D) –23

69. If the ratio of sum of n terms of two Aps is (n + 1) : (n – 1), then the ratio of their m^{th} terms is: **[June 2019]**

(A) (m + 1) : 2m
(B) (m + 1) : (m – 1)
(C) (2m – 1) : (m + 1)
(D) m : (m – 1)

70. In a G.P. If the fourth term is '3' then the product of first seven terms is

(A) 3^5 **[June 2019]**
(B) 3^7
(C) 3^6
(D) 3^8

71. If $2 + 6 + 10 + 14 + 18 + ...+ x = 882$ then the value of x **[June 2019]**

(A) 78
(B) 80
(C) 82
(D) 86

72. If $y = 1 + x + x^2 + ... \infty$ then $x =$

(A) $\frac{y-1}{y}$ **[June 2019]**
(B) $\frac{y+1}{y}$
(C) $\frac{y}{y+1}$
(D) $\frac{y}{y-1}$

73. If $\frac{(b+c-a)}{a}, \frac{(c+a-b)}{b}, \frac{(a+b-c)}{c}$ are in AP then a, b, c are in: **[Nov. 2019]**

(A) AP
(B) GP
(C) HP
(D) None

74. Sum upto infinity of series. $\frac{1}{2}+\frac{1}{3^2}+\frac{1}{2^3}+\frac{1}{3^4}+\frac{1}{2^5}+.....$ **[Nov. 2019]**

(A) $\frac{19}{24}$
(B) $\frac{24}{19}$
(C) $\frac{5}{24}$
(D) None

75. Sum the series $\frac{1}{5}, \frac{1}{5^2}, \frac{1}{5^3}.....\frac{1}{5^n}$. **[Nov. 2019]**

(A) $\frac{1}{4}\left[1-\left(\frac{1}{5}\right)^n\right]$
(B) $\frac{1}{5}\left[1-\left(\frac{1}{4}\right)^n\right]$
(C) Both
(D) None

76. Find the no. of terms of the series 25, 5, 1 ..... $\frac{1}{3125}$ **[Nov. 2019]**

(A) 6
(B) 7
(C) 8
(D) 9

77. If the sum of five terms of AP is 75. Find the third term of the series **[Nov. 2019]**

(A) 35
(B) 30
(C) 15
(D) 20

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

78. If the AM and GM of two numbers is 6.5 and 6 the no.'s are: **[Nov. 2019]**

(A) 3 and 2
(B) 9 and 4
(C) 81 and 16
(D) None

79. If AM and HM for two numbers are 5 and 3.2, respectively. GM will be:

(A) 20 **[Nov. 2019]**
(B) 16
(C) 4
(D) 5

80. Three numbers in G.P. with their Sum 130 and their product 27,000 are:

(A) 10, 30, 90 **[Nov.2020]**
(B) 90, 30, 10
(C) (A) and (B) both
(D) 10, 20, 30

81. The 20^{th} term of arithmetic progression whose 6^{th} term is 38 and 10^{th} term is 66 is: **[Nov. 2020]**

(A) 118
(B) 136
(C) 178
(D) 210

82. Divide 69 into 3 parts which are in A.P. and are such that the product of first two parts is 460: **[Nov. 2020]**

(A) 20, 23, 26
(B) 21, 23, 25
(C) 19, 23, 27
(D) 22, 23, 24

83. The n^{th} terms of the series $3 + 7 + 13 + 21 + 31 + \ldots\ldots\ldots$ is **[Jan. 2021]**

(A) $4n - 1$
(B) $n^2 + 2n$
(C) $n^2 + n + 1$
(D) $n^3 + 2$

84. In a geometric progression the 3^{rd} and 6^{th} terms are respectively 1 and $-\frac{1}{8}$. The first term (a) and common ratio are respectively. **[Jan. 2021]**

(A) 4 and $\frac{1}{2}$
(B) 4 and $\frac{-1}{4}$
(C) 4 and $\frac{-1}{2}$
(D) 4 and $\frac{1}{4}$

85. The sum of three numbers in a geometric progression is 28. When 7, 2 and 1are subtracted from the first, second and the third numbers respectively, then the resulting numbers are in arithmetic progression. What is the sum of squares of the original three numbers? **[July 2021]**

(A) 510
(B) 456
(C) 400
(D) 336

86. The number of terms of the series: $5 + 7 + 9 + \ldots\ldots\ldots$ must be taken so that the sum may be 480. **[July 2021]**

(A) 20
(B) 10
(C) 15
(D) 25

87. If the sum of 'n' terms of an AP (Arithmetic Progression) is $2n^2$, the fifth term is _____. **[July 2021]**

(A) 20
(B) 50
(C) 18
(D) 25

88. If the sum and product of three numbers in G.P. are 7 and 8 respectively, then 4^{th} term of the series is **[Dec. 2021]**

(A) 6
(B) 4
(C) 8
(D) 16

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

89. The sum of series 7 + 14 + 21 + ... to 17th term is: **[Dec. 2021]**

(A) 1071
(B) 971
(C) 1171
(D) 1271

90. The sum of first n terms an AP is $3n^2+5n$. The series is: **[Dec. 2021]**

(A) 8, 14, 20, 26, ...
(B) 8, 22, 42, 68, ...
(C) 22, 68, 114, ...
(D) 8, 14, 28, 44, ...

91. The largest value of n for which $\frac{1}{2}+\frac{1}{2^2}+.....\frac{1}{2^n}<0.998$ is **[Dec. 2021]**

(A) 9
(B) 6
(C) 7
(D) 8

92. If 9th and 19thterm of an Arithmetic Progression are 35 and 75, respectively, then its 20th term is: **[Jun. 2023]**

(A) 78
(B) 79
(C) 80
(D) 81

93. If 4th, 7th and 10th terms of a Geometric Progression are p, q and r, respectively, then:

(A) $p^2=q^2+r^2$ **[Jun. 2023]**
(B) $p^2=qr$
(C) $q^2=pr$
(D) $pqr+pq+1=0$

94. If Arithmetic Mean and Geometric Mean between two number are 5 and 4 respectively, then these numbers are

(A) 2 & 3 **[Dec. 2022]**
(B) 2 & 8
(C) 4 & 6
(D) 1 & 16

95. In a GP 5th term is 27 and 8th term is 729. Find its 11th term. **[Dec. 2022]**

(A) 729
(B) 6061
(C) 2187
(D) 19683

96. If nth term of an AP series is 7n – 2, then sum of 'n' terms is: **[Dec. 2023]**

(A) $0.5(7n^2+2n)$
(B) $0.5(7n^2-3n)$
(C) $0.5(7n^2+3n)$
(D) $0.5(7n^2-2n)$

97. Find the 17th term of an AP series if 15th and 21st terms are 30.5 and 39.5 respectively. **[Dec. 2023]**

(A) 33.5
(B) 35.5
(C) 36.0
(D) 38.0

98. Given an infinite geometric series with first term 'a' and common ratio 'r'. If its sum is 4 and the second term is $\frac{3}{4}$, then one of correct option is **[Dec. 2023]**

(A) $a=1$ and $r=\frac{1}{4}$
(B) $a=3$ and $r=\frac{3}{4}$
(C) $a=3$ and $r=\frac{1}{4}$
(D) $a=1$ and $r=\frac{1}{2}$

99. Find the value of 'x' for the following data.

$1+7+13+19$ ..... $+x=225$

(A) 56 **[Dec. 2023]**
(B) 63
(C) 49
(D) 42

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

100. If pth term of an AP is q and its qth term is p, then what will be the value of (p+q)th term?

(A) 0
(B) 1
(C) p +q –1
(D) 2 (p+q –1) **[Dec. 2022]**

101. How many numbers between 74 and 25,556 are divisible by 5?

(A) 5090
(B) 5097
(C) 5095
(D) 5075 **[Jun. 2023]**

102. In an arithmetic progression, the seventh term is x and (x + 7) term is zero. Then x term is

(A) 6 **[June 2024]**
(B) 7
(C) 8
(D) 10

103. If the second and eight terms of an arithmetic progression (AP) are equal to constant a. then the sum of first n terms of this AP is equal to

(A) na **[June 2024]**
(B) $\frac{a}{n}$
(C) 2n + n(a – 1)
(D) n + a(n – 1)

104. The 3rd term of arithmetic progression is 7 and Seventh term is 2 more than thrice of third term. The common difference is

(A) 4 **[June 2024]**
(B) 3
(C) 5
(D) 6

105. If fourth term of A.P. series is zero, then what is the ratio of twenty-fifth term to eleventh term ?

(A) 5 **[Sept. 2024]**
(B) 4
(C) 3
(D) 2

106. If for an infinite geometric progression, first term is 'a', common ratio is 'r', the sum is 8 and the second term is 7/8 , then:

(A) a=3 & r 7/24 **[Sept. 2024]**
(B) a=4 & r 7/16
(C) a=7 & r 1/8
(D) a=2 & r 7/32

107. The numbers x,8,y are in G.P. and the numbers x,y,-8 are in A.P. The values of x and y respectively shall be:

(A) 16,4 **[Sept. 2024]**
(B) 4,16
(C) 4,8
(D) 8,4

108. The sum of the 4thand 8thterm of an AP is 10. Then the sum of first eleven terms of the series is **[Jan. 2025]**

(A) 33
(B) 22
(C) 44
(D) 55

109. Find the 9thterm of the A.P. 8, 5, 2, –1, –4, ... **[Jan. 2025]**

(A) –10
(B) –24
(C) –16
(D) –4

110. The sum of series 1+2+3+ ..... is 55. The number of terms is: **[Jan. 2025]**

(A) 40
(B) 30
(C) 20
(D) 10

111. The product of three numbers which are in GP is 512. Then the secondnumber is

(A) 2 **[Jan. 2025]**
(B) 3
(C) 6
(D) 8

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	B	2.	A	3.	D	4.	C	5.	A
6.	C	7.	B	8.	B	9.	C	10.	B
11.	D	12.	B	13.	B	14.	B	15.	B
16.	C	17.	C	18.	C	19.	A	20.	B
21.	B	22.	C	23.	D	24.	C	25.	A
26.	C	27.	D	28.	C	29.	C	30.	D
31.	A	32.	B	33.	A	34.	D	35.	C
36.	A	37.	C	38.	B	39.	B	40.	B
41.	C	42.	B	43.	C	44.	D	45.	C
46.	B	47.	A	48.	B	49.	A	50.	D
51.	C	52.	C	53.	B	54.	A	55.	D
56.	B	57.	B	58.	D	59.	A	60.	B
61.	D	62.	A	63.	B	64.	B	65.	A
66.	A	67.	C	68.	D	69.	D	70.	B
71.	C	72.	A	73.	C	74.	A	75.	A
76.	C	77.	C	78.	B	79.	C	80.	C
81.	B	82.	A	83.	C	84.	C	85.	D
86.	A	87.	C	88.	D	89.	A	90.	A
91.	D	92	B	93	C	94	B	95	D
96	C	97	A	98	C	99	C	100	A
101	B	102	B	103	A	104	A	105	C
106	C	107	A	108	D	109	C	110	D
111	D								

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Space for Notes

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CHAPTER – 7
SET, FUNCTIONS & RELATIONS

1. $x^2 + y^2 = 1$ is which type of relation?

(A) Symmetric

(B) Asymmetric

(C) Linear

(D) None of these

2. $F(x) = 2x^3 + 4$, find $f^{-1}(6)$

(A) $\frac{1}{2}$

(B) 1

(C) -1

(D) $\frac{-1}{2}$

3. Reversible function is

(A) Infective

(B) Subjective

(C) Bijective

(D) One-one

4. $F(x) = x^2 + 7$, find $f[f(x)] = ?$

(A) $x^4 + 7x^2 + 50$

(B) $x^4 + 14x^2 + 50$

(C) $x^4 + 7x^2 + 56$

(D) $x^4 + 14x^2 + 56$

5. $F(x) = 2x, g(x) = x^2 + 2$ find fog (2) =?

(A) 9

(B) 10

(C) 12

(D) 15

6. $F(x) = x^2, g(x) = x^2 + 5$ find fog

(A) $x^4 + 10x^2 + 25$

(B) $x^4 + 10x^2 + 20$

(C) $x^4 + x^2 + 25$

(D) $x^4 + 4x^2 + 24$

7. If x∈N; N = Natural Numbers & $x^2 = 1$ then no. of element in set x is

(A) One

(B) Two

(C) Four

(D) None of these

8. $G(x) = \frac{1}{1-x}; f(x) = \frac{(x-1)}{x}$ find fog =?

(A) $\frac{1}{x}$ **[June 2017]**

(B) x

(C) $\frac{1}{x-1}$

(D) 1-x

9. Out of the following the Expression to denote only one is

(A) A'∪B'

(B) A-B

(C) (A-B) ∩ (B-A)

(D) (A-B) ∪ (B-A)

10. If $f(x) = 2x + 1$, $g(x) = x^2 - 2$ then gof (3)is

(A) 5

(B) 15

(C) 47

(D) None of these

11. $y = \frac{(2-x)}{2+x}$ find $f^{-1}(x)$

(A) $\frac{1-x}{1+x}$

(B) $\frac{2(1-x)}{1+x}$

(C) $\frac{1+x}{1+x}$

(D) $\frac{2(1+x)}{1-x}$

12. A = {a, b, c}, B = {p, q, r}, C = {q, r, t} BUC – A =?

(A) {p, q, r}

(B) {a, b, c}

(C) {a, b, p, q}

(D) {p, q, r, t}

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

13. If $x = 1, 2, 3$ $Y = 4, 5, 6$ on $a \rightarrow b$ mapping $f(1) = 4, f(2) = 5, f(3) = 6$ find $f^{-1}(x)$

(A) x+3

(B) 3-x

(C) x-3

(D) $\frac{x+3}{2}$

14. $x^2 + x - 1 = f(x), 4f(x) = f(2x)$ find x

(A) $\frac{2}{3}$

(B) $\frac{3}{2}$

(C) $\frac{-4}{3}$

(D) $\frac{-3}{2}$

15. If there are total 40 people, out of which 25 know oracle, 28 know java & 7 know none Languages then how many people know both the languages.

(A) 18

(B) 22

(C) 20

(D) 15

16. What is $[(A \cup B) - B] \cap C$

(A) A∩C

(B) (A-B)∩C

(C) (A-C)∩B

(D) A-B

17. Domain of function $y = \sqrt{x - a}$ is

(A) $[a, \infty)$

(B) (a, ∞)

(C) (-∞, a)

(D) (-∞, a]

18. $F(x) = 2x + 3$ then $f(2x) - 2f(x) + 3$ is **[Dec. 2009]**

(A) 1

(B) 0

(C) 2

(D) 3

19. If A = {1, 2, 3, 4, 5}, B = {x, y, z, k} then C = {(x,1), (y, 2), (y, 3), (z, x)} is

(A) A function

(B) A relation

(C) Not a function

(D) None of these

20. $A = \{x, x^2 - 3x + 2 = 0\}$,

$B = \{x, x^2 + 4x - 12 = 0\}$

what is $B - A$ =? **[June 2010]**

(A) {-6, 2}

(B) {2}

(C) {-6}

(D) { }

21. If the relation is defined as A→R as $f(x) = 1/x$ the value of A will be **[June 2010]**

(A) All real number

(B) All integers

(C) All real number except 0

(D) All integers except 0

22. $F(x) = x + 1, g(x) = x^2 + 1$, fog (-2) = ?

(A) 4

(B) 6

(C) 8

(D) 10

23. If $f(x - 1) = x^2 - 4x + 8$ find $f(x + 1)$ =?

(A) x^2

(B) $x^2 - 4$

(C) $x^2 + 4$

(D) $x^2 + 1$

24. There are 40 students, 30 of them passed in English, 25 of them passed in Maths and 15 of them passed in both. Assuming that every student has passed at least in one subject. How many student passed in English only but no in Maths? **[June 2011]**

(A) 15

(B) 10

(C) 12

(D) 14

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

25. If $A = (\pm 2, \pm 3) B = (4,9) and$ F = {(2, 4), (−2, 4), (3, 9), (−3, 9)} then F is defined as: **[June 2011]**

(A) One-one function
(B) onto function
(C) Into function
(D) None of these

26. $F(x) = \frac{x}{\sqrt{1+x^2}}$ and $G(x) = \frac{x}{\sqrt{1-x^2}}$ find fog? **[June 2011]**

(A) x^2
(B) $\frac{1}{x^2}$
(C) $\frac{1}{x}$
(D) x

27. $F(x) = 3 + x, for - 3 < x < 0 \; and$ $3 - 2x for\ 0 < x < 3,$ then the value of f(2) will be **[Dec. 2011]**

(A) 5
(B) -1
(C) Either (A) or (B)
(D) Neither (A) nor (B)

28. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then (A-C)×B is **[Dec. 2011]**

(A) {(2, 2) (2, 4) (4, 2) (4, 4)}
(B) {(2, 3) (3, 2) (2, 4) (4, 2)}
(C) {(2, 2) (4, 2) (4, 4)}
(D) {(2, 2) (2, 4) (4, 2)}

29. A town has a total population of 50,000. Out of it 28,000 read the newspaper 'X' and 23,000 read newspaper 'Y', while 4,000 read both the newspapers. The number of persons not reading any of the two newspapers are: **[Sept. 2024]**

(A) 2,000
(A) 3,000
(B) 2,500
(C) 5,000

30. The number of proper sub set of the set {3, 4, 5, 6, 7} is **[June 2012]**

(A) 32
(B) 31
(C) 30
(D) 15

31. On the set of lines in a plane the relation "is perpendicular to" is **[June 2012]**

(A) Reflexive
(B) Symmetric
(C) Transitive
(D) Equivalence

32. The range of the function f: N→N defined by $f(x) = (-1)^{x-1}$ is **[June 2012]**

(A) { 1 }
(B) { 0 }
(C) { 0, 1}
(D) {-1, 1}

33. The minimum value of the function $f(x) = x^2 - 6x + 10$ is **[June 2012]**

(A) 0
(B) -1
(C) 1
(D) 2

34. In a group of 200 people. 100 are interested in music, 70 in photography and 40 in swimming. 40 are interested in both music and photography, 30 in music and swimming, 20 in photography and swimming and 10 in all the three. How many are interested in photography but not in music or swimming? **[Dec. 2012]**

(A) 18
(B) 20
(C) 22
(D) 25

35. If f : R→R is a function defined by f(x) = 10x − 7 and $g(x) = f^{-1}(x)$ then g(x) is equal to **[Dec. 2012]**

(A) 10(x−7)
(B) $\frac{x+7}{10}$
(C) $\frac{X+10}{7}$
(D) 7(x+10)

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

36. The number of elements in range of constant function is **[Dec. 2012]**

(A) Zero
(B) Two
(C) One
(D) Infinite

37. If $f(x) = x + 2, g(x) = 7^x$ then gof (x) =

(A) $7^x + 2$ **[June 2013]**
(B) 7 (x+2)
(C) 7^{x+2}
(D) None of these

38. If A = {1, 2, 3} then the relation R = {(1, 1), (2, 3), (2, 2), (3, 3), (1,2)} on A is:

(A) Reflexive **[June 2013]**
(B) Symmetric
(C) Transitive
(D) Equivalence

39. Of the 200 candidates who were interviewed for a position at call center, 100 had a two wheeler, 70 had a credit card and 140 had a mobile phone. 40 of them had both a two wheeler and a credit card, 30 had both a credit card and mobile phone, 60 had both a two wheeler and a mobile phone and 10 had all the three. How many candidates had none of them? **[Dec. 2013]**

(A) 20
(B) 10
(C) 30
(D) 0

40. $F(x) = (a - x^n)^{\frac{1}{n}}, a > 0$ and n is positive integer then $f[f(x)] =$ **[Dec. 2013]**

(A) a^n
(B) x^n
(C) a
(D) x

41. In a class of 50 students, 35 opted for maths, 37 opted for commerce. The number of such students who opted for both maths and commerce is **[June 2014]**

(A) 12
(B) 2
(C) 22
(D) 15

42. The range of a relation {(1, 0), (2, 0), (3, 0), (4, 0), (0, 0)} is

(A) {0, 1, 2, 3} **[June 2014]**
(B) { 0 }
(C) {1, 2, 3, 4}
(D) {0, 1, 2}

43. There were 200 employees in an office in which 150 were married. Total male employees were 160 out of which 120 were married. What was the number of female unmarried employees?

(A) 20 **[June 2014]**
(B) 10
(C) 5
(D) None of these

44. A = {2, 3}, B = {4, 5}, C = {5, 6} then A×(B∩C) **[Dec. 2014]**

(A) {(2, 5) (3, 5)}
(B) {(3, 4) (4, 5)}
(C) {(2, 4) (4, 5)}
(D) {(3, 4) (5, 6)}

45. $F(x) = \frac{x}{x-1}$, then $\frac{f\left(\frac{x}{y}\right)}{f\left(\frac{y}{x}\right)}$ **[Dec. 2014]**

(A) $\frac{-y}{x}$
(B) $\frac{-x}{y}$
(C) $\frac{y}{x}$
(D) $\frac{x}{y}$

46. If N is the set of all natural numbers, E is the set of all even natural numbers and f: N→E defined By $f(x) = 2x, x \in N$ then f is **[Dec. 2014, June 2015 & May 2018]**

(A) One – one
(B) Onto
(C) One-one, onto
(D) Into

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

47. If a set contain n elements, then the total number of proper subsets of set is: **[Sept. 2024]**

(A) 2^n

(B) 2^n-1

(C) 2^{n-1}

(D) 2^n-2

48. Which of these is a function from A→B A = {x, y, z}, B = {a, b, c, d} : **[Dec. 2015]**

(A) {(x, a), (x, b), (y, c)}

(B) {(x, a), (y, b), (z, d)}

(C) {(x, a), (x, b), (y, c), (z, d)}

(D) {(a, x), (b, z), (c, y)}

49. $F(x) = 2x + 2, g(x) = x^2$, fog (4) =? **[Dec. 2015]**

(A) 24

(B) 30

(C) 34

(D) 40

50. In a class of 80 students, 35% play only cricket, 45% only Tennis, How many play Cricket? **[Dec. 2015]**

(A) 55

(B) 44

(C) 33

(D) 30

51. If set $A = \{\frac{x}{2} x \in z, 0 \le z \le 10\}$

B = {x : x as one digit prime number}

and$C = \left\{x: \frac{x}{2} \in z, 0 \le x \le 12\right\}$ then $A \cap (B \cap C)$ **[June 2016]**

(A) {0, 2}

(B) { 2 }

(C) { 0 }

(D) { }

52. The domain (D) and range (r) of the function $f(x) = 2 - |x - 1| is$

(A) Real Nos., Real Nos. **[June 2016]**

(B) Real Nos., (2, ∞)

(C) Real Nos., (-∞, 2)

(D) None of these

53. If $F(x) = 100\ x then f^{-1}(x) =$

(A) $\frac{100}{x}$ **[Dec. 2016]**

(B) 100x

(C) x^{100}

(D) 100^x

54. F : R→R is defined by $f(x) = 2^x then fis$

(A) One-one **[Dec. 2016]**

(B) Many-one

(C) Many-many

(D) One-many

55. The number of subsets formed from the letters of the word "ALLAHABAD".

(A) 2^9 **[Dec. 2016]**

(B) 2^5

(C) 2^6

(D) $2^9 - 1$

56. X = {x, y, w, z}, y = {1,2,3,4}

H = {(x, 1), (y, 2), (y, 3), (z, 4), (x, 4)} **[Dec. 2009]**

(A) H is a function from X to Y

(B) H is not a function from X to Y

(C) H is a relation from Y to X

(D) None of the above

57. If $f(x)=2x+h$ then find $f(x+h)-2f(x)$

(A) $h-2x$ **[Dec. 2009]**

(B) $2x-h$

(C) $2x+h$

(D) None of these

58. In the set N of all natural numbers the relation R defined by a R b "if and only if, a divide b", then the relation R is: **[Dec. 2009]**

(A) Partial order relation

(B) Equivalence relation

(C) Symmetric relation

(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

59. For any two sets A and B, $A \cap (A' \cup B) =$ _____, where A' represent the compliment of the set A **[Dec. 2010]**

(A) $A \cap B$

(B) $A \cup B$

(C) $A' \cup B$

(D) None of these

60. If $f: R \to R, f(x) = x + 1$,

$g: R \to R\ g(x) = x^2 + 1$

then $fog(-2)$ equals to **[Dec. 2010]**

(A) 6

(B) 5

(C) –2

(D) None

61. If $A \subset B$, then which one of the following is true **[Dec. 2010]**

(A) $A \cap B = B$

(B) $A \cup B = B$

(C) $A \cap B = A'$

(D) $A \cap B = \varphi$

62. If $f(x-1) = x^2 - 4x + 8$, then $f(x+1) =$ _____ **[Dec. 2010]**

(A) $x^2 + 8$

(B) $x^2 + 7$

(C) $x^2 + 4$

(D) $x^2 - 4x$

63. If $f(x) = \log\left(\frac{1+x}{1-x}\right)$, then $f\left(\frac{2x}{1+x^2}\right)$ is equal to: **[June 2013]**

(A) $f(x)$

(B) $2f(x)$

(C) $3f(x)$

(D) $-f(x)$

64. If $f(x) = \frac{x^2 - 25}{x - 5}$, then f(5) is **[Dec. 2013]**

(A) 0

(B) 1

(C) 10

(D) Not defined

65. Let A = {1,2,3} and B = {6,4,7}. Then, the relation R = {(2,4), (3,6)} will be:

(A) Function from A to B **[June 2014]**

(B) Function from B to A

(C) Both A and B

(D) Not a function

66. If S = {1, 2, 3} then the relation {(1, 1), (2, 2), (1, 2), (2, 1)} is symmetric and **[Dec.2014]**

(A) Reflexive but not transitive

(B) Reflexive as well as transitive

(C) Transitive but not reflexive

(D) Neither transitive nor reflexive

67. Let A be the set of squares of natural numbers and let $x \in A$, $y \in A$ then

(A) $X + Y \in A$ **[June 2016]**

(B) $X - Y \in A$

(C) $\frac{x}{Y} \in A$

(D) $xy \in A$

68. If $f(x) = x^2 + x - 1$ and $4f(x) = f(2x)$, then find the value of "x". **[Sept. 2024]**

(A) 3/2

(B) 2/3

(C) 3/4

(D) 4/3

69. In a group of students 80 can speak Hindi, 60 can speak English and 40 can speak English and Hindi both, then number of students is: **[June 2017]**

(A) 100

(B) 140

(C) 180

(D) 60

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

70. If $f(x)=\frac{x+1}{x+2}$, then $f\left\{f\left(\frac{1}{x}\right)\right\}=$ _____.

(A) $\frac{2x+3}{3x+5}$ **[Dec. 2017]**

(B) $\frac{2x+5}{3x+2}$

(C) $\frac{3x+2}{5x+3}$

(D) $\frac{5x+2}{2x+3}$

71. In a town of 20,000 families it was found that 40% families buy newspaper. A, 20% families buy newspaper B and 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C if 2% families buy all the three newspapers, then the number of families which buy A only is:

(A) 6600 **[May 2018]**

(B) 6300

(C) 5600

(D) 600

72. The numbers of proper sub set of the set {3, 4, 5, 6, 7} is: **[May 2018]**

(A) 32

(B) 31

(C) 30

(D) 25

73. A is {1,2,3,4} and B is {1,4,9,16,25} if a function f is defined from set A to B where $f(x)=x^2$ then the range of f is:

(A) {1,2,3,4} **[Nov. 2018]**

(B) {1,4,9,16}

(C) {1,4,9,16,25}

(D) None of these

74. If A = {1,2,3,4,5,6,7} and B = {2,4,6,8}. Cardinal number of A – B is: **[Nov. 2018]**

(A) 4

(B) 3

(C) 9

(D) 7

75. If A = {1, 2, 3, 4, 5, 6, 7, 8, 9}
B = {1, 3, 4, 5, 7, 8};
C = {2, 6, 8} then find $(A-B)\cup C$

(A) {2, 6} **[June 2019]**

(B) {2, 6, 8}

(C) {2, 6, 8, 9}

(D) None

76. A = {1 2 3 4 ..... 10} a relation on A, R = {(x, y)/x + y = 10, $x\in A, Y\in A, x\geq Y$} then domain of R^{-1} is **[June 2019]**

(A) {1, 2, 3, 4, 5}

(B) {0, 3, 5, 7, 9}

(C) {1, 2, 4, 5, 6, 7}

(D) None

77. The no. of subsets of the set {3, 4, 5} is:

(A) 4 **[June 2019]**

(B) 8

(C) 16

(D) 32

78. If $f(x)=x^2$ and $g(x)=\sqrt{x}$ then

(A) go f(3) = 3 **[June 2019]**

(B) go f(–3) = 9

(C) go f(9) = 3

(D) go f(–9) = 3

79. If A = {a, b, c, d}; B = {p, q, r, s} which of the following relation is a function from A to B **[June 2019]**

(A) $R_1=\{(a,p),(b,q),(c,s)\}$

(B) $R_2=\{(p,a),(b,r),(d,s)\}$

(C) $R_3=\{(b,p),(c,s),(b,r)\}$

(D) $R_4=\{(a,p),(b,r),(c,q),(d,s)\}$

80. $(A')'=?$ **[Nov. 2019]**

(A) A

(B) A'

(C) ϕ

(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

81. $f(n) = f(n-1) + f(n-2)$ when $n = 2, 3, 4$ .....$f(0) = 0, f(1) = 1$ then $f(7) =$? **[Nov. 2019]**

(A) 3
(B) 5
(C) 8
(D) 13

82. $f(x) = \frac{x+1}{x}$ find $f^{-1}(x)$ **[Nov. 2019]**

(A) $\frac{1}{(x-1)}$
(B) $\frac{1}{(y-1)}$
(C) $\frac{1}{y} - 1$
(D) X

83. Two finite sets respectively have x and y number of elements. The total number of subsets of the first is 56 more than the total number of subsets of the second. The value of x and y respectively. **[Nov.2020]**

(A) 6 and 3
(B) 4 and 2
(C) 2 and 4
(D) 3 and 6

84. The number of items in the set A is 40; in the set B is 32; in the set C is 50; in both A and B is 4, in both A and C is 5; in both B and C is 7 in all the sets 2. How many are in only one set? **[Nov. 2020]**

(A) 110
(B) 65
(C) 108
(D) 84

85. The set of cubes of the natural number is: **[Nov. 2020]**

(A) A null set
(B) A finite set
(C) An infinite set
(D) A finite set of three numbers

86. The inverse function f^{-1} of $f(y) = 3y$ is: **[Nov. 2020]**

(A) $\frac{1}{3y}$
(B) $\frac{y}{3}$
(C) $-3y$
(D) $\frac{1}{y}$

87. The set of cubes of natural number is **[Jan. 2021]**

(A) Null set
(B) A finite set
(C) An infinite set
(D) Singleton Set

88. In the set of all straight lines on a plane which of the following is Not 'TRUE'? **[Jan. 2021]**

(A) Parallel to an equivalence relation
(B) Perpendicular to is a symmetric relation
(C) Perpendicular to is an equi relation
(D) Parallel to a reflexive relation

89. Let F : R R be defined by

$$f(x) = \begin{cases} 2x & \text{for} \quad x > 3 \\ x^2 & \text{for} \quad 1 < x \le 3 \\ 3x & \text{for} \quad x \le 1 \end{cases}$$

The value of $f(-1) + f(2) + f(4)$ is **[Jan.2021]**

(A) 9
(B) 14
(C) 5
(D) 6

90. The number of integers from 1to 100 which are neither divisible by 3 nor by 5 nor by 7 is **[Jan. 2021]**

(A) 67
(B) 55
(C) 45
(D) 33

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

91. The range of the function F defined by $f(x)=\sqrt{16-x^2}$ is **[July 2021]**

(A) $[-4,0]$

(B) $[-4,4]$

(C) [0, 4]

(D) [+4, 4]

92. Let $A=R-(3)$ and $B=R-(1)$. Let $f(x)\to B$ defined by $f(x)=\frac{x-2}{x-3}$. What is the value of $f^{-1}\left(\frac{1}{2}\right)$? **[July 2021]**

(A) $\frac{2}{3}$

(B) $\frac{3}{4}$

(C) 1

(D) -1

93. If $f(x)=x^2-1$ and $g(x)=|2x+3|$, then fog (3) – g of (–3) = ? **[July 2021]**

(A) 71

(B) 61

(C) 41

(D) 51

94. Let U be the universal set, A and B are the subsets of U. If n(U) = 650, n(A) = 310 $n(A\cap B)=95$ and n(B) = 190, then $n(\overline{A}\cap\overline{B})$ is equal to ($\overline{A}$ and $\overline{B}$ are the complement of A and B respectively): **[July 2021]**

(A) 400

(B) 200

(C) 300

(D) 245

95. Out of a group of 20 teachers in a School, 10 teach Mathematics, 9 teach Physics and 7 teach Chemistry. 4 teach Mathematics and Physics but none teach both Mathematics and Chemistry. How many teach Chemistry and Physics; how many teach only Physics? **[Dec. 2021]**

(A) 2, 3

(B) 3, 2

(C) 4, 6

(D) 6, 4

96. If a is related to b if and only if the difference in a and b is an even integer. This relation is **[Dec. 2021]**

(A) symmetric, reflexive but not transitive

(B) symmetric, transitive but not reflexive

(C) transitive, reflexive but not symmetric

(D) equivalence relation

97. If $u(x)=\frac{1}{1-x}$, then $u^{-1}(x)$ is:

(A) $\frac{1}{x-1}$ **[Dec.2021]**

(B) 1 – x

(C) $1-\frac{1}{x}$

(D) $\frac{1}{x}-1$

98. If A = {1,2,3,4,5,7,8,9} and B = {2,4,6,7,9} then how many proper subset of $A\cap B$ can be created **[Dec.2022]**

(A) 16

(B) 15

(C) 32

(D) 31

99. The number of a subset of the set {0, 1, 2, 3} is **[Dec.2022]**

(A) 2

(B) 4

(C) 8

(D) 16

100. Let A = (1,2,3) and consider the relation R = {(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)}. Then R is **[Dec.2022]**

(A) Symmetric and transitive

(B) Reflexive but not transitive

(C) Reflexive but not symmetric

(D) Neither symmetric, nor transitive

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

101. Given the relation R = {(1, 2), (2, 3)} on the set A = {1, 2, 3}, the minimum number of ordered pairs which when added to R make it equivalence relation is **[Jun.2023]**

(A) 5
(B) 7
(C) 6
(D) 8

102. A survey shows that 74% of the Canadian like grapes, whereas 68% like bananas. What percentage of the Canadians like both grapes and bananas, if everybody likes either of two? **[Jun.2023]**

(A) 32%
(B) 26%
(C) 6%
(D) 42%

103. If Rbe a relation defined on the set of Natural numbers" $xRy \Leftrightarrow (x-y)$ is divisible by 5" $\forall x, y \in N$, then the relation R is: **[Jun.2023]**

(A) Equivalence
(B) Anti-symmetric
(C) Symmetric but not transitive
(D) Symmetric but not reflexive

104. If A = {a, b, c), B = {(b, c, *d*} and C= {a, *d*,c}, then (A-B) × (B ∩ C) is equal to:**[Jun.2023]**

(A) {(a, *d*), (c, *d*)}
(B) {(a, c), (a, *d*)}
(C) {(c, a), (*d*, a)}
(D) {(a, c), (a, *d*), (b, *d*)}

105. If $f(x): N \to R$ is a function defined as $f(x) = 4x + 3, \forall x \in N$, then $f^{-1}(x)$ is: **[Jun.2023]**

(A) $4 + \frac{x+3}{4}$
(B) $\frac{x+3}{4}$
(C) $\frac{x-3}{4}$
(D) $\frac{3x+4}{4}$

106. In a survey of 100 boys it was found that 50 used white shirts, 40 red shirts and 30 blue shirts. 20 were habituated in using both white and red shirts. 15 were using both red and blue shirts and 10 were using blue and white shirts. Find the number of boys who are using all colours **[Dec.2023]**

(A) 20
(B) 25
(C) 30
(D) 35

107. If A = {2, 4} and B = {1, 2, 3}, then $(A \cup B) \times (A \cap B)$ is equal to:**[Dec.2023]**

(A) {(1, 2), (2, 2), (3, 2)}
(B) {(1, 2), (2, 2), (2, 3), (2, 4)}
(C) {(2, 1), (2, 2), (2, 4)}
(D) {(1, 2), (2, 2), (3, 2), (4, 2)}

108. If B = {1, 2, 3, 4, 5}, then the number of proper subsets of B is **[Dec.2023]**

(A) 120
(B) 30
(C) 31
(D) 32

109. If A = {1, 2}, B = {3, 4}, C = {5, 6} then the value of $A \times (B \cup C)$ **[Dec.2023]**

(A) {(1,2), (3,4), (5,6)}
(B) {(1,3), (2,3), (1,4), (2,4), (2,5), (1,5), (1,6), (2,6)}
(C) {(1,3), (2,3), (1,4), (2,4), (2,5), (1,5)}
(D) {(3,1), (2,3), (4,1), (2,4), (2,5), (1,5), (1,6), (2,6)}

110. Consider the following relations on A = {1, 2, 3}, R = {(1, 1), (1, 2), (1, 3), (3, 3)} S = {(1, 1), (1, 2), (2, 1), (2, 2), (3, 3)}, T = {(1, 1), (1, 2), (2, 2), (2, 3)} and ϕ = empty set which one of these forms an equivalence relation? **[June 2024]**

(A) R
(B) S
(C) T
(D) ∅

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

111. Let A {1, 2, 3} and consider the relation R = {(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)}, then R is **[Sept. 2024]**

(A) Reflexive but not transitive

(B) Reflexive but not symmetric

(C) Symmetric and Transitive

(D) Neither symmetric nor transitive

112. Let A = {a, b, c, d, e} then the number of proper subsets is **[Jan. 2025]**

(A) 31

(B) 32

(C) 30

(D) 29

113. Evaluate: $\lim_{x\to 3}\frac{x^2+4x+3}{x^2+6x+9}$ **[Jan. 2025]**

(A) $\frac{2}{3}$

(B) $\frac{2}{8}$

(C) 2

(D) $\frac{1}{3}$

114. A = {a, b, p}, B = {2, 3}, C = {p, q, r, s} then n[(A ∪ C) × B] is: **[Jan. 2025]**

(A) 8

(B) 20

(C) 12

(D) 16

.

SPACE FOR NOTES

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	A	2.	B	3.	C	4.	D	5.	C
6.	A	7.	A	8.	B	9.	D	10.	C
11.	B	12.	D	13.	C	14.	B	15.	C
16.	B	17.	A	18.	B	19.	C	20.	C
21.	C	22.	B	23.	C	24.	A	25.	B
26.	D	27.	B	28.	A	29.	B	30.	B
31.	B	32.	D	33.	C	34.	B	35.	B
36.	C	37.	C	38.	A	39.	B	40.	D
41.	C	42.	B	43.	B	44.	A	45.	B
46.	C	47.	B	48.	B	49.	C	50.	B
51.	B	52.	C	53.	A	54.	A	55.	B
56.	B	57.	A	58.	A	59.	A	60.	A
61.	B	62.	C	63.	B	64.	D	65.	D
66.	B	67.	D	68.	A	69.	A	70.	C
71.	A	72.	B	73.	B	74.	A	75.	C
76.	A	77.	B	78.	A	79.	D	80.	A
81.	D	82.	A	83.	A	84.	C	85.	C
86.	B	87.	C	88.	C	89.	A	90.	C
91.	B	92.	C	93.	B	94.	D	95.	A
96.	D	97.	C	98	B	99	D	100	A
101	B	102	D	103	A	104	B	105	C
106	B	107	D	108	C	109	B	110.	B
111.	B	112	A	113	A	114	C		

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 8
STATISTICAL DESCRIPTION OF DATA

1. Diagram for monthly household expenses on various items can be represented as

(A) Bar graph
(B) Line graph
(C) Pie-chart
(D) Rectangular ban graph

2. Income of person Mr. A 10,000, Mr. B 8,000, Mr. C 11,000, Mr. D 5,000, Mr. E 75,00 is which series

(A) Individual
(B) Discrete
(C) Inclusive
(D) Exclusive

3. Which of the following is a statistical data?

(A) Ram is 50 years old
(B) Height of Ram is 5'6" and of Shyam and Hari 5'3" and 5'4" respectively.
(C) Height of Ram is 5'6" and weight is 90 kg
(D) Sale of A was more than B and C

4. The mid value of Class are known as

(A) Class length **[June 2009]**
(B) Class interval
(C) Class marks
(D) Class size

5. If we plot two points "less than" and "more than" on frequency distribution then graph will be **[Dec. 2009]**

(A) Histogram
(B) Pie-chart
(C) Frequency Curve
(D) Ogine

6. Histogram helpful in finding **[Dec. 2009]**

(A) AM
(B) GM
(C) Mode
(D) Median

7. Ogive is useful in calculating **[June 2010]**

(A) Quartile
(B) Median
(C) Both (A) & (B)
(D) None of these

8. For a classification to be adequate

(i) Classes should be of equal width
(ii) Classes should be exhaustive
(iii) Classes should be unambiguously defined

(A) Only (ii)
(B) Both (i) & (ii)
(C) Both (ii) & (iii)
(D) All of three

9. Data collected from internet is

(A) Primary Data **[Dec. 2010]**
(B) Secondary Data
(C) Statistical Data
(D) Time Series

10. The point where the two ogines intersect is called **[June 2011]**

(A) 1st Quartile
(B) 2nd Quartile
(C) 3rd Quartile
(D) 4th Quartile

11. Frequency Density can be termed as:

[June 2011 & 17, Dec. 2017]

(A) $\frac{\text{Freq.of class}}{\text{Class Marks}}$
(B) $\frac{\text{Freq.of class}}{\text{Class width}}$
(C) $\frac{\text{Freq.of class}}{\text{Total freq.}}$
(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. The Chronological classification of data are classified on the basis of: **[June 2011]**

(A) Size
(B) Importance
(C) Time
(D) Height

13. Arrange the following dimension wise: Pie-diagram, Bar-diagram and Cubic diagram. **[Dec. 2009 & June 2011]**

(A) PD, BD, CD
(B) BD, PD, CD
(C) PD, CD, BD
(D) CD, PD, BD

14. The frequency of class 20-30 in the following data is **[Dec. 2011]**

Class	0-10	10-20	20-30	30-40	40-50
Cumulative Frequency	5	13	28	34	38

(A) 28
(B) 13
(C) 6
(D) 15

15. Cost of sugar in a month under the heads Raw Materials, labour, direct production and others were 12, 20, 35 and 23 units respectively. What is the difference between the central angle for the larges and the smallest components of the cost of sugar? **[June 2012]**

(A) 85°
(B) 90°
(C) 92°
(D) 100°

16. Data given below refers to marks gained by a group of students **[June 2012]**

Class	Below 10	Below 20	Below 30	Below 40	Below 50
C.F.	15	38	65	84	100

Find the number of students getting more than 30 marks.

(A) 65
(B) 184
(C) 35
(D) 84

17. For a data on frequency distribution of weights 70, 73, 49, 57, 56, 44, 56, 71, 65, 62, 60, 50, 55, 49, 63 and 45 if we assume class length as 5, the number of class intervals will be **[Dec. 2012]**

(A) 5
(B) 6
(C) 7
(D) 8

18. An exclusive series is? **[Dec. 2012]**

(A) In which lower limit is not included
(B) In which upper limit is not included
(C) In which both upper and limits are included
(D) In which both upper and lower limits are not included

19. A pie diagram used to represent the following data **[June 2013]**

Source	Customers	Excise	Income Tax	Wealth Tax
Revenue in Millions	120	180	240	180

The central angles corresponding to income tax and wealth tax.

(A) (120°, 90°)
(B) (100°, 90°)
(C) (120°, 100°)
(D) None of these

20. The difference between upper limit and lower limit of a class is called:

(A) Class width **[Dec. 2013]**
(B) Class size
(C) Class length
(D) All of the above

21. If the class intervals are 10-14, 15-19, 20-24, _____. Then the first class

(A) 10-14 **[Dec. 2013]**
(B) 9.5-14.5
(C) 9-15
(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

22. The following data related to the marks of groups of students **[June 2014]**

Marks	No. of students
More than 70%	7
More than 60%	18
More than 50%	40
More than 40%	60
More than 30%	75
More than 20%	100

How many students have got marks less than 50%.

(A) 40
(B) 25
(C) 60
(D) 50

23. To draw Histogram the frequency distribution should be **[June 2014]**

(A) Inclusive type
(B) Exclusive type
(C) Inclusive and Exclusive type
(D) None of the above

24. The "less than" Ogive is of what shape

(A) U-shaped curve **[June 2014]**
(B) J-shaped curve
(C) S-shaped curve
(D) Bell-shaped curve

25. The most appropriate diagram to represent 5 year plan outlay of India in different economic sectors is **[Dec. 2014]**

(A) Pie diagram
(B) Histogram
(C) Line diagram
(D) Frequency polygon

26. For construction of Histogram the class intervals of frequency distribution is

(A) Equal **[Dec. 2014]**
(B) Unequal
(C) Either Equal or Unequal
(D) None

27. 100 persons are divided into number of male female and employed/unemployed it refers to **[Dec. 2014]**

(A) Cardinal data
(B) Ordinal data
(C) Spatial data
(D) Temporal data

28. If the fluctuations in the observed values are very small as compared to the size of the items, it is presented by **[Dec. 2014]**

(A) Z Chart
(B) Ogive Chart
(C) False Base Line
(D) Control Chart

29. The number of observations between 150 and 200 based on the following data is **[June 2015]**

Value	More than 100	More than 150	More than 200	More than 250
Number of observation	70	63	28	05

(A) 63
(B) 28
(C) 25
(D) 35

30. –

Numbers of accidents	0	1	2	3	4	5	6	7
Frequency	12	9	11	13	8	9	6	3

In how many cases 4 or more accidents occur? **[June 2015]**

(A) 8
(B) 26
(C) 53
(D) 24

31. Histogram is used for the presentation of the following type of series:

(A) Time series **[June 2015]**
(B) Continuous frequency series
(C) Discrete series
(D) Individual series

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

32. The perpendicular line drawn from the intersection of two ogives which touches at in x-axis. **[June 2015]**

(A) Mode
(B) Mean
(C) Median
(D) Percentile

33. Which is most common diagrammatic representation for grouped frequency distribution **[Dec. 2015]**

(A) Histogram
(B) Ogive
(C) Both (A) and (B)
(D) None of these

34. Data series classification is of _____ kinds: **[Dec. 2015]**

(A) Two
(B) Three
(C) Four
(D) Five

35. The chart that use Logarithm of the variable is known as: **[Dec. 2015]**

(A) Z-chart
(B) Ratio chart
(C) Rectangular chart
(D) Pie-chart

36. Data collected on religion from the census reports are **[June 2016]**

(A) Secondary
(B) Primary
(C) Either (A) or (B)
(D) Neither (A) nor (B)

37. Different modes of presentation of data are _____

(A) Textual
(B) Tabular
(C) Both (A) and (B)
(D) None

38. In _____ method (s) information can be gathered by the researcher himself by contacting the interviewee. **[Dec. 2016]**

(A) Personal Interview
(B) Telephone Interview
(C) Both (A) and (B)
(D) Indirect Oral

39. Which of the following diagram is appropriate to represent the various head in total cost? **[June 2017]**

(A) Bar graph
(B) Pie chart
(C) Multiple line chart
(D) Scatter plot

40. Stub of a table is the **[Dec. 2017]**

(A) Right part of the table describing the columns
(B) Left part of the table describing the columns
(C) Right part of the table describing the rows
(D) Left part of the table descr rows

41. Which of the following is not a two-dimensional figure? **[June 2009]**

(A) Line Diagram
(B) Pie Diagram
(C) Square Diagram
(D) Rectangle Diagram

42. Less than type and more than type Ogives meet at a point known as:

(A) Mean **[June 2009]**
(B) Median
(C) Mode
(D) None

43. Nationality of a person is: **[Dec. 2009]**

(A) Discrete variable
(B) An attribute
(C) Continuous variable
(D) None

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

44. The primary rules that should be observed in classification

(i) As far as possible, the class should be of equal width

(ii) The classes should be exhaustive

(iii) The classes should be unambiguously defined

Then which of the following is correct

(A) Only (i) and (ii) **[June 2010]**

(B) Only (ii) and (iii)

(C) Only (i) and (iii)

(D) All (i), (ii) and (iii)

45. Mode can be obtained from **[Dec. 2010]**

(A) Frequency polygon

(B) Histogram

(C) Ogive

(D) All of the above

46. The statistical measure computed from the sample observations alone have been termed as **[Dec. 2010]**

(A) estimate

(B) parameter

(C) statistic

(D) attribute

47. The Graphical representation by which median is calculated is called**[Dec. 2011]**

(A) Ogive Curve

(B) Frequency Curve

(C) Line diagram

(D) Histogram

48. Which of the following is not a two dimensional diagram? **[Dec. 2011]**

(A) Square diagram

(B) Line diagram

(C) Rectangular diagram

(D) Pie-chart

49. From which graphical representation, we can calculate partition values?

(A) Lorenz curve **[June 2012]**

(B) Ogive curve

(C) Histogram

(D) None of the above

50. Curve obtained by joining the points whose x coordinates are the upper limits of the class intervals and y coordinates are the corresponding cumulative frequencies is called. **[June 2015]**

(A) Frequency Polygon

(B) Frequency curve

(C) Histogram

(D) Ogive

51. Find the number of observation between 250 and 300 from the following data:

Value more than:	200	250	300	500
No. of observation	56	38	15	0

(A) 38 **[Dec. 2015]**

(B) 23

(C) 15

(D) None of the above

52. For constructing a histogram the class intervals of a frequency distribution must be of the following type: **[Dec.2016]**

(A) Equal

(B) Unequal

(C) Equal or Unequal

(D) None of these

53. Profits made by XYZ Bank which is a blue chip company in different years refer to:

(A) An attribute **[Dec. 2016]**

(B) A discrete variable

(C) A continuous variable

(D) None of these

54. Mode of presentation data **[Dec. 2016]**

(A) Textual presentation

(B) Tabulation

(C) Oral presentation

(D) (A) and (B)

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

55. The point of intersection of less than ogive and greater than ogive curve gives us: **[June 2017]**

(A) Mean
(B) Mode
(C) Median
(D) None of the above

56. Frequency density is used in the construction of **[May 2018]**

(A) Histogram
(B) Ogive
(C) Frequency polygon
(D) None when the classes are of unequal width

57. Divided bar chart is considered for **[May 2018]**

(A) Comparing different components of a variable
(B) The relation of different components to the table
(C) (A) or (B)
(D) (A) and (B)

58. The following frequency distribution

X:	12	17	24	36	45
F:	2	5	3	8	9

is classified as **[Nov. 2018]**

(A) Continuous distribution
(B) Discrete distribution
(C) Cumulative frequency distribution
(D) None of the above

59. Histogram is useful to determine graphically the value of **[Nov.2018]**

(A) Arithmetic mean
(B) Median
(C) Mode
(D) None of the above

60. Data are said to be _____ if the investigator himself is responsible for the collection of the data. [Nov.2018]

(A) Primary data
(B) Secondary data
(C) Mixed of primary and seco data
(D) None of the above

61. A suitable graph for representing the portioning of total into sub parts in statistics is: **[Nov. 2018]**

(A) A Pie chart
(B) A pictograph
(C) An ogive
(D) Histogram

62. The number of times a particular items occurs in a class interval is called its:

(A) Mean **[Nov. 2018]**
(B) Frequency
(C) Cumulative frequency
(D) None of the above

63. An ogive is a graphical representation of **[Nov. 2018]**

(A) Cumulative frequency distribution
(B) A frequency distribution
(C) Unground data
(D) None of the above

64.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	4	6	20	8	3

For the class 20-30. Cumulative frequency is: **[Nov. 2018]**

(A) 10
(B) 26
(C) 30
(D) 41

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

65. Which of the following graph is suitable for cumulative frequency distribution? **[June 2019]**

(A) Ogive
(B) Histogram
(C) G.M
(D) A.M

66. Histogram can be shown as **[June 2019]**

(A) Ellipse
(B) Rectangle
(C) Hyperbola
(D) Circle

67. _____ Series is continuous. **[June 2019]**

(A) Open ended
(B) Exclusive
(C) Close ended
(D) Unequal call intervals

68. Ogive graph is used for finding **[June 2019]**

(A) Mean
(B) Mode
(C) Median
(D) None

69. Histogram is used for finding **[June 2019]**

(A) Mode
(B) Mean
(C) First quartile
(D) None

70. The graphical representation of cumulative frequency distribution is called. **[Nov. 2019]**

(A) Histogram
(B) Historiagram
(C) Ogive
(D) None

71. The average of salaries in a factory is Rs. 47,000. The Statement that the average salary Rs. 47,000 is _____. **[Nov. 2020]**

(A) Descriptive statics
(B) Inferential
(C) Detailed
(D) Undetailed

72. Statistics cannot deal with ____ data. **[Nov.2020]**

(A) quantitative
(B) qualitative
(C) textual
(D) undetailed

73. Sweetness of a sweet dish is: **[Nov.2020]**

(A) Attribute
(B) Discrete variable
(C) Continuous variable
(D) Variable

74. Census reports are used as a source of _____ date. **[Nov. 2020]**

(A) Secondary
(B) Primary
(C) Organize
(D) Confidential

75. Types of cumulative frequencies are: **[Nov. 2020]**

(A) 1
(B) 2
(C) 3
(D) 4

76. You are an auditor of a firm and the firm earns a profit of Rs. 67,000 you stated to them that the annual profit is Rs. 67,000. This is _____ type of statistics. **[Nov.2020]**

(A) Descriptive
(B) Detailed
(C) Non detailed
(D) Inferential

77. The _____ are used usually when we wants to examine the relationship between two variables. **[Nov. 2020]**

(A) Bar Graph
(B) Pie Chart
(C) Line Chart
(D) Scatter Plot

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

78. When data are classified according to one criterion, then it is called _____ classification. **[Nov. 2020]**

(A) quantitative
(B) qualitative
(C) simple
(D) factored

79. A bar chart is drawn for **[Jan. 2021]**

(A) Continuous data
(B) Nominal data
(C) Time series data
(D) Comparing different components

80. A tabular presentation can be used for **[Jan. 2021]**

(A) Continuous series data
(B) Nominal data
(C) Time series data for longer period
(D) Primary data

81. A variable with qualitative characteristic is known as **[Jan. 2021]**

(A) Quality Variable
(B) An attribute
(C) A discrete variable
(D) A continuous variable

82. The accuracy and consistency of data can be verified by **[Jan. 2021]**

(A) Scrutiny
(B) Internal Checking
(C) External Checking
(D) Double Checking

83. From a histogram one cannot compute the approximate value of **[Jan. 2021]**

(A) Mode
(B) Standard deviation
(C) Median
(D) Mean

84. The left part of a table providing the description of rows is called. **[Jan. 2021]**

(A) Caption
(B) Box – head
(C) Stub
(D) Body

85. Mode can be obtained from _____

(A) Frequency polygon **[Jan. 2021]**
(B) Histogram
(C) Ogive
(D) All of the above

86. Most of the Commonly used distributions provide a. **[Jan. 2021]**

(A) Bell – Shaped
(B) U Shaped
(C) J – Shaped Curve
(D) Mixed Curve

87. Which of the following is suitable for the graphical representation of a Cumulative frequency distribution? **[Jan. 2021]**

(A) Frequency polygon
(B) Histogram
(C) Ogive
(D) Pie chart

88. Sweetness of sweet dish is. **[Jan. 2021]**

(A) An Attribute
(B) A discrete variable
(C) A continuous variable
(D) A variable

89. _____ Means separating items according to similar characteristics grouping them into various classes: **[July 2021]**

(A) Classification
(B) Editing
(C) Separation
(D) Tabulation

90. In graphical representation of data, ideographs are also called as: **[July 2021]**

(A) Picto-graphs
(B) Asymmetry graphs
(C) Symmetry graphs
(D) Pictograms

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

91. A graph that uses vertical bars to represent data is called a: **[July 2021]**

(A) Line graph

(B) Scatter plot

(C) Vertical graphs

(D) Bar graph

92. In a graphical representation of data, the largest numerical value is 4 the smallest numerical value is 25. If classes desired are 4 then which class interval is: **[July 2021]**

(A) 45

(B) 5

(C) 20

(D) 7.5

93. Frequency density of a class interval is the ratio of _____. **[July 2021]**

(A) Class frequency to the total frequency

(B) Class length to class frequency

(C) Class frequency to the cumulative frequency

(D) Frequency of that class interval to the corresponding class length

94. There were 200 employees in an office in which 150 were married. Total male employees were 160 out of which 120 were married. What was the number of female unmarried employees? **[July 2021]**

(A) 30

(B) 40

(C) 50

(D) 10

95. Data collected on religion from the census reports are: **[July 2021]**

(A) Primary data

(B) Unclassified data

(C) Sample data

(D) Secondary data

96. In a study about the male and female students of Commerce and Science departments of a college in 5 years, the following data's were obtained:

[Dec. 2021]

1995	2000
70% female students	75% female students
65% read Commerce	40% read Science
20% of male students read Science	50% of female students read Commerce
3000 total No. of students	3600 total No. of students

After combining 1995 and 2000 if x denotes the ratio of female commerce students to female Science student and y denotes the ratio of male commerce student to male Science student, then

(A) $x = y$

(B) $x > y$

(C) $x < y$

(D) $x \geq y$

97. A National Institute arranged its students data in accordance with different states. This arrangement of data is known as **[Dec. 2021]**

(A) Temporal Data

(B) Geographical Data

(C) Ordinal Data

(D) Cardinal Data

98. A student marks in five subject S1, S2, S3, S4 and S5 are 86, 79, 90, 88 and 89. If we need to draw a Pie chart to represent these marks, then what will be the Central angle for S3? **[Dec. 2021]**

(A) 103.2°

(B) 75°

(C) 105.6°

(D) 94.8°

99. Ogive curves cannot be used to determine **[Dec. 2021]**

(A) Mean

(B) Median

(C) Mode

(D) Range

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

100. The following data relate to the marks of a group of students:

Marks	Below 10	Below 20	Below 30	Below 40	Below 50
No. of students	15	38	65	84	100

How many students got marks more than 30? **[Dec. 2021]**

(A) 65
(B) 50
(C) 35
(D) 43

101. The following data relate to the marks of 48 students in Statistics:

56	10	54	38	21	43	12	22
48	51	39	26	12	17	36	19
48	36	15	33	30	62	57	17
5	17	45	46	43	55	57	38
43	28	32	35	54	27	17	16
11	43	45	2	16	46	28	45

What are the frequency densities for the class intervals 30-39, 40-49, 50-59? **[Dec. 2021]**

(A) 0.20, 0.50, 0.90
(B) 0.70, 0.90, 1.10
(C) 0.1875, 0.1667, 0.2083
(D) 0.90, 1.00, 0.80

102. Multiple axis line chart is considered when **[Dec. 2021]**

(A) There is more than one time series
(B) The units of the variables are different
(C) In any case
(D) If there are more than one time series and unit of variables are different

103. Which one of the following is source of primary data? **[Dec. 2022]**

(A) Government records
(B) Research Articles
(C) Journals
(D) Questionnaire filled by Enumerators

104. Which is the left part of the table providing the description of the rows? **[Dec. 2022]**

(A) Captain
(B) Box head
(C) Stub
(D) Body

105. The suitable formula for computing the number of class intervals is: **[Dec. 2022]**

(A) 3.322 logN
(B) 0.322 logN
(C) 1 + 3.322 logN
(D) 1 –3.322 logN

106. Ogive for more than type and less than type distributions intersect at **[Dec. 2022]**

(A) Means
(B) Median
(C) Mode
(D) Origin

107. The share holding pattern of ABC Ltd. is as follows:

Share holders	Promoter	FII	DII	Govt	Public
No. of shares in Millions	120	25	20	20	15

What is the difference between central angles (in degree) for shares held by Promoters and Public, in pie chart? **[Jun. 2023]**

(A) 216
(B) 189
(C) 180
(D) 99

108. What does an Ogive curve represent? **[Jun. 2023]**

(A) The cumulative frequency and class boundary
(B) The frequency and class boundary
(C) The frequency and cumulative frequency
(D) The Frequency and Class Interval

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

109. The following is the data related to the daily income of 86 persons:

Income in ₹ :	500-999	1000-1499	500-1999	2000-2499
No. of persons:	15	23	36	7

What is the percentage of persons earning at least ₹ 1,500 per day? **[Jun. 2023]**

(A) 50%

(B) 45%

(C) 40%

(D) 60%

110. For tabulation, 'caption' is **[Jun. 2023]**

(A) The upper part of the table

(B) The lower part of the table

(C) The main part of the table

(D) The upper part of a table that describes the rows and sub-rows

111. The Modes of presentation of data are: **[Jun. 2023]**

(A) Textual, Diagrammatic and Internal presentation

(B) Tabular, Textual and Internal Presentation

(C) Textual, Tabular and Diagrammatic presentation

(D) Tabular, Diagrammatic and Internal Presentation

112. In a cumulative frequency curve, what is represented on the Y-axis? **[Dec. 2023]**

(A) Class interval

(B) Cumulative frequency

(C) Frequency density

(D) Relative frequency

113. In a frequency distribution, the relative frequency of the class is: **[Dec. 2023]**

(A) The ratio of the class frequency to the total number of classes

(B) The ratio of the class frequency to the total frequency

(C) The ratio of the class frequency to the total number of data points

(D) The ratio of the class mid point to the class frequency

114. By plotting cumulative frequency against the respective class boundary, we get **[Dec 2023]**

(A) Frequency curve

(B) Ogives

(C) Frequency polygon

(D) Histogram

115. Frequency density corresponding to a class interval is ratio of : **[Dec 2023]**

(A) Class frequency to class length

(B) Class frequency to total frequency

(C) class frequency to cumulative frequency

(D) class length to class frequency

116. A less than ogive curve is drawn by plotting **[Jun. 2024]**

(A) Less than cumulative frequencies on the vertical axis

(B) More than cumulative frequencies on the vertical axis

(C) Highest Frequencies on vertical axis

(D) Lowest Frequencies on vertical axis

117. Two frequency distributions are given to you. To compare them visually the best diagram to be drawn on the same sheet is **[Jun. 2024]**

(A) Pie chart

(B) Histogram

(C) Frequency polygon

(D) Bar Chart

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

118. Which sampling is based on the discretion of the sampler?

(A) Systematic **[Jun. 2024]**

(B) Multi-stage

(C) Stratified

(D) Purposive

119. Which of the following is not a type of sampling? **[Jun. 2024]**

(A) Probability

(B) Non-probability

(C) Stand-Alone

(D) Mixed

120. An ogive is used to represent **[Jun. 2024]**

(A) The frequency of each data point.

(B) The number of data points fallingbelow a specific value

(C) The proportion of data points falling below a specific value

(D) The relationship between two variables

121. A histogram and a pie chart represent the same data on monthly expenses of a household. Which statement is most likely true? **[Jun. 2024]**

(A) The histogram only shows the frequency of each expense category, while the pie chart shows the proportion of each category

(B) Both the histogram and pie chart show the frequency of each expense category

(C) Both the histogram and pie chart show the proportion of each expense category

(D) Pie charts are always better than histograms for representing expenses

122. The following set of data cannot be presented in a table. **[Jun. 2024]**

(A) The weights of students describedin centimeters

(B) the weights of candidates express and in kilograms

(C) the amount of rainfall …….. as medium." "Average," heavy", etc.

(D) The number of bills per day cleared by on auditor in a month

123. According to the emperial rule. If the data from a "bell-shaped" distribution, then the maximum and minimum frequencies occur at _____ and _____ respectively.

(A) Middle, left end **[Jun. 2024]**

(B) Middle, right end

(C) End, middle

(D) Middle, ends

124. The Secondary data is collected by: **[Sept. 2024]**

(A) International source like World Bank.

(B) Observation method.

(C) Interview method.

(D) Mailed questionnaire method.

125. Exit polls are an example of which method of collecting data?

(A) Random sampling **[Sept. 2024]**

(B) Investigation

(C) Census

(D) Quota sampling

126. Series in which frequencies are continuously added corresponding to each class interval in the series: **[Sept. 2024]**

(A) Frequency

(B) Cumulative frequency series

(C) Deviation

(D) Mid value

127. Numerical data presented in descriptive form are called: **[Sept. 2024]**

(A) Classified presentation.

(B) Tabular presentation

(C) Textual presentation

(D) Graphical presentation

128. The distribution of commuters coming to a Metro station from early morning hours to peak morning hours follows which type of

frequency curve? [Sept. 2024]

(A) Bell shaped curve
(B) J-shaped curve
(C) U-shaped curve
(D) Mixed curve

129. What type of data is most appropriate for representing using a Pie chart? [Sept. 2024]

(A) Continuous data
(B) Categorical data
(C) Ordinal data
(D) Interval data

130. If the class intervals of certain data are 10-14, 15-19, 20-24, then the first class boundaries is [Sept. 2024]

(A) 9.5-14.5
(B) 10-14
(C) 10-15
(D) 10.5-15.5

131. Standard Error (SE) and square root of sample size are [Jan. 2025]

(A) Directly proportional
(B) Equal
(C) Inversely proportional
(D) Not equal

132. Which sampling technique is most appropriate when a person wants to ensure that subgroups are proportionally represented? [Jan. 2025]

(A) Stratified Sampling
(B) Simple Random Sampling
(C) Multistage Sampling
(D) Systematic Sampling

133. For the non-overlapping classes 25-34, 35-44, 45-54, 55-64 the class mark of the class 35-44 is

(A) 39.5 [Jan. 2025]
(B) 40.5
(C) 35.0
(D) 44.0

134. Non-probability Sampling is also known as:

(A) Stratified Sampling [Jan. 2025]
(B) Simple Random Sampling
(C) Purposive or Judgment Sampling
(D) Cluster Sampling

135. Out of 1000 persons, 40% are female, others are male. In a marriage function, 300 persons enjoyed the song. 30% of the people who had not enjoyed the song were female. What is the number of male, who did not enjoy the song in the function?

(A) 120 [Jan. 2025]
(B) 180
(C) 360
(D) 490

136. In tabular presentation of data, stub is _____. [Jan. 2025]

(A) Left part of table, which provide the description of rows
(B) Right part of the table providing the description of the row
(C) Left part of the table providing the description of columns
(D) Right part of the table providing the description of columns

137. A sample of 100 people is taken from a population of 1000. The sample mean height is 170 cm with a standard deviation of 10 cm. What is the standard error of mean?

(A) 0.5 cm [Jan. 2025]
(B) 1.0 cm
(C) 1.58 cm
(D) 10 cm

138. In pie chart, if a category represents 25% of the total data, what will be the angle of corresponding sector? [Jan. 2025]

(A) 90°
(B) 45°
(C) 60°
(D) 75°

139. A population comprises 7 members. The number of all possible samples of size 3 that can be drawn from it with replacement is –

(A) 216 [Jan. 2025]
(B) 343
(C) 21
(D) 125

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	C	2.	A	3.	B	4.	C	5.	D
6.	C	7.	C	8.	C	9.	B	10.	B
11.	B	12.	C	13.	A	14.	D	15.	C
16.	C	17.	B	18.	B	19.	A	20.	D
21.	B	22.	C	23.	B	24.	B	25.	A
26.	C	27.	B	28.	C	29.	D	30.	B
31.	B	32.	C	33.	C	34.	B	35.	B
36.	A	37.	C	38.	C	39.	B	40.	D
41.	A	42.	B	43.	B	44.	B	45.	B
46.	C	47.	A	48.	D	49.	B	50.	D
51.	B	52.	C	53.	C	54.	D	55.	C
56.	A	57.	D	58.	B	59.	C	60.	A
61.	A	62.	B	63.	A	64.	C	65.	A
66.	B	67.	B	68.	C	69.	A	70.	C
71.	B	72.	B	73.	A	74.	A	75.	B
76.	D	77.	C	78.	C	79.	D	80.	B
81.	B	82.	A	83.	A	84.	C	85.	B
86.	A	87.	C	88.	A	89.	A	90.	D
91.	D	92.	B	93.	D	94.	D	95.	D
96.	C	97.	B	98.	B	99.	B	100.	C
101.	D	102.	D	103.	D	104.	C	105.	C
106.	B	107.	B	108.	A	109.	A	110.	A
111.	C	112.	B	113.	B	114.	B	115.	A
116.	A	117.	C	118.	D	119.	C	120.	B
121.	D	122.	C	123.	D	124.	A	125.	A
126.	B	127.	C	128.	B	129.	B	130.	A
131.	C	132.	A	133.	A	134.	C	135.	D
136.	A	137.	B	138.	A	139.	B		

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 9
MEASURES OF CENTRAL TENDENCY

1. If x = 3+1.5y, Mode of y is 10, what is mode of x.

(A) 15
(B) 18
(C) 20
(D) 22

2. Average of 5 numbers is 10. If 6th number is added to the sum then, mean increases by 1, then the sixth number is

(A) 11
(B) 12
(C) 14
(D) 16

3. Mean of 'n' terms is $\bar{x}$. If first number is increased by 1, second number is increased by 2 and third number is increased by 3 and so on then, the new average is

(A) $\bar{x}+n$
(B) $\bar{x}+n+1$
(C) $\bar{x}+\frac{n+1}{2}$
(D) $\bar{x}+\frac{n}{2}$

4. If the first and third Quartile are 20 & 40, find median respectively.

(A) 10
(B) 20
(C) 30
(D) 60

5. $\sum_{n=1}^{5} x_n = 56 \,\&\, x_6 = 6$ then AM of 6 terms is

(A) 10.33
(B) 9.66
(C) 7.5
(D) 8.66

6. Average weight of 100 student is 60 kg. if the average weight of boys is 70 kg and average weight of Girls is 50 kg, then the number of girls is

(A) 40
(B) 60
(C) 50
(D) 55

7. If the depreciation for first 3 years is 8% and the depreciation for next 7 years is 10% then combined depreciation will be {Assume straight line method}

(A) 9%
(B) 9.4%
(C) 8.5%
(D) 9.8%

8. If a person climbs the mountain at 5 km/hr and returns back at 10 km/hr then the average speed is

(A) 6.66 kmph
(B) 7.5 kmph
(C) 8 kmph
(D) 8.5 kmph

9. For 50 observations the mean is 80 marks. Two wrong observations 64 and 82 are replaced by correct observations 48 and 28. The correct AM will be **[June 2009]**

(A) 78.00
(B) 78.25
(C) 78.40
(D) 78.60

10. If mode is 2.13 and mean is 3.57, the median is **[Dec. 2009]**

(A) 2.88
(B) 3.09
(C) 3.15
(D) 3.51

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

11. The average weight of 15 students of a class is 110 kg. if the average weight of first 5 students is 100 kg and the average weight of next 5 students is 125 kg then what is the average weight of remaining 5 students?

(A) 103 Kg
(B) 105 Kg
(C) 106 Kg
(D) 108 Kg

12. There are 11 students in a class out of which 3 students failed. The score of remaining 8 students is 10,14, 12, 20, 24, 11, 18, 22. What is the median score?

(A) 16
(B) 14
(C) 18
(D) 12

13. Mode is calculate from

(A) Ogive
(B) Frequency Polygon
(C) Histogram
(D) Pie-Chart

14. If G is GM between a and b then $1/(G^2-a^2)+1/(G^2-b^2)$ is

(A) G^2
(B) $\frac{1}{G^2}$
(C) $\frac{1}{G}$
(D) G

15. A lady is travelling at the speed of 20 km/hr. if she returns back with higher speed and the average speed of journey is 24 km/hr., then the return speed is

(A) 25 Kmph
(B) 26 Kmph
(C) 28 Kmph
(D) 30 Kmph

16. If mean of x is 50 then what is mean of $u = 10+5x$

(A) 60
(B) 250
(C) 260
(D) 280

17. If the difference between mean and mode is 63, then the difference between mean and median will be

(A) 21
(B) 20.6
(C) 18
(D) 24

18. The average of 5 quantities is 6 and out of these the average of 3 quantities is 8. What is the average of the remaining two

(A) 1
(B) 2
(C) 3
(D) 4

19. If the Arithmetic mean between two numbers is 64 and the Geometric mean between them is 16, then the Harmonic Mean between them is

(A) 48
(B) 40
(C) 24
(D) 4

20. The median of following numbers, which are given is ascending order is 25. Find the value of x
11,13,15,19,(x+2), 30, 35,39,46

(A) 22
(B) 23
(C) 24
(D) 25

21. Two average age of a group of 10 students was 20 years. The average age increased by two years when two new students joined the group. What is the average age of two new students who joined the group?

(A) 22 years
(B) 30 years
(C) 32 years
(D) 36 years

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

22. The mean of first 3 terms is 14 and the mean of next 2 terms is 18. The mean of 5 numbers is _____.

(A) 15
(B) 15.6
(C) 16
(D) 16.2

23. G.M. of three observations 40, 50 and x is 10 the value of x is

(A) 2
(B) $\frac{1}{2}$
(C) 4
(D) $\frac{1}{4}$

24. A man travels from Agra to Gwalior at a speed of 30 kmph and returns at a speed of 60 kmph. What is his average speed?

(A) 40 Kmph
(B) 50 Kmph
(C) 45 Kmph
(D) 48 Kmph

25. If the mode of data is 18 and mean is 24, then median is _____.

(A) 20
(B) 21
(C) 22
(D) 23

26. The Mean salary of a group of 50 person is Rs. 5,850. Later on it was discovered that the salary of one of the employees has been wrongly taken as Rs. 8,000 instead of Rs. 7,800. The corrected mean salary is:

(A) 5854
(B) 5846
(C) 5852
(D) No change

27. Which of the following measures of central tendency cannot be shown by graphical method?

(A) Mode
(B) Median
(C) Mean
(D) Both (B) and (C)

28. G.M. of 8, 4, 2 is _____.

(A) 4
(B) 6
(C) 7
(D) 6.5

29. The average age of 15 students is 15 years. Out of these the average age of 5 students is 14 years and that of other 9 students is 16 years, then the age of 15th student is _____.

(A) 10 years
(B) 11 years
(C) 12 years
(D) None of these

30. G.M. of a, b, c, d is 3 then G.M. of $\frac{1}{a}, \frac{1}{b}, \frac{1}{c}, \frac{1}{d}$.

(A) 3
(B) $\frac{1}{3}$
(C) $\frac{1}{2}$
(D) 3^2

31. The mean of the following data is 6. Find the value of P.

X:	2	4	6	10	P+5
P:	3	2	3	1	2

(A) 9
(B) 5
(C) 6
(D) 7

32. Which of the following statement is true?

(A) Median is based on all obseravations
(B) The mode is the mid value
(C) The median is the 2nd Quartile
(D) The mode is the 5th decile

33. For two numbers A.M. = 10 and G.M. = 8 then H.M.?

(A) 1.6
(B) 3.2
(C) 6.4
(D) 12.8

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

34. The 3rd decile for the values 15, 10, 20, 25, 18, 11, 9, 12, is

(A) 10
(B) 11
(C) 10.5
(D) 10.7

35. The A.M. of square of first '2n' natural number is

(A) $\frac{1}{6}(2n+1)(4n-1)$
(B) $\frac{1}{6}(2n-1)(4n-1)$
(C) $\frac{1}{6}(2n-1)(4n+1)$
(D) $\frac{1}{6}(2n+1)(4n+1)$

36. If the Harmonic mean of two numbers is 4 and Arithmetic mean (A) and Geometric mean (G) satisfy the equation $2A+G^2 = 27$ then the two numbers are

(A) 2, 4
(B) 4, 8
(C) 3, 6
(D) 6, 9

37. There were 50 students in a class, 10 failed whose average marks were 2.5. The total marks of class were 281. Find the average marks of students who passed?

(A) 5.6
(B) 6
(C) 6.2
(D) 6.4

38. If the A.M. of two numbers is 30 and G.M. is 24 then will be those two numbers?

(A) 24, 36
(B) 28, 32
(C) 12, 48
(D) 20, 40

39. If the mean of data is 55.6 and the mode is 46, then the median is

(A) 51.6
(B) 52.1
(C) 52.4
(D) 53.3

40. _____ is used for ordering the size of designed cloths.

(A) Mean
(B) Mode
(C) Median
(D) G.M.

41. The mean of 10 observations is 14.4. Out of these mean of 4 observations is 16.5, then find the mean of remaining observations?

(A) 11.5
(B) 12
(C) 12.5
(D) 13

42. The mean of 6, 4, 1, 5, 6, 10 and 3 is 5. If each number is added with 2, then the new mean is _____.

(A) 3.5
(B) 6
(C) 7
(D) Unchanged

43. Which of the following is correct?

(A) 3 (Mean-Median) = Mean-Mode
(B) Mean-Median = 3(Mean-Mode)
(C) Mean-Median = 2 (Mean-Mode
(D) Mean-Mode = 2 (Mean-Median)

44. A person purchases 5 rupees worth of eggs from 10 different markets. You are to find average no. of eggs per rupee for all the markets taken together. What is the suitable form of average on this case?

(A) AM
(B) GM
(C) HM
(D) Median

45. G.M. = 6, A.M. = 6.5 then HM =

(A) 5.8
(B) 5
(C) 5.5
(D) 6

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

46. A company' past 10 years average earnings was Rs. 40 crores. For obtaining the same average earnings for 11 years including these 10 years how much earning (in Rs.) must be made by the company in the 11th year?

(A) 50 Crs.
(B) 40 Crs.
(C) 30 Crs.
(D) Not possible

47. The rate of return from three different shares are 100%, 200% and 400% respectively the average rate of return will be _____.

(A) 133.33
(B) 150
(C) 200
(D) 266.66

48. Mean of 7, 9, 12, x, 4, 11 and 5 is 9. Find the missing observation

(A) 15
(B) 18
(C) 20
(D) 19

49. If all the frequencies are equal than which will doesn't exist.

(A) Mean
(B) Median
(C) Mode
(D) None of these

50. _____ is the reciprocal of the AM of reciprocal of observations.

(A) HM
(B) GM
(C) Both
(D) None

51. The median of $x, \frac{x}{2}, \frac{x}{3}, \frac{x}{5}$ is 10.

Find x where $x > 0$ **[June 2009]**

(A) 24
(B) 32
(C) 8
(D) 16

52. The sum of squares of deviation from mean of 10 observations is 250. Mean of the data is 10. Find the co-efficient of variation.

(A) 10% **[June 2009]**
(B) 25%
(C) 50%
(D) 0%

53. If A be the A.M. of two positive unequal quantities X and Y and G be their G.M., then;

(A) $A < G$ **[June 2009]**
(B) $A > G$
(C) $A \leq G$
(D) $A \geq G$

54. If the AM & GM of two numbers are 30 and 24 respectively. Find the no.'s

(A) 12 and 24 **[Nov. 2019]**
(B) 48 and 12
(C) 30 and 30
(D) 40 and 20

55. Find the mode of the following data:

Class Interval	3-6	6-9	9-12	12-15	15-18	18-21
Frequency	2	5	10	23	21	12

(A) 25 **[Nov. 2019]**
(B) 4.6
(C) 14.6
(D) 13.5

56. Histogram is used to represent

(A) Mode **[Nov.2019]**
(B) Median
(C) Percentile
(D) Quartile

57. Find the median of the following.

CI	0 – 10	10 – 20	20 – 30	30 – 40	40 - 50
f	2	3	4	5	6

(A) 35 **[Nov. 2019]**
(B) 32
(C) 36
(D) 37.5

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

58. Find the mode of the following:

0-10	10–20	20–30	30– 40	40– 50	50- 60
7	14	22	34	20	19

(A) 32 **[Nov. 2019]**
(B) 34.61
(C) 25.42
(D) 35

59. Find the median of the following:

CI	0 – 10	10 – 20	20 – 30	30 – 40	40 - 50
f	5	15	28	10	2

(A) 10.57 **[Nov. 2019]**
(B) 23.57
(C) 25
(D) 28

60. None $\sum_{i=1}^{n}(\bar{x}-x_i)$ is equal to **[Nov. 2019]**

(A) $\bar{x}\sum_{i=1}^{n}x_i$
(B) $n\left(\bar{x}\sum_{i=1}^{n}x_i\right)$
(C) $\bar{x}-n\bar{x}$
(D) Zero

61. Given the weights for the numbers 1,2,3....n are respectively $1^2, 2^2, 3^2....n^2$ then weighted HM is _____. **[Nov. 2020]**

(A) $\frac{2n+1}{4}$
(B) $\frac{2n+1}{6}$
(C) $\frac{2n+1}{3}$
(D) $\frac{2n+1}{2}$

62. Which measure is suitable for open-end classification? **[Nov. 2020]**

(A) Median
(B) Mean
(C) Mode
(D) GM

63. 50th Percentile is equal to **[Nov. 2020]**

(A) Median
(B) Mode
(C) Mean
(D) None

64. The harmonic mean A and B is $\frac{1}{3}$ and harmonic mean of C and D is $\frac{1}{5}$. The harmonic mean of ABCD is **[Nov. 2020]**

(A) $\frac{8}{15}$
(B) $\frac{1}{4}$
(C) $\frac{1}{15}$
(D) $\frac{5}{3}$

65. Which one of these is least affected by extreme values? **[Nov. 2020]**

(A) Mean
(B) Median
(C) Mode
(D) None

66. If the AM and HM of two numbers are 6 and 9 respectively, then GM is

(A) 7.35 **[Nov.2020]**
(B) 8.50
(C) 6.75
(D) None

67. From the record on sizes of shoes sold in a shop, one can compute the following to determine the most preferred shoe size.

(A) Mean **[Jan. 2021]**
(B) Median
(C) Mode
(D) Range

68. Which of the following measure does not possess mathematical properties? **[Jan.2021]**

(A) Arithmetic mean
(B) Geometric mean
(C) Harmonic mean
(D) Median

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

69. If $y = 3 + (4.5)\,x$ and the mode for x-value is 20, then the mode for y-value is

(A) 3.225 **[Jan.2021]**
(B) 12
(C) 24.5
(D) 93

70. If there are two groups with n_1 and n_2 observations and H_1 and H_2 are respective harmonic means, then the harmonic mean of combined observation is **[Jan. 2021]**

(A) $\dfrac{n_1H_1 + n_2H_2}{n_1 + n_2}$

(B) $\dfrac{n_1H_1 + n_2H_2}{H_1 + H_2}$

(C) $\dfrac{n_1 + n_2}{n_1H_1 + n_2H_2}$

(D) $\dfrac{(n_1 + n_2)H_1.H_2}{n_1H_2 + n_2H_1}$

71. There are n numbers. When 50 is subtracted from each of these number the sum of the numbers so obtained is – 10. When 46 is subtracted from each of the original n numbers, then the sum of numbers. So obtained is 70. What is the mean of the original n numbers? **[July 2021]**

(A) 56.8
(B) 25.7
(C) 49.5
(D) 53.8

72. The mean of 'n' observation is 'x'. If k is added to each observation, then the new mean is. **[July 2021]**

(A) k
(B) xk
(C) x-k
(D) x+k

73. If $y = 3 + 1.9x$, and mode of x is 15, then the mode of y is: **[July 2021]**

(A) 15.9
(B) 27.8
(C) 35.7
(D) 31.5

74. Expenditures of a company (in million rupees) per item in various years)

Year	Item of expenditures				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	108	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

What is the average amount of interest per year which the company had to pay during this period? **[July 2021]**

(A) 33.66
(B) 36.66
(C) 31.66
(D) 39.66

75. If there are 3 observations 15, 20, 25 then the sum of deviation of the observations from their AM is **[Dec. 2021]**

(A) 0
(B) 5
(C) –5
(D) 10

76. If the AM and GM for 10 observations are both 15, then the value of HM is

(A) Less than 15 **[Dec. 2021]**
(B) More than 15
(C) 15
(D) Cannot be determined

77. If average mark for a group of 30 girls is 80, a group of boys is 70 and combined average is 76, then how many are in the boy's group?

(A) 21 **[Dec. 2021]**
(B) 20
(C) 22
(D) 19

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

78. If two variables a and b are related by c = ab then G.M. of c is equal to **[Dec. 2021]**

(A) G.M. of a + G.M. of b
(B) G.M. of a × G.M. of b
(C) G.M. of a – G.M. of b
(D) G.M. of a / G.M. of b

79. For a moderately skewed distribution the median is twice the mean, then the mode is _____ times the median.

(A) 3 **[Dec.2021]**
(B) 2
(C) $\frac{2}{3}$
(D) $\frac{3}{2}$

80. The median value of the set of observations 48, 36, 72, 87, 19, 66, 56, 91 is **[Dec. 2021]**

(A) 53
(B) 87
(C) 61
(D) 19

81. One hundred participants expressed their opinion on recommending a new product to their friends using the attributes: most unlikely, not sure, likely, most likely. The appropriate measure of central tendency that can be used here is **[Dec. 2021]**

(A) Mean
(B) Mode
(C) Geometric mean
(D) Harmonic mean

82. Along a road there are 5 buildings of apartments, marked as 1, 2, 3, 4, 5. Number of people residing in each building is available. A bus stop is to be setup near one of the buildings so that the total distance walked by the residents to the bus stop from their buildings must be kept minimum. One must consider involving _____ to find the position of the bus stop. **[Dec. 2021]**

(A) Mean
(B) Median
(C) Mode
(D) Weighted mean

83. Given that Mean = 70.20 and Mode = 70.50, the Median is expected to be.

(A) 70.15 **[Dec. 2021]**
(B) 70.20
(C) 70.30
(D) 70.35

84. If mean ($\bar{X}$) is = 10 and mode (Z) is = 7, then find out the value of median (M)

(A) 9 **[Dec. 2022]**
(B) 17
(C) 3
(D) 4.33

85. The relationship between two variable x and y is given by 4x – 10y = 20. If the median value of the variable x is 10 then what is median value of variable y? **[Dec. 2022]**

(A) 1.0
(B) 2.0
(C) 3.0
(D) 4.0

86. The median of the observations 42, 72, 35, 92, 67, 85, 72, 81, 51, 56 is **[Dec. 2022]**

(A) 69.5
(B) 72
(C) 64
(D) 61.5

87. The mean of 50 observations is 36. If two observations 30 and 42 are to be excluded, then the mean of the remaining observations will be:

(A) 36
(B) 38
(C) 48
(D) 50

88. If Arithmetic mean between two numbers is 5 and Geometric mean is 4 then what is the value of Harmonic mean? **[Dec. 2022]**

(A) 3.2
(B) 3.4
(C) 3.5
(D) 3.6

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

89. The average age of 15 students in a class is 9 years. Out of them, the average age of 5 students is 13 years and that 8 students is 5 years. What is the average of remaining 2 students? **[Dec. 2022]**

(A) 5 years
(B) 9 years
(C) 10 years
(D) 15 years

90. Find the mean of the following data

Class interval	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	9	13	6	4	6	2	3

(A) 23.7
(B) 35.7
(C) 39.7
(D) 43.7 **[Jun. 2023]**

91. The Median of the following set of observations: 24, 18, 36, 42, 30, 28, 21, 29, 25, 33is **[Jun. 2023]**

(A) 26.5
(B) 27.5
(C) 28.5
(D) 29.5

92. Find the mode of the following data :

X	25-30	30-35	35-40	40-45	45-50	50-55
$f(x)$	20	53	42	42	41	43

(A) 31.75
(B) 30.75
(C) 33.75
(D) 35.75

93. For a moderately skewed distribution of marks in statistics for a group of 200 students, the mean marks and median marks were found to be 55.60 and 52.40, respectively. What are the modal marks? **[Jun. 2023]**

(A) 54.43
(B) 48
(C) 53.56
(D) 46

94. For a given data set: 5, 10, 3, 6, 4, 8, 9, 3, 15, 2, 9, 4, 19, 11, 4; what is the median? **[Jun. 2023]**

(A) 8
(B) 6
(C) 4
(D) 9

95. If the mean of two numbers is 30 and geometric mean is 24, then what will be the Harmonic mean of two numbers? **[Jun. 2023]**

(A) 19.2
(B) 21.8
(C) 22.3
(D) 18.4

96. The Geometric Mean of 3, 7, 11, 15, 24, 28, 30, 0 is **[Jun. 2023]**

(A) 6
(B) 0
(C) 9
(D) 12

97. The frequency of visitor in an office is given below:

Time	9 AM – 11 AM	11 AM – 1 PM	1 PM – 3 PM	3 PM – 5 PM
Frequency	5	18	7	12

Find the cumulative frequency of visitors for the time 11 AM – 1 PM? **[Dec. 2023]**

(A) 5
(B) 23
(C) 18
(D) 30

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

98. The AM and HM of two numbers are 5 and 3.2 respectively, then GM will be: **[Dec. 2023]**

(A) 4.4
(B) 4.2
(C) 4.0
(D) 3.8

99. If mode of a grouped data is 10 and median is 6, then what is the value of mean? **[Dec. 2023]**

(A) 2
(B) 4
(C) 6
(D) 8

100. If mean of 5 observations $x + 1$, $x + 3$, $x + 5$, $x + 7$ and $x + 9$ is given 15, then the value of x will be: **[Dec. 2023]**

(A) 10
(B) 12
(C) 8
(D) 11

101. Consider the following data where class length is given as 5. Calculate the number of class intervals. **[Dec. 2023]**

59, 68, 78, 57, 44, 73, 40, 60, 70, 47

(A) 5
(B) 6
(C) 7
(D) 8

102. The mean of the first three terms is 17 and mean of next four terms is 21. Calculate the mean of seven terms. **[Dec. 2023]**

(A) 18.28
(B) 19.78
(C) 19.58
(D) 19.28

103. The mean of a set of 20 observations in 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is: **[Dec. 2023]**

(A) 17.6
(B) 18.9
(C) 5.7
(D) 24.6

104. The Median of the following frequency distribution is **[Dec. 2023]**

x	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
f(x)	3	5	20	12	7

(A) 27.75
(B) 9.35
(C) 8.25
(D) 10.01

105. If two variable 'x' and 'y' are related as $2x - y = 3$, if the median of 'x' is 10, what is median of 'y'? **[Dec. 2023]**

(A) 4
(B) 7
(C) 5
(D) 6

106. If the mean and median of a moderately asymmetrical series are 26.8 and 27.9 respectively, then the most probable mode is: **[Dec. 2023]**

(A) 35.4
(B) 30.1
(C) 34.3
(D) 70.8

107. The A.M. and G.M. of two positive number a and b are 12 and 12 respectively , find the numbers, **[Dec 2023]**

(A) 18 and 6
(B) 15 and 9
(C) 16 and 8
(D) 12 and 12

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

108. Which of the following measure of central tendency will be unaffected if the lowest and highest observations are removed?

(A) Mean **[Jun. 2024]**
(B) Mode
(C) Median
(D) Range

109. If Mean of a data set is 22 and Median is 22.33 then Mode is **[Jun. 2024]**

(A) 21
(B) 21.34
(C) 22.99
(D) 21.54

110. Which of the following measure of central tendency depends on the position of the observation? **[Jun. 2024]**

(A) Mean
(B) Median
(C) Mode
(D) Harmonic Mean

111. The mean of a set of 20 observations is 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is. **[Jun. 2024]**

(A) 17.6
(B) 18.9
(C) 5.7
(D) 24.6

112. If there are two groups containing 40 and 30 observations and have arithmetic means as 50 and 60, then the combined arithmetic mean is **[Jun. 2024]**

(A) 55.48
(B) 56.35
(C) 54.28
(D) 50.28

113. If the arithmetic mean of two numbers is 10 and the geometric mean is 6, then the difference in the numbers is **[Jun. 2024]**

(A) 12
(B) 14
(C) 16
(D) 8

114. The Ogive can be used for making :

(A) short term projection **[Sept. 2024]**
(B) medium term projection
(C) long term projection
(D) group frequency distribution

115. The mean of a group X is 70 and the mean of group Y is 85. If the number of observations in group Y is five times that of group X, then the combined mean of both the groups is:

(A) 75 **[Sept. 2024]**
(B) 80
(C) 77.5
(D) 82.5

116. The Median of the following frequency distribution is: **[Sept. 2024]**

x	0-10	10-20	20-30	30-40	40-50
f(X)	8	30	40	12	10

(A) 33
(B) 22.5
(C) 23
(D) 24

117. If the mean and median of a moderately asymmetrical series are 70.8 and 68.6 respectively, then the most probable mode is: **[Sept. 2024]**

(A) 64.2
(B) 75.2
(C) 63.4
(D) 72.5

118. For a moderately - skewed distribution, which of the following relationship holds? **[Sept. 2024]**

(A) Mean−Mode = 3 (Mean − Median)
(B) Median−Mode = 3 (Mean − Median)
(C) Mean−Median = 3 (Mean −Mode)
(D) Mean−Median = 3 (Median − Mode)

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

119. The quartile deviation of the distribution of the following data is: **[Sept. 2024]**

X	2	3	4	5	6
f(x)	2	4	8	4	1

(A) 0
(B) 1
(C) 1/4
(D) 1/2

120. The mean of three numbers is 135. Among the three numbers the biggest number is 180. The difference between the remaining two numbers is 25. Then the smallest number is **[Jan. 2025]**

(A) 130
(B) 125
(C) 120
(D) 100

121. Mean deviation is _____ when the deviations are taken from the median. **[Jan. 2025]**

(A) maximum
(B) minimum
(C) zero
(D) can't say

122. Find the Harmonic Mean of 2, 4 & 6. **[Jan. 2025]**

(A) 3.30
(B) 3.00
(C) 3.75
(D) 4.00

123. If the mode of the following data is 13, then the value of x in the data set is

13, 8, 6, 3, 8, 13, 2x + 3, 8, 13, 3, 5, 7 **[Jan. 2025]**

(A) 6
(B) 5
(C) 7
(D) 8

124. The best measure of central tendency is **[Jan. 2025]**

(A) Mean
(B) Median
(C) Mode
(D) Range

125. The AM & GM for two observations are 8 and 2. Find the values of two observations. **[Jan. 2025]**

(A) 15.75, 0.25
(B) 16, 1
(C) 15,1
(D) 14.75, 1.75

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	B	2.	D	3.	C	4.	C	5.	A
6.	C	7.	B	8.	A	9.	D	10.	B
11.	B	12.	D	13.	C	14.	B	15.	D
16.	C	17.	A	18.	C	19.	D	20.	B
21.	C	22.	B	23.	B	24.	B	25.	C
26.	B	27.	C	28.	A	29.	B	30.	B
31.	D	32.	C	33.	C	34.	D	35.	D
36.	C	37.	D	38.	C	39.	C	40.	B
41.	D	42.	C	43.	A	44.	C	45.	C
46.	B	47.	C	48.	A	49.	C	50.	A
51.	A	52.	C	53.	B	54.	B	55.	C
56.	A	57.	B	58.	B	59.	B	60.	D
61.	C	62.	A	63.	A	64.	B	65.	B
66.	A	67.	C	68.	D	69.	D	70.	D
71.	C	72.	D	73.	D	74.	B	75.	A
76.	C	77.	B	78.	B	79.	B	80.	C
81.	B	82.	B	83.	C	84.	A	85	B
86	A	87	A	88	A	89	D	90	B
91	C	92	C	93	D	94	B	95	A
96	B	97	B	98	C	99	B	100	A
101	D	102	D	103	C	104	A	105	B
106	B	107	D	108	C	109	C	110	B
111	C	112	C	113	C	114	D	115	D
116	C	117	A	118	A	119	B	120	D
121	B	122	A	123	B	124	A	125	A

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CHAPTER – 10
MEASURES OF DISPERSION

1. If Variance is 81, Mean is 3 then Coefficient of Variation is

(A) 33.33%
(B) 300%
(C) 150%
(D) 100%

2. Which is the best measure of dispersion in open end class

(A) Range
(B) MD
(C) QD
(D) SD

3. If arithmetic mean of x is 50 and standard deviation of x is 5& also y = (x-50)/5, find arithmetic mean and standard deviation of y

(A) (1, 0)
(B) (0, 1)
(C) (1, 2)
(D) (2, 1)

4. Inter-quartile Range is **[June 2009]**

(A) Half of QD
(B) Double of QD
(C) Same as QD
(D) None of these

5. If n=10, $\bar{x} = 10, \sum(x - \bar{x})^2 = 250$ find coefficient of variation

(A) 30%
(B) 50%
(C) 60%
(D) 75%

6. If the lowest value in calculating Range is L_1 and highest value is L_2 then

(A) $\frac{L_1+L_2}{L_1-L_2} \times 100$
(B) $\frac{L_2-L_1}{L_2+L_1} \times 100$
(C) $\frac{L_2}{L_1} \times 100$
(D) $\frac{L_1}{L_2} \times 100$

7. 5x-2y+7=0, Mean Deviation of y about mean is 5 then the Mean Deviation of x about mean is

(A) $\frac{3}{5}$
(B) $\frac{5}{3}$
(C) $\frac{1}{2}$
(D) 2

8. If y = 2-3x and Variance of x is 5 what is variance of y **[Dec. 2009]**

(A) 15
(B) -15
(C) -45
(D) 45

9. What is mean deviation of 4, 9, 11, 14, 37 from median

(A) 6.5
(B) 6
(C) 7.6
(D) 7.2

10. What is the variance of 3, 4, 5 and 8

(A) 3.5
(B) 3.2
(C) 4.1
(D) 4.6

11. If all observations in a distribution are increased by 6, then the variance of the series will be

(A) Increases by 6.
(B) Decreases by 6.
(C) Becomes 6 times.
(D) Remains unchanged

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. The standard deviation of the weights (in kg) of the students of a class of 50 students was calculated to be 4.5 kg later on it was found that due to some fault in weighting machine, the weight of each student was under measured by 0.5 kg. The correct standard deviation of the weight will be:

(A) 4 Kg
(B) 5 Kg
(C) 4.5 Kg
(D) None of these

13. S.D. of first 'n' natural numbers is 2 then n is

(A) 7
(B) 10
(C) 12
(D) 14

14. The S.D. is independent of change of _____

(A) Origin
(B) Scale
(C) Both origin & scale
(D) Neither origin nor scale

15. If the S.D. of x is σ then S.D. of $\frac{ax+b}{c}$

(A) $\frac{a\sigma+b}{c}$
(B) $\frac{a\sigma}{c}$
(C) $\left|\frac{a}{c}\right|\sigma$
(D) aσ

16. Which of the following measures of dispersion is used for finding consistency between the series?

(A) Range
(B) QD
(C) MD
(D) SD

17. $\sum x^2 = 3390, n = 30, \sigma = 7$ then $\bar{x}$ =

(A) 6
(B) 8
(C) 9
(D) 11.5

18. If the mean of frequency distribution is 100 and coefficient of variation is 45% then standard deviation is

(A) 45
(B) 50
(C) 220.5
(D) 90

19. The difference between maximum and minimum value of the data is known as:

[Dec. 2013]

(A) Range
(B) QD
(C) MD
(D) SD

20. Mean = 5, S.D. = 2.6, Median = 5, Q.D. = 1.5 then Coefficient of Q.D. is

(A) 15%
(B) 20%
(C) 30%
(D) 40%

21. Coefficient of mean deviation about mean for the first 9 natural numbers is:

(A) $\frac{40}{3}$
(B) $\frac{400}{9}$
(C) $\frac{40}{9}$
(D) $\frac{410}{3}$

22. If Arithmetic Mean = $\frac{8+4}{2}$, then variance is

(A) 2
(B) 3
(C) 4
(D) Can't say

23. The formula for range of middle 50% items of a series is

(A) L-5
(B) $(Q_3 - Q_1)/2$
(C) $Q_3 - Q_1$
(D) $Q_3 + Q_1$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

24. 1st Quartile is 142, Semi-Inter quartile range is 18. Then median is

(A) 150
(B) 160
(C) 165
(D) 170

25. Co-efficient of QD is equal to

(A) $\frac{Q_3-Q_1}{Q_3+Q_1} \times 100$
(B) $\frac{QD}{Median} \times 100$
(C) $\frac{Q_3-Q_1}{2}$
(D) Both (A) and (B)

26. If every observation is increased by 5 then

(A) SD increases by 5
(B) MD increased by 5
(C) QD increased by 5
(D) None is affected

27. The SD of x is known to be 10 then the SD of 50+5x is

(A) 100
(B) 60
(C) 50
(D) 5

28. Find the range of 6, 5, 4, 3, 1, 3, 6, 10, 8

(A) 7
(B) 8
(C) 9
(D) 10

29. Find the mean deviation about mean of 4, 5, 6, 8, 3

(A) 1.20
(B) 1.35
(C) 1.40
(D) 1.44

30. If V(x) = 23. Find variance of 2x+10

(A) 23
(B) 46
(C) 69
(D) 92

31. The average of numbers is 20 and their standard deviation 5. Find the two numbers?

(A) (10, 30)
(B) (15, 25)
(C) (12, 18)
(D) (15, 20)

32. If Variance = 125.6, $\bar{x} = 40$, coefficient of variation =

(A) 28.01
(B) 27.6
(C) 25.6
(D) 22.2

33. If same amount is added to or subtracted from all the value of the individual series then the standard deviation and variance both shall be

(A) Increase by same amount
(B) Decrease by same amount
(C) Remains unchanged
(D) May increase or decrease

34. The SD of first n natural numbers is ____

(A) $\sqrt{\frac{n^2+1}{6}}$
(B) $\sqrt{\frac{n^2-1}{12}}$
(C) $\sqrt{\frac{n^2+1}{12}}$
(D) $\sqrt{\frac{n^2-1}{6}}$

35. If mean and coefficient of variation of the marks of n students is 20 and 80 respectively. What will be variance of them

(A) 16
(B) 4
(C) 256
(D) 80

36. The AM and CV of a random variable x are 10 and 40 respectively, then the variance of $\left(-15+\frac{3x}{2}\right)$.

(A) $\frac{27}{2}$
(B) 36
(C) 6
(D) 4

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

37. Mean deviation is least when deviation are taken from

(A) Mean
(B) Median
(C) Mode
(D) None

38. If L_1 = highest observation and L_2 = smallest observation, then Coefficient of Range = **[Dec. 2009]**

(A) $\frac{L_1 \times L_2}{L_1 / L_2} \times 100$
(B) $\frac{L_1 - L_2}{L_1 + L_2} \times 100$
(C) $\frac{L_1 + L_2}{L_1 - L_2} \times 100$
(D) $\frac{L_1 / L_2}{L_1 \times L_2} \times 100$

39. The equation of a line is $5x + 2y = 17$. Mean deviation of y about mean is 5. Calculate mean deviation of x about mean.

(A) –2 **[Dec. 2009]**
(B) 2
(C) –4
(D) None

40. If variance of x is 5, then find the variance of (2 – 3x) **[Dec. 2009]**

(A) 10
(B) 45
(C) 5
(D) –13

41. The approximate ratio of SD, MD, QD is:

(A) 3 : 4 : 5 **[Nov. 2019]**
(B) 2 : 3 : 4
(C) 15 : 12 : 10
(D) 5 : 6 : 7

42. The deviations are minimum when taken from: **[Nov. 2019]**

(A) Mean
(B) Median
(C) Mode
(D) None

43. Origin is shifted by 5, what will happen

(A) SD will increase by 5 **[Nov. 2019]**
(B) QD will increase by 5
(C) MD will increase by 5
(D) There will be no change in SD

44. Coefficient of variation is equal to:

(A) $\frac{SD}{Mean}$ **[Nov.2019]**
(B) $\frac{SD}{Mean} \times 100$
(C) $\frac{Mean}{SD} \times 100$
(D) $\frac{Mean}{SD}$

45. Find SD of the following
1, 2, 3, 4, 5, 6, 7, 8, 9. **[Nov. 2019]**

(A) 2.58
(B) $\frac{60}{9}$
(C) $\frac{60}{3}$
(D) 3.20

46. If mean = 200 and variance = 80. Find coefficient of variation. **[Nov. 2019]**

(A) 2.56
(B) 4.47
(C) 32
(D) 0.32

47. Which of the following is affected by shifting of scale. **[Nov. 2019]**

(A) SD
(B) MD
(C) QD
(D) All of these

48. Coefficient of variation is 80. Mean is 20. Find variance: **[Nov. 2019]**

(A) 640
(B) 256
(C) 16
(D) 250

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

49. Difference between upper limit and lower limit of a class is known as. **[Nov.2019]**

(A) Range
(B) Class mark
(C) Class size
(D) Class boundary

50. SD from numbers 1, 4, 5, 7, 8 is 2.45. If 10 is added to each then SD will be: **[Nov.2019]**

(A) 12.45
(B) 24.5
(C) 12
(D) Will not change

51. Which of the following measure of dispersion is based on absolute deviations?

(A) Range **[Nov. 2020]**
(B) S.D
(C) Mean Deviation
(D) Quartile Deviation

52. The best statistical measure used for comparing two series is **[Jan. 2021]**

(A) Mean absolute deviation
(B) Range
(C) Coefficient of variation
(D) Standard deviation

53. The relationship between P-series and Q series is given by $2P - 3Q = 10$. If the range of P–Series is 18. What would be the range of Q? **[Jan. 2021]**

(A) 10
(B) 15
(C) 9
(D) 12

54. It is given that the mean ($\bar{X}$) is 10 and standard deviation (s.d.) is 3.2. If the observations are increased by 4, then the new mean and standard deviations are:

(A) $\bar{X} = 10, \text{s.d.} = 7.2$ **[Jan. 2021]**
(B) $\bar{X} = 10, \text{s.d.} = 3.2$
(C) $\bar{X} = 14, \text{s.d.} = 3.2$
(D) $\bar{X} = 14, \text{s.d.} = 7.2$

55. Which of the following is a relative measure of dispersion? **[Jan. 2021]**

(A) Range
(B) Mean deviation
(C) Standard deviation
(D) Coefficient of quartile deviation

56. Find the coefficient of mean deviation about mean for the data: 5, 7, 8, 10, 11, 13, 19

(A) 17.28 **[Jan. 2021]**
(B) 28.57
(C) 32.11
(D) 18.56

57. The Standard Deviation of the series 3, 6, 9, 12, 15 is: **[Sept. 2024]**

(A) 4.24
(B) 6.36
(C) 4.12
(D) 3.28

58. The standard deviation of 1 to 9 natural number is: **[July 2021]**

(A) 6.65
(B) 2.58
(C) 6.75
(D) 5.62

59. The probable value of mean deviation when $Q_3 = 40$ and $Q_1 = 15$ is: **[July 2021]**

(A) 15
(B) 18.75
(C) 17.50
(D) 0

60. If the numbers are 5, 1, 8, 7, 2 then the coefficient of variation is: **[July 2021]**

(A) 56.13%
(B) 59.13%
(C) 48.13%
(D) 44.13%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

61. If every observation is increased by 7 then: **[July 2021]**

(A) Standard deviation increased by 7

(B) Mean deviation increased by 7

(C) Not affected at all

(D) Quartile deviation increased by 7

62. If the relationship between x and y is given by $2x + 3y = 10$ and the range of y is 10, then what is the range of x?

(A) 10 **[July 2021]**

(B) 18

(C) 8

(D) 15

63. The mean deviation of the numbers 3, 10, 6, 11, 14, 17, 9, 8, 12 about the mean is (correct to one decimal place):

(A) 8.7 **[July 2021]**

(B) 4.2

(C) 3.1

(D) 9.8

64. The marks secured by 5 students in a subject are 82, 73, 69, 84, 66. What is the coefficient of Range **[Dec. 2021]**

(A) 0.12

(B) 12

(C) 120

(D) 0.012

65. For a data having odd number of values, the difference between the first and the middle value is equal to the difference between the last and the middle value; similarly the difference between the second and middle values is equal to that of second last and middle value so on. Therefore, the middle value is equal to **[Dec. 2021]**

(A) Half of the range

(B) Half of standard deviation

(C) Mode

(D) Mean

66. If the coefficient of variation and standard deviation are 30 and 12 respectively, then the arithmetic mean of the distribution is

(A) 40 **[Dec. 2022]**

(B) 36

(C) 25

(D) 19

67. _____ is based on all the observations and _____ is based on the centralfifty percent of the observations **[Dec. 2022]**

(A) Mean deviation, Range

(B) Mean deviation, quartile deviation

(C) Range, standard deviation

(D) Quartile deviation, standard deviation

68. Which one of the following is not a method of measures of dispersion? **[Dec. 2022]**

(A) Standard deviation

(B) Mean deviation

(C) Range

(D) Concurrent deviation method

69. Mean deviation is minimum when deviations are taken from: **[Dec. 2022]**

(A) Mean

(B) Median

(C) Mode

(D) Range

70. If the sum of square of the value equals to 3390, Number of observation are 30 and Standard deviation is 7, what is the mean value of the above observation? **[Dec. 2022]**

(A) 14

(B) 11

(C) 8

(D) 5

71. If the variance of random variable 'x' is 17, then what is variance of y=2x+5? **[Dec. 2022]**

(A) 34

(B) 39

(C) 68

(D) 78

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

72. If the variance of given data is 12, and their mean value is 40, what is coefficient of variation (CV)? **[Dec. 2022]**

(A) 5.66%
(B) 6.66%
(C) 7.50%
(D) 8.65%

73. In a given set if all data are of same value then variance would be: **[Dec. 2022]**

(A) 0
(B) 1
(C) –1
(D) 0.5

74. If the first quartile in 56.50 and the third quartile is 77.50 then the co-efficient of quartile deviation is **[Dec. 2022]**

(A) 618.09
(B) 15.67
(C) 63.80
(D) 156.71

75. A Professor has given assignment to students in a Statistics class. A student Jagan computes the arithmetic mean and standard deviation for a set of 100 observations as 50 and 5 respectively. Later on, Sonali points out to Jagan that he has made a mistake in taking one observation as 100 instead of 50. What would be the correct mean if the wrong observation is corrected? **[Jun. 2023]**

(A) 50.5
(B) 49.9
(C) 49.5
(D) 50.1

76. The mean deviation about the mean for the data 12, 16, 24, 30, 35, 39, 40 is **[Jun. 2023]**

(A) 9.14
(B) 9.41
(C) 8.91
(D) 9.81

77. If the Standard Deviation of data 2, 4, 5, 6, 8, 17 is 4.47, then Standard Deviation of the data 4, 8, 10, 12, 16, 34 is **[Jun. 2023]**

(A) 4.47
(B) 8.94
(C) 13.41
(D) 2.24

78. The mean and variance of a group of 100 observations are 8 and 9, respectively. Out of 100 observations, the mean and standard deviation of 60 observations are 10 and 2, respectively. Find the standard deviation of remaining 40 observations? **[Jun. 2023]**

(A) 4.5
(B) 3.5
(C) 2.5
(D) 1.5

79. For a given set of normally distributed data, the following statistical parameters are known: Mean = 6; Standard deviation = 2.6; Median = 5 and Quartile deviation = 1.5, then the coefficient of quartile deviation equals to **[Jun. 2023]**

(A) 30
(B) 32
(C) 25
(D) 39

80. If the first quartile is 42.75 and the third quartile is 74.25, then the coefficient of quartile deviation is: **[Jun. 2023]**

(A) 29.62
(B) 15.75
(C) 17.57
(D) 26.92

81. If the quartile deviation is 12 and the first quartile is 25, then the value of the third quartile is: **[Dec. 2023]**

(A) 37
(B) 49
(C) 61
(D) 60

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

82. In a Standard Normal distribution, then the value of the mean (μ) and standard deviation (σ) is: **[Dec. 2023]**

(A) $\mu=0$ and $\sigma=0$
(B) $\mu=0$ and $\sigma=1$
(C) $\mu=1$ and $\sigma=0$
(D) $\mu=1$ and $\sigma=1$

83. If 'x' and 'y' are related as 3x – 4y = 20 and the quartile deviation of 'x' is 12, then the quartile deviation of 'y' is: **[Dec. 2023]**

(A) 9
(B) 8
(C) 7
(D) 6

84. If the range of a data is 20 and its smallest value is 5, then what is the largest value of data is? **[Dec. 2023]**

(A) 20
(B) 25
(C) 5
(D) 30

85. If 'x' and 'y' are independent normal variate with mean and Standard deviation μ_1,μ_2 and σ_1,σ_2 respectively, then for z = x + y which also follows normal distribution mean and SD are: **[Dec. 2023]**

(A) Mean $= \mu_1+\mu_2$, SD $= \sqrt{\sigma_1^2+\sigma_2^2}$

(B) Mean $= \frac{(\mu_1+\mu_2)}{2}$, SD $= \frac{\sqrt{(\sigma_1^2+\sigma_2^2)}}{2}$

(C) Mean $= \mu_1-\mu_2$, SD $= \sqrt{\sigma_1^2-\sigma_2^2}$

(D) Mean $= \frac{(\mu_1-\mu_2)}{2}$, SD $= \sqrt{\frac{\sigma_1^2-\sigma_2^2}{2}}$

86. A perpendicular drawn from the point of intersection of two Ogive on the horizontal axis gives the value of **[Dec. 2023]**

(A) 2nd Quartile
(B) 3rd Quartile
(C) Mode
(D) 1st Quartile

87. If x and y are related as 4x+3y+11=0 and mean deviation of y is 7.20 , what is the mean deviation of x? **[June. 2023]**

(A) 2.70
(B) 7.20
(C) 4.50
(D) 5.40

88. For the first 20 natural numbers the standard deviation is _____ **[Jun. 2024]**

(A) 5.77
(B) 7.75
(C) 5.64
(D) 6.54

89. If Mean Deviation about Arithmetic Mean is 1.78 and Arithmetic Mean is 3.50 then coefficient of Mean Deviation about Arithmetic Mean is **[Jun. 2024]**

(A) 50.85
(B) 44.33
(C) 52.65
(D) 51.85

90. If Arithmetic Mean and coefficient of variation of y are 5 and 20 respectively, the variance of 12 – 3y **[Jun. 2024]**

(A) 9
(B) 81
(C) 3
(D) 100

91. Consider the data sets : x = (-6, 2, -2, 6) Y = (4, 8, 2, 6), Z = (103, 100, 102, 101). Let S_X, S_Y and S_Z be the standard deviations of the sets X, Y and Z respectively. We have the relations. **[Jun. 2024]**

(A) $S_X<S_Y<S_Z$
(B) $S_Z<S_Y<S_X$
(C) $S_Z<S_X<S_Y$
(D) $S_X<S_Z<S_Y$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

92. If in a data set, 25 percent of values are smaller than 30 and one-fourth of values are larger than 70, then the coefficient of quartile deviation is _____%. **[Jun. 2024]**

(A) 40
(B) 30
(C) 70
(D) 50

93. What is the range of a data set? **[Sept. 2024]**

(A) The difference between the highest and lowest values in the data set
(B) The difference between the mean and median of the data set
(C) The number of data points in the data set
(D) The standard deviation of the data set

94. What is the coefficient of range for the observations 20, 28, 32, 41, 48, 60? **[Sept. 2024]**

(A) 50
(B) 20
(C) 40
(D) 200

95. In which of the following there is no impact of presence of extreme observations? **[Sept. 2024]**

(A) Quartile deviation
(B) Range
(C) Standard deviation
(D) Variance

96. If each observation of a set is divided by 10, then the Standard Deviation of the new observation is: **[Sept. 2024]**

(A) $\frac{1}{10}$ th of Standard Deviation of original observation.
(B) $\frac{1}{100}$ th of Standard Deviation of original observation.
(C) 100 times of Standard Deviation of original observation.
(D) 10 times of Standard Deviation of original observation.

97. If x and y are related as $4x + 2y + 12 = 0$ and mean deviation of x is 4.5, then the mean deviation of y is **[Jan. 2025]**

(A) –9
(B) 9
(C) 1.1
(D) 4.5

98. For a distribution the mean is 30. The standard deviation is 2, then coefficient of variation is **[Jan. 2025]**

(A) 6.67%
(B) 9.45%
(C) 7.5%
(D) 2.5%

99. Ogive is used to find **[Jan. 2025]**

(A) Mean
(B) Median
(C) Mode
(D) Range

100. The algebraic sum of deviation of set of observations from their arithmetic mean is

(A) $\frac{\Sigma x_i}{n}$ **[Jan. 2025]**
(B) $\sqrt{\frac{\Sigma(x_i - \bar{x})^2}{(n-1)}}$
(C) $\frac{\Sigma x_i}{(n-1)}$
(D) Zero

101. The standard deviation of the data 2, 4, 5, 6, 8, 17 is 23.33, then the standard deviation of the data 4, 8, 10, 12, 16, 34 is **[Jan. 2025]**

(A) 23.33
(B) 46.66
(C) 12.23
(D) 0

102. The values of the first quartile and third quartile are 36.50 and 57.50. Then the semi-inter-quartile range is **[Jan. 2025]**

(A) 47.50
(B) 12.50
(C) 10.50
(D) 11.50

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY									
1.	B	2.	C	3.	B	4.	B	5.	B
6.	B	7.	D	8.	D	9.	C	10.	A
11.	D	12.	C	13.	A	14.	A	15.	C
16.	D	17.	B	18.	A	19.	A	20.	C
21.	B	22.	C	23.	C	24.	B	25.	D
26.	D	27.	C	28.	C	29.	D	30.	D
31.	B	32.	A	33.	C	34.	B	35.	C
36.	B	37.	B	38.	B	39.	B	40.	B
41.	C	42.	B	43.	D	44.	B	45.	A
46.	B	47.	D	48.	B	49.	C	50.	D
51.	C	52.	C	53.	D	54.	C	55.	D
56.	C	57.	A	58.	B	59.	A	60.	B
61.	C	62.	D	63.	C	64.	B	65.	D
66.	A	67.	B	68.	D	69.	B	70.	C
71.	C	72.	D	73.	A	74.	B	75.	C
76.	A	77.	B	78.	D	79.	A	80.	D
81.	B	82.	B	83.	A	84.	B	85.	A
86.	A	87.	D	88.	A	89.	A	90.	A
91.	B	92.	A	93.	A	94.	A	95.	A
96.	A	97.	B	98.	A	99.	B	100.	D
101.	B	102.	C						

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CHAPTER – 11
PROBABILITY

1. x: 1, 2, 3, 4, 5 P(x) = 0.1, 0.4, 0.2, 0.1, 0.2 then is $E(x^2)$

(A) 9.5
(B) 10.1
(C) 8.8
(D) 7.6

2. If a card is chosen from pack of 52 card then what is probability of getting a king or jack.

(A) $\frac{5}{13}$
(B) $\frac{7}{26}$
(C) $\frac{2}{13}$
(D) $\frac{7}{13}$

3. P(A) = 2 P(B) = 3 P(C) find P(A)

(A) $\frac{1}{6}$
(B) $\frac{3}{11}$
(C) $\frac{6}{11}$
(D) $\frac{9}{11}$

4. Out of 125 students, 70 pass in Maths, 55 pass in Stats, 30 pass in both. What is the probability that a student failed in both the subjects.

(A) 0.20
(B) 0.15
(C) 0.36
(D) 0.24

5. In a race probability of winning is 7/11. Find the expected value, if the prize is 66 Rs.

(A) 66
(B) 42
(C) 49
(D) 60

6. There are 4 Boys and 2 Girls in Group 1, 3 Boys and 1 Girls in Group 2. What is the probability of 1 Boy and 1 Girl in the committee of 2 students.

(A) $\frac{7}{15}$
(B) $\frac{23}{30}$
(C) $\frac{5}{18}$
(D) $\frac{8}{15}$

7. If 3 coins are tossed and E is an event of 3 heads, F is an event of least 1 head the P(E)/P(F) is

(A) $\frac{1}{8}$
(B) $\frac{7}{8}$
(C) $\frac{1}{7}$
(D) $\frac{2}{7}$

8. If 2 Jokers are added to a pack of 52 playing cards, what is probability of drawing a king of spade? **[June 2010]**

(A) $\frac{13}{54}$
(B) $\frac{13}{52}$
(C) $\frac{1}{54}$
(D) $\frac{1}{52}$

9. If two dices are thrown, what is the probability of getting 1 on one dice

(A) $\frac{1}{6}$
(B) $\frac{7}{18}$
(C) $\frac{5}{36}$
(D) $\frac{5}{18}$

10. If two coins are tossed what is the probability of getting at least 1 head?

(A) $\frac{3}{4}$
(B) $\frac{1}{2}$
(C) $\frac{1}{4}$
(D) $\frac{1}{3}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

11. Odd in favour of a solving the problem is 5:7 and odds against B solving the problem is 9:6. What the probability of problem being solved if they both try. **[Dec. 2010]**

(A) 0.50
(B) 0.65
(C) 0.83
(D) 0.40

12. In a bag containing 12 balls, 3 are red. If 5 balls are drawn what is the probability of getting 3 red balls? **[June 2009]**

(A) $\frac{3}{22}$
(B) $\frac{1}{22}$
(C) $\frac{1}{11}$
(D) $\frac{5}{11}$

13. If A and B are independent Events then find P(A) if P (A∪B) = 2/3, P(B) = 2/5.

(A) $\frac{4}{9}$
(B) $\frac{4}{15}$
(C) $\frac{2}{9}$
(D) $\frac{2}{15}$

14. X : 0, 1, 2, 3 find P (x>2)

(A) $\frac{1}{2}$
(B) $\frac{3}{4}$
(C) $\frac{1}{4}$
(D) $\frac{1}{3}$

15. If three balls are drawn randomly from a bag containing 5 white, 3 red and 2 black balls then what is the probability of getting all 3 white ball? **[Dec. 2009]**

(A) $\frac{5}{12}$
(B) $\frac{3}{12}$
(C) $\frac{1}{12}$
(D) $\frac{7}{12}$

16. P(A) = 1/3 P(B) = 1/4, P(A∩B) = 1/6 find P(B/A)

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $\frac{2}{3}$
(D) $\frac{1}{4}$

17. P(A∩B) = P(A). P(B) then events A and B are

(A) Mutually Exclusive
(B) Independent
(C) Exhaustive
(D) Dependent

18. E (x+y) is

(A) E(x) + E(y)
(B) E (xy)
(C) E $\left(\frac{x}{y}\right)$
(D) None of these

19. E(13x+9) is **[June 2010]**

(A) 9 E(x)+13
(B) 13 E(x)
(C) E(x) + 9
(D) 13 E(x) + 9

20. If one bag contains 3 white and 5 black balls and other bag contains 4 white and 2 black balls. If one ball is taken from each bag, what is the probability of both being white. **[Dec. 2010]**

(A) $\frac{1}{2}$
(B) $\frac{3}{4}$
(C) $\frac{1}{4}$
(D) $\frac{2}{3}$

21. If P(A/B) = P(A) then A and B are **[Dec. 2010]**

(A) Not defined
(B) Independent
(C) Mutually Exclusive
(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

22. Bag I contains : 2 White and 3 Black balls, Bag II contains : 4 White and 6 Black balls. If one ball is taken from I bag and put in II. What is the probability of getting a white ball from II bag. **[Dec. 2010]**

(A) $\frac{2}{3}$

(B) $\frac{1}{5}$

(C) $\frac{3}{4}$

(D) $\frac{2}{5}$

23. If a dice is rolled once find mathematical expectation **[Dec. 2010]**

(A) 3

(B) 3.5

(C) 4

(D) 6

24. Exactly 3 girls are to be selected from 5 girls and 3 boys. The probability of selecting 3 girls will be **[June 2011]**

(A) $\frac{1}{28}$

(B) $\frac{7}{28}$

(C) $\frac{5}{28}$

(D) $\frac{3}{28}$

25. If $P(A \cup B) = P(A)$. Find $P(A \cap B)$

(A) P(A) **[June 2011]**

(B) P(B)

(C) ∅

(D) P(A)P(B)

26. A Bag contains 5 Red balls, 4 Blue balls and 'm' Green balls. If the random probability of picking two green balls is 1/7. What is the number of green balls (m) **[June 2011]**

(A) 5

(B) 6

(C) 7

(D) 8

27. The probability of Girl getting scholarship is 0.6 and the same probability for Boys is 0.8. Find the probability that at least one of the categories getting scholarship.

(A) 0.87 **[June 2011]**

(B) 0.98

(C) 0.92

(D) 0.74

28. A coin is tossed 5 times, what is the probability that exactly 3 heads will occur.

(A) $\frac{3}{16}$ **[June 2011]**

(B) $\frac{1}{16}$

(C) $\frac{7}{16}$

(D) $\frac{5}{16}$

29. Two unbiased dice are thrown. The expected value of the sum of numbers on the upper side is **[Dec. 2011]**

(A) 3.5

(B) 7

(C) 10.5

(D) 14

30. One card is drawn from pack of 52, what is the probability that it is a king or a queen? **[Dec. 2011]**

(A) $\frac{4}{13}$

(B) $\frac{2}{13}$

(C) $\frac{5}{13}$

(D) $\frac{8}{49}$

31. In a packet of 500 pens, 50 are found to be defective. A pen is selected at random. Find the probability that it is not defective. **[Dec. 2011]**

(A) $\frac{1}{10}$

(B) $\frac{9}{10}$

(C) $\frac{1}{2}$

(D) None of these

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

32. Four married couples have gathered in a room. Two persons are selected at random amongst them; find the probability that selected persons are a gentleman and a lady but not a couple. **[Dec. 2011]**

(A) $\frac{1}{16}$
(B) $\frac{3}{16}$
(C) $\frac{3}{7}$
(D) $\frac{5}{7}$

33. A team of 5 is to be selected from 8 boys and three girls. Find the probability that it includes two particular girls. **[Dec. 2011]**

(A) $\frac{21}{55}$
(B) $\frac{2}{11}$
(C) $\frac{9}{22}$
(D) $\frac{17}{22}$

34. Arun and Tarun appear for an interview for 2 vacancies. The probability of Arun's selection is 1/3 and that of Tarun's selection is 1/5. Find the probability that only one of them will be selected. **[June 2012]**

(A) $\frac{1}{5}$
(B) $\frac{3}{5}$
(C) $\frac{2}{5}$
(D) $\frac{4}{5}$

35. A Card is drawn out of standard pack of 52 cards. What is probability that it is a king or red colour? **[June 2012]**

(A) $\frac{7}{13}$
(B) $\frac{9}{13}$
(C) $\frac{5}{13}$
(D) $\frac{2}{13}$

36. If a coin is tossed twice, we get 5 if two heads appear, Rs. 2 if one head appear, Rs. 1 if no head appear then the expected income is **[June 2012]**

(A) Rs. 2
(B) Rs. 2.5
(C) Rs. 3
(D) Rs. 4

37. The odds against A Solving a problem are 4:3 and the odds in favour of B solving the same problem are 7:5. What is the probability that the problem will be solved if they both try? **[Dec. 2012]**

(A) $\frac{5}{21}$
(B) $\frac{5}{12}$
(C) $\frac{10}{21}$
(D) $\frac{16}{21}$

38. A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball from the bag is twice that of drawing red ball. Find the number of blue balls in the bag

(A) 3 **[Dec. 2012]**
(B) 12
(C) 9
(D) None of these

39. If two dice are thrown then the probability of getting multiple of 3 on one die and multiple of 2 on other die are

(A) $\frac{1}{2}$ **[Dec. 2012]**
(B) $\frac{1}{4}$
(C) $\frac{11}{36}$
(D) $\frac{7}{18}$

40. Find the expected value of the following probability distribution **[Dec. 2012&13]**

X	-20	-10	30	75	80
P(x)	3/20	1/5	1/2	1/10	1/20

(A) 18
(B) 20
(C) 21.5
(D) 32.5

41. The odds that a book will be reviewed favorably by 3 independent critics are 5 to 2, 3 to 4, 4 to 3 respectively, then the probability that out of 3 critics the majority will be favourable is _____. **[June 2013]**

(A) $\frac{209}{343}$
(B) $\frac{60}{343}$
(C) $\frac{129}{343}$
(D) $\frac{173}{343}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

42. Find the probability of drawing spade on each of 2 consecutive draws from a well shuffled pack of cards when the drawn are without replacement. **[June 2013]**

(A) $\frac{1}{221}$

(B) $\frac{1}{17}$

(C) $\frac{1}{16}$

(D) $\frac{1}{96}$

43. A bag contains 3 red, 3 green and 2 blue balls. If 2 balls are drawn at random from the bag find the probability that none of them will be blue. **[June 2013]**

(A) $\frac{10}{21}$

(B) $\frac{10}{27}$

(C) $\frac{15}{28}$

(D) $\frac{15}{26}$

44. A player tosses 3 coins. He wins Rs. 5 if 3 heads appear, Rs. 3 if two heads appear Rs. 1 if one head appear and a loss of Rs. 15 if no head appear. Find his expected gain in Rs. _____. **[June 2013]**

(A) Rs. 2

(B) Rs. 1

(C) Rs. 0.50

(D) Rs. 0.25

45. If P(A) = 0.45, P(B) = 0.35, P(A and B) = 0.25 the P(A/B) = **[Dec. 2013]**

(A) $\frac{5}{9}$

(B) $\frac{5}{7}$

(C) $\frac{7}{9}$

(D) None of these

46. Two coins are tossed simultaneously then the probability of getting exactly one head is **[Dec. 2013]**

(A) $\frac{1}{4}$

(B) $\frac{1}{2}$

(C) $\frac{3}{4}$

(D) None of these

47. The probability that a cricket team winning a match at Kanpur is 2/5 and losing a match at Delhi is 1/7. What is the probability of the team winning at least one match? **[Dec. 2013]**

(A) $\frac{17}{35}$

(B) $\frac{32}{35}$

(C) $\frac{11}{35}$

(D) $\frac{21}{35}$

48. For any two events A1, A2 $P(A_1) = \frac{2}{3}$, $P(A_1 \cap A_2) = \frac{1}{4}$ then A1 and A2 can be **[June 2014]**

(A) Mutually Exclusive and Independent

(B) Independent but not Mutually Exclusive

(C) Mutually Exclusive and Dependent

(D) Neither Mutually Exclusive nor Independent

49. If a pair of dice is thrown what is the probability of sum of neither 7 nor 11? **[June 2014]**

(A) $\frac{2}{9}$

(B) $\frac{4}{9}$

(C) $\frac{5}{9}$

(D) $\frac{7}{9}$

50. An urn contains 2 red and 1 green balls; another urn contains 2 red and 2 green balls. An urn was selected at random and then a ball was drawn from it. If it was found to be red then the probability that it has been drawn from first urn is **[June 2014]**

(A) $\frac{2}{5}$

(B) $\frac{3}{7}$

(C) $\frac{4}{7}$

(D) $\frac{3}{5}$

51. A die is thrown twice then the probability that the sum of the numbers is divisible by 4 is **[Dec.2014]**

(A) $\frac{1}{3}$

(B) $\frac{1}{4}$

(C) $\frac{1}{2}$

(D) $\frac{2}{3}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

52. A random variable x takes three values -1, 2, 3 with the respective probabilities P(-1) = 1/3, P(2) = 1/3, P(3) = 1/3 then E(x) is

(A) 1.33 **[Dec. 2014]**
(B) 2
(C) 1.5
(D) 2.5

53. There are 6 positive and 8 negative numbers. Four numbers are selected at random without replacement and multiplied. Find the probability that the product is positive. **[June 2015]**

(A) $\frac{505}{1001}$
(B) $\frac{629}{1001}$
(C) $\frac{425}{1001}$
(D) None of these

54. $P(A_1) = 3/8$: $P(A_2) = 2/3$; $P(A_1 \cap A_2) = 1/4$ will be **[June 2014&15]**

(A) Mutually exclusive and independent
(B) Exclusive but not independent
(C) Independent but not mutually exclusive
(D) None of these

55. The sum of two numbers obtained in a single throw of two dice is 'S'. The probability of 'S' will be maximum when 'S'/

(A) 5 **[June 2015]**
(B) 6
(C) 7
(D) 8

56. An unbiased coin is tossed 3 times, expected value of the number of heads is **[June 2015]**

(A) 1
(B) 2
(C) 1.5
(D) 0.5

57. When an unbiased dice is rolled, find the odds in favour of getting of multiple of 3.

(A) 2:3 **[June & Dec. 2015]**
(B) 2:1
(C) 3:2
(D) 1:2

58. Three coins are rolled. What is the probability of getting exactly two heads.

(A) $\frac{1}{8}$ **[Dec. 2015]**
(B) $\frac{1}{2}$
(C) $\frac{3}{8}$
(D) $\frac{5}{8}$

59. Two letter are drawn at random from word "HOME" find the probability that there is not vowel. **[Dec. 2015]**

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $\frac{1}{6}$
(D) $\frac{2}{3}$

60. A bag contains 15 one rupee coins, 25 two rupee coins and 10 five rupee coins. If a coin is selected at random from the bag, then the probability of not selecting a one rupee coin is: **[Dec. 2015]**

(A) $\frac{3}{10}$
(B) $\frac{7}{10}$
(C) $\frac{2}{5}$
(D) $\frac{3}{5}$

61. If $P(A) = \frac{2}{3}$, $P(B) = \frac{3}{5}$, $P(A \cup B) = \frac{5}{6}$, then $P\left(\frac{A}{B}\right)$ **[Dec. 2009 & June 2016]**

(A) $\frac{3}{7}$
(B) $\frac{5}{7}$
(C) $\frac{5}{12}$
(D) $\frac{13}{18}$

62. Two dice are tossed what is the probability that the total is divisible by 3 or 4.

(A) $\frac{5}{9}$ **[June 2016]**
(B) $\frac{5}{12}$
(C) $\frac{3}{7}$
(D) $\frac{2}{7}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

63. If 2 dice are rolled simultaneously then the probability that their sum is neither 3 nor 6 is **[June 2016]**

(A) $\frac{7}{36}$

(B) $\frac{13}{36}$

(C) $\frac{23}{36}$

(D) $\frac{29}{36}$

64. In a game, cards are thoroughly shuffled and distributed equally among four players. What is the probability that a specific player gets all the four kings? **[June 2016]**

(A) $\frac{48c_9}{52c_{13}} \times 4$

(B) $\frac{48c_9}{52c_{13}}$

(C) $\frac{48c_{13}}{52c_{13}} \times 4$

(D) $\frac{48c_{13}}{52c_{13}} \times 4$

65. A bag contains 4 red and 5 black balls. Another bag contains 5 red, 3 black balls. If one ball is drawn at random from each bag. Then the probability that one red and one black ball drawn is _____. **[Nov. 2018 & June 2016]**

(A) $\frac{44}{72}$

(B) $\frac{37}{72}$

(C) $\frac{41}{72}$

(D) $\frac{29}{72}$

66. A bag contains 6 green and 5 red balls. One ball is drawn at random. The probability of getting a red ball is? **[Dec. 2016]**

(A) $\frac{5}{11}$

(B) $\frac{6}{11}$

(C) $\frac{5}{9}$

(D) $\frac{7}{9}$

67. If $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$, $P(A \cup B) = \frac{2}{3}$ then the $P(A \cap B)$? **[Dec. 2016]**

(A) $\frac{2}{3}$

(B) $\frac{1}{6}$

(C) $\frac{1}{2}$

(D) $\frac{2}{3}$

68. If $P(A) = \frac{2}{3}$, $P(B) = \frac{3}{8}$, $P(A \cap B) = \frac{1}{4}$ then the event A and B are _____. **[Dec. 2016]**

(A) Mutually Exclusive

(B) Independent

(C) Impossible

(D) None of these

69. The probability of getting at least one 6 form 3 thrown of a perfect die is **[June 2017]**

(A) $\frac{107}{216}$

(B) $\frac{97}{216}$

(C) $\frac{95}{216}$

(D) $\frac{91}{216}$

70. For any two event A and B **[June 2017]**

(A) P(A-B) = P(A)–P(B)

(B) P(A-B) = $P(A \cap B)$

(C) P(A-B) = P(B) – $P(A \cap B)$

(D) P(B-A) = P(B)–$P(A \cap B)$

71. If $P(A) = \frac{2}{3}$, $P(B) = \frac{1}{4}$, $P(A \cap B) = \frac{1}{12}$ then $P\left(\frac{A}{B}\right)$ = **[June 2017]**

(A) $\frac{1}{8}$

(B) $\frac{7}{8}$

(C) $\frac{1}{3}$

(D) $\frac{3}{8}$

72. For the events A and B if $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$, $P(A \cap B) = \frac{1}{4}$ then $P\left(\frac{A}{B}\right)$ = **[Dec. 2016&17]**

(A) $\frac{3}{4}$

(B) $\frac{1}{4}$

(C) $\frac{5}{8}$

(D) $\frac{3}{8}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

73. If A and B are two mutually exclusive events such $P(A \cup B) = \frac{2}{3}$, P(A) = $\frac{2}{5}$, then P(B) = **[Dec. 2017]**

(A) $\frac{5}{9}$

(B) $\frac{4}{9}$

(C) $\frac{4}{15}$

(D) $\frac{11}{15}$

74. If a brother and sister are applied for 2 vacancies in the same post, the probability that brother will select is 1/7 and that if sister is 1/5, then the probability that only one of them will be selected is **[Dec. 2017]**

(A) $\frac{2}{7}$

(B) $\frac{3}{7}$

(C) $\frac{5}{7}$

(D) $\frac{1}{7}$

75. The distribution of demand is as follows

[Dec. 2017]

Demand	5	6	7	8	9	10
Probability	0.05	0.1	0.3	0.4	0.1	0.05

Then mean is given by

(A) 6.90

(B) 7.55

(C) 8.20

(D) 7.80

76. If A and B are two independent events and $P(A \cup B) = \frac{2}{5}; P(B) = \frac{1}{3}$. Find P(A).

[June 2009]

(A) $\frac{2}{9}$

(B) $\frac{-1}{3}$

(C) $\frac{2}{10}$

(D) $\frac{1}{10}$

77. A random variable X has the following probability distribution.

X	0	1	2	3
P(x)	0	2K	3K	K

Then, P (x < 3) would be: **[June 2009]**

(A) $\frac{1}{6}$

(B) $\frac{1}{3}$

(C) $\frac{2}{3}$

(D) $\frac{5}{6}$

78. If $P(A \cap B) = P(A) \times P(B)$, then the events are: **[Dec. 2009]**

(A) Independent events

(B) Mutually exclusive events

(C) Exhaustive events

(D) Mutually inclusive events

79. E (XY) is also known as: **[Dec. 2009]**

(A) E (X) + E (Y)

(B) E (X) E (Y)

(C) E (X) – E (Y)

(D) E (X) ÷ E (Y)

80. Consider two events A and B not mutually exclusive, such that $P(A) = \frac{1}{4}$, $P(B) = \frac{2}{5}$, $P(A \cup B) = \frac{1}{2}$, then P $(A \cap B)$ is

[June 2010]

(A) $\frac{3}{7}$

(B) $\frac{2}{10}$

(C) $\frac{1}{10}$

(D) None of the above

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

81. If x be the sum of two numbers obtained when two die are thrown simultaneously then $P(x \geq 7)$ is **[June 2010]**

(A) $\frac{5}{12}$

(B) $\frac{7}{12}$

(C) $\frac{11}{15}$

(D) $\frac{3}{8}$

82. A dice is thrown once. What is the mathematical expectation of the number on the dice? **[Dec. 2010]**

(A) $\frac{16}{6}$

(B) $\frac{13}{2}$

(C) 3.5

(D) 4.5

83. Let A and B two events in a sample space S such that $P(A) = \frac{1}{2}$; $P(B) = \frac{5}{8}$, $P(A \cup B) = \frac{3}{4}$; Find $P(A \cap B)$ **[June 2012]**

(A) $\frac{3}{4}$

(B) $\frac{1}{4}$

(C) $\frac{3}{16}$

(D) None of these

84. The probability of selecting a sample of size 'n' out of a population of size N by simple random sampling with replacement is:

(A) $\frac{1}{N}$ **[June 2013]**

(B) $\frac{1}{N^n}$

(C) $\frac{1}{{}^{N}C_{n}}$

(D) $\frac{1}{N_{C_n} n!}$

85. Let the distribution function of a random variable X be $F(X) = P(X \leq X)$. Then F(5) – F (2) is: **[Dec. 2014]**

(A) $P(2 < X < 5)$

(B) $P(2 \leq X < 5)$

(C) $P(2 \leq X \leq 5)$

(D) $P(2 < X \leq 5)$

86. If $P(A) = \frac{2}{3}, P(B) = \frac{3}{5}$ and $P(A \cup B) = \frac{5}{6}$ then $P\left(\frac{A}{B'}\right)$ is **[June 2016]**

(A) $\frac{7}{12}$

(B) $\frac{5}{12}$

(C) $\frac{1}{4}$

(D) $\frac{1}{2}$

87. Two broad divisions of probability are: **[May 2018]**

(A) Subjective probability and objective probability

(B) Deductive probability and mathematical probability

(C) Statistical probability and mathematical probability

(D) None of these

88. The term "chance" and probability are synonyms: **[May 2018]**

(A) True

(B) False

(C) Both

(D) None

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

89. The theorem of compound probability states that for any two events A and B [May 2018]

(A) $P(A \cap B) = P(A) \times P\left(\frac{B}{A}\right)$

(B) $P(A \cup B) = P(A) \times P\left(\frac{B}{A}\right)$

(C) $P(A \cap B) = P(A) \times P(B)$

(D) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

90. If $Y \geq x$ then mathematical expectation is [June 2019]

(A) $E(X) > E(Y)$

(B) $E(X) \leq E(Y)$

(C) $E(X) = E(Y)$

(D) $E(X) \cdot E(Y) = 1$

91. Two event A and B are such that they do not occurs simultaneously then they are called _____ events [June 2019]

(A) Mutually exhaustive

(B) Mutually exclusive

(C) Mutually independent

(D) Equally likely

92. A box contains shoe pairs of same pattern of different sizes numbered from 1 to 12. If a shoe pair is selected at random, what is the probability that the number on the shoe pair will be a multiple of 5 or 6? [Sept. 2024]

(A) 0.33

(B) 0.25

(C) 0.20

(D) 0,375

93. If a coin is tossed 5 times then the probability of getting Tail and Head occurs alternatively is [June 2019]

(A) $\frac{1}{8}$

(B) $\frac{1}{16}$

(C) $\frac{1}{32}$

(D) $\frac{1}{64}$

94. When 2 dice are thrown Simultaneously then the probability of getting at least one 5 is

(A) $\frac{11}{36}$ [June 2019]

(B) $\frac{5}{36}$

(C) $\frac{8}{15}$

(D) $\frac{1}{7}$

95. Two letters are choosen from the word HOME. What is the probability that the letters choosen are not vowels.

(A) $\frac{1}{2}$ [Nov. 2019]

(B) $\frac{1}{6}$

(C) $\frac{2}{3}$

(D) 0

96. If A, B, C are three mutually exclusive and exhaustive events such that:

$P(A) = 2P(B) = 3P(C)$ what is $P(B)$?

(A) $\frac{6}{11}$ [Nov. 2019]

(B) $\frac{3}{11}$

(C) $\frac{1}{6}$

(D) $\frac{1}{3}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

97. What is the probability of getting 7 or 11 when two dices are thrown? **[Nov. 2019]**

(A) $\frac{2}{9}$

(B) $\frac{6}{36}$

(C) $\frac{10}{36}$

(D) $\frac{2}{36}$

98. A bag contains 15 one rupee Coins, 25 two rupee coins if a coin is selected at random than probability for not selecting a one rupee coin is: **[Nov. 2019]**

(A) 0.30

(B) 0.20

(C) 0.25

(D) 0.625

99. What is the probability of occurring 4 or more than 4 accidents. **[Nov. 2019]**

No. of acc.	1	2	3	4	5	6	7
Frequency	8	17	15	24	27	18	9

(A) 24/118

(B) 69/118

(C) 78/118

(D) 80/118

100. When 2 fair dice are thrown what is the probability of getting the sum which is a multiple of 3? **[Nov. 2020]**

(A) $\frac{4}{36}$

(B) $\frac{13}{36}$

(C) $\frac{2}{36}$

(D) $\frac{12}{36}$

101. When two coins are tossed simultaneously the probability of getting at least one tail? **[Nov. 2020]**

(A) 1

(B) 0.75

(C) 0.5

(D) 0.25

102. When 3 dice are rolled simultaneously the probability of a number on the third die is greater than the sum of the numbers on two dice. **[Nov. 2020]**

(A) $\frac{12}{216}$

(B) $\frac{36}{216}$

(C) $\frac{48}{216}$

(D) $\frac{20}{216}$

103. If A speaks 75% of truth and B speaks 80% of truth. In what percentage both of them likely contradict with each other in narrating the same questions? **[Nov. 2020]**

(A) 0.60

(B) 0.45

(C) 0.65

(D) 0.35

104. An event that can be subdivided into further events is called as. **[Jan. 2021]**

(A) A composite event

(B) A complex event

(C) A mixed event

(D) A simple event

105. Three identical and balanced dice are rolled. The probability that the same number will appear on each of them is.

(A) $\frac{1}{6}$ **[Jan. 2021]**

(B) $\frac{1}{18}$

(C) $\frac{1}{36}$

(D) $\frac{1}{24}$

106. A basket contains 15 white balls, 25 red balls and 10 blue balls. If a ball is selected at random, the probability of selecting not a white ball. **[Jan. 2021]**

(A) 0.20

(B) 0.25

(C) 0.60

(D) 0.70

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

107. Two dice are thrown simultaneously. The probability of a total score of 5 from the out comes of dice is **[Jan. 2021]**

(A) $\frac{1}{18}$

(B) $\frac{1}{12}$

(C) $\frac{1}{9}$

(D) $\frac{2}{5}$

108. If an unbiased coin is tossed twice, then the probability of obtaining at least one tail is

(A) 1 **[Jan. 2021]**

(B) 0.5

(C) 0.75

(D) 0.25

109. If an unbiased coin is tossed three times, what is the probability of getting more than one head? **[Jan. 2021]**

(A) $\frac{1}{2}$

(B) $\frac{3}{8}$

(C) $\frac{7}{8}$

(D) $\frac{1}{3}$

110. If there are 48 marbles market with numbers 1 to 48, then the probability of selecting a marble having the number divisible by 4 is: **[July 2021]**

(A) $\frac{1}{2}$

(B) $\frac{2}{3}$

(C) $\frac{1}{3}$

(D) $\frac{1}{4}$

111. A bag contains 7 blue and 5 Green balls. One ball is drawn at random. The probability of getting a blue ball is ____. **[July 2021]**

(A) $\frac{5}{12}$

(B) $\frac{12}{35}$

(C) $\frac{7}{12}$

(D) 0

112. The probability that a football team loosing a match at Kolkata is $\frac{3}{5}$ and winning a match at Bengaluru is $\frac{6}{7}$; is probability of the team winning at least one match is _____. **[July 2021]**

(A) $\frac{3}{35}$

(B) $\frac{18}{35}$

(C) $\frac{32}{35}$

(D) $\frac{17}{35}$

113. If in a class, 60% of the student study. Mathematics and science and 90% of the student study science, then the probability of a student studying mathematics given that he/she is already studying science is: **[July 2021]**

(A) $\frac{1}{4}$

(B) $\frac{2}{3}$

(C) 1

(D) $\frac{1}{2}$

114. A biased coin is such that the probability of getting a head is thrice the probability of getting a tail, if the coin is tossed 4 times, what is the probability of getting a head all the times? **[July 2021]**

(A) $\frac{2}{5}$

(B) $\frac{81}{128}$

(C) $\frac{81}{256}$

(D) $\frac{81}{64}$

115. If there are 16 phones, 10 of them are Android and 6 of them are of Apple, then the probability of 4 randomly selected phones to include 2 Android and 2 Apple phone is: **[July 2021]**

(A) 0.47

(B) 0.51

(C) 0.37

(D) 0.27

116. The value of K for the probability density function of a variate X is equal to: **[July 2021]**

X	0	1	2	3	4	5	6
P(x)	5k	3k	4k	6k	7k	9k	11k

(A) $\frac{1}{39}$

(B) $\frac{1}{40}$

(C) $\frac{1}{49}$

(D) $\frac{1}{45}$

117. For any two dependent events A and B, $P(A) = \frac{5}{9}$ and $P(B) = \frac{6}{11}$ and $P(A \cap B) = \frac{10}{33}$. What are the values of

$P\left(\frac{A}{B}\right)$ and $P\left(\frac{B}{A}\right)$? **[Dec. 2021]**

(A) $\frac{5}{9}, \frac{6}{11}$

(B) $\frac{5}{6}, \frac{6}{11}$

(C) $\frac{1}{9}, \frac{2}{9}$

(D) $\frac{2}{9}, \frac{4}{9}$

118. Which of the following pair of events E and F are mutually exclusive? **[Dec. 2021]**

(A) E = {Ram's age is 13} and F = {Ram is studying in a college}

(B) E = {Sita studies in a school} and F = {Sita is a play back singer}

(C) E = {Raju is an elder brother in a family} and F = {Raju's father has more than one son}

(D) E = {Banu studied B.A. English literature and} F= {Banu can read English novels}

119. Assume that the probability for rain on a day is 0.4. An umbrella salesman can earn Rs. 400 per day in case of rain on that day and will lose Rs. 100 per day if there is no rain. The expected earnings in (in Rs.) per day of the salesman is **[Dec. 2021]**

(A) 400

(B) 200

(C) 100

(D) 0

120. The probability distribution of a random variable x is given below: **[Dec. 2021]**

x:	1	2	4	5	6
P:	0.15	0.25	0.2	0.3	0.1

What is the standard deviation of x?

(A) 1.49

(B) 1.56

(C) 1.69

(D) 1.72

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

121. In a group of 20 males and 15 females, 12 males and 8 females are service holders. What is the probability that a person selected at random from the group is a service holder given that the selected person is a male? **[Dec. 2021]**

(A) 0.40
(B) 0.60
(C) 0.45
(D) 0.55

122. There are 3 boxes with the following composition:

Box I : 7 Red + 5 White + 4 Blue balls

Box II : 5 Red + 6 White + 3 Blue balls

Box III : 4 Red + 3 White + 2 Blue balls

One of the boxes is selected at random and a ball is drawn from it. What is the probability the drawn ball is red? **[Dec. 2021]**

(A) $\frac{1249}{3024}$
(B) $\frac{1247}{3004}$
(C) $\frac{1147}{3024}$
(D) $\frac{1}{2}$

123. For a probability distribution, probability is given by, $P(Xi)=\frac{X_i}{k}, X_i, = 1,2,.....9$. The value of k is **[Dec. 2021]**

(A) 55
(B) 9
(C) 45
(D) 81

124. Suppose A and B are two independent events with probabilities P(A) ≠ 0 and P(B)≠0. Let A' and B' be their complements. Which one of the following statements in FALSE? **[Dec. 2022]**

(A) $P(A \cap B) = P(A)P(B)$
(B) $P(A/B) = P(A)$
(C) $P(AU\ B) = P(A) + P(B)$
(D) $P(A' \cap B') = P(A')P(B')$

125. The Theorem of Compound Probability states that for any two events A and B. **[Dec. 2022]**

(A) $P(A \cap B) = P(A) \times P(B/A)$
(B) $P(A \cup B) = P(A) \times P(B/A)$
(C) $P(A \cap B) = P(A) \times P(B)$
(D) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

126. A machine is made of two parts A and B. The manufacturing process of each part is such that probability of defective in part A is 0.08 and that B is 0.05. What is the probability that the assembled part will not have any defect? **[Dec. 2022]**

(A) 0.934
(B) 0.864
(C) 0.85
(D) 0.874

127. If $P(A)=\frac{1}{3}$, $P(B)=\frac{3}{4}$ and $P(A \cup B)=\frac{11}{12}$ then $P\left(\frac{B}{A}\right)$ is: **[Dec. 2022]**

(A) $\frac{1}{6}$
(B) $\frac{4}{9}$
(C) $\frac{1}{2}$
(D) $\frac{1}{8}$

128. The probability that is leap year has 53 Monday is: **[Dec. 2022]**

(A) 1/7
(B) 2/3
(C) 2/7
(D) 3/5

129. If a number is selected at random from the first 50 natural numbers, what will be the probability that the selected number is a multiple of 3 and 4? **[Dec. 2022]**

(A) 5/50
(B) 2/25
(C) 3/50
(D) 4/25

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

130. If three coins are tossed simultaneously, what is the probability of getting two heads together?

(A) 1/4
(B) 1/8
(C) 5/8
(D) 3/8

131. Company 'A' produces 10% defective products, company 'B' produces 20% defective products and company 'C' produces 5% defective products. If choosing a company is an equally likely event, what is probability that product chosen is free from defect? **[Jun. 2023]**

(A) 0.88
(B) 0.80
(C) 0.79
(D) 0.78

132. The probability distribution of x is given below:

Value of x:	1	0	Total
Probability:	p	1-p	1

Mean is equal to **[Jun. 2023]**

(A) P
(B) 1-p
(C) 0
(D) 1

133. For any two events 'A' and 'B' it is known that P(A)=2/3, P(B) = 3/8 and $P(A \cap B)=1/4$, then the events A and B are: **[Jun. 2023]**

(A) Mutually exclusive and Independent
(B) Mutually not exclusive and Independent
(C) Mutually exclusive but not Independent
(D) Neither independent nor mutually exclusive

134. If a random variable X has the following probability distribution, then the expected value of X is: **[Jun. 2023]**

X	-1	-2	0	1	2
$f(x)$	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{5}$	$\frac{1}{6}$	$\frac{1}{3}$

(A) $\frac{3}{2}$
(B) $\frac{1}{2}$
(C) $\frac{1}{6}$
(D) $\frac{1}{3}$

135. The probability that a four digit number comprising the digits 2, 5, 6 and 7, without repetition of digits, would be divisible by 4 is **[Jun. 2023]**

(A) ½
(B) 3/4
(C) 1/4
(D) 1/3

136. On a commodity exchange when booking trades with provision for stop-losses, a trader can make a profit of ₹ 50,000 or incur a loss of ₹ 20,000. The probabilities of making profit and incurring loss, from the past experience, are known to be 0.75 and 0.25 respectively. The expected profit to be made by trader should be **[Jun. 2023]**

(A) ₹ 32,500
(B) ₹ 35,000
(C) ₹ 30,000
(D) ₹ 40,000

137. Four persons are chosen at random from a group of 3 men, 2 women and 4 children. The probability that exactly 2 of them are children, is **[Jun. 2023]**

(A) $\frac{10}{21}$
(B) $\frac{1}{12}$
(C) $\frac{1}{5}$
(D) $\frac{1}{9}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

138. If $P(A)=\frac{1}{3}$, $P(B)=\frac{1}{4}$, $P(A/B)=\frac{1}{6}$, the probability $P\left(\frac{B}{A}\right)$ is [Jun. 2023]

(A) $\frac{1}{8}$

(B) $\frac{1}{4}$

(C) $\frac{3}{8}$

(D) $\frac{1}{2}$

139. If mean and variance of a random variable which follows the Binomial Distribution are 7 and 6 respectively, then the probability of success is: [Dec. 2023]

(A) $\frac{6}{7}$

(B) $\frac{36}{49}$

(C) $\frac{1}{7}$

(D) $\frac{1}{49}$

140. If P(A) = 1/2 and P(B) = 1/3 and $P(A \cup B) = 2/3$ then find $P(A \cap B)$ [Dec. 2023]

(A) $\frac{1}{4}$

(B) $\frac{2}{3}$

(C) $\frac{1}{6}$

(D) $\frac{1}{2}$

141. If six coins are tossed simultaneously. The probability of obtaining exactly two heads are, [Dec. 2023]

(A) 0.2343

(B) 0.9841

(C) 0.1268

(D) 0.0156

142. A box contain 20 electrical bulbs out of which 4 are defective. Two bulbs are chosen at random from this box. The probability that at least one of them is defective. [Dec. 2023]

(A) $\frac{7}{19}$

(B) $\frac{4}{19}$

(C) $\frac{12}{19}$

(D) $\frac{15}{19}$

143. If a card is drawn at random from a pack of 52 cards, what is the chance of getting a Club or a King? [Dec. 2023]

(A) $\frac{13}{52}$

(B) $\frac{4}{52}$

(C) $\frac{17}{52}$

(D) $\frac{16}{52}$

144. A number is selected from the first 30 natural numbers. What is the probability that it would be divisible by 3 or 8? [Dec. 2023]

(A) 0.2

(B) 0.4

(C) 0.6

(D) 0.8

145. If $P(A \cap B)=\frac{1}{3}$, $P(A \cup B)=\frac{5}{6}$, $P(\bar{B})=\frac{1}{2}$, then $P(\bar{A})$ is: [Dec. 2023]

(A) $\frac{2}{3}$

(B) $\frac{1}{3}$

(C) $\frac{1}{4}$

(D) $\frac{3}{4}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

146. A number is selected at random from the first 100 natural numbers. What is the probability that it would be a multiple of 3 or 7? **[Dec. 2023]**

(A) $\frac{33}{100}$

(B) $\frac{4}{100}$

(C) $\frac{21}{100}$

(D) $\frac{43}{100}$

147. A number is selected at random from the set {1, 2, ….., 99}. The probability that it is divisible by 9 or 11 is _____ **[June 2024]**

(A) 19/100

(B) 19/99

(C) 10/100

(D) 10/99

148. Two coins are tossed. Define the events A = {"the first toss is head"}, A_1 = {number of heads is 2}; A_2 = {number of heads is 1}; A_3 = {number of heads is 0} and A_4 = {"both outcomes are alike"}. The event A is independent of _____.

(A) A_1 **[June 2024]**

(B) A_2

(C) A_3

(D) A_1 and A_2 both

149. From a bag containing 4 red, 5 blue and 6 white caps, two caps are drawn without replacement. What is the probability that the caps are of different colours?

(A) $\frac{74}{105}$ **[June 2024]**

(B) $\frac{37}{105}$

(C) $\frac{94}{105}$

(D) $\frac{31}{105}$

150. A question in statistics is given to three students A, B and C. Their chances of solving the question are 1/3, 1/5 and 1/7 respectively. The probability that the question would be solved is

(A) 19/35 **[June 2024]**

(B) 16/35

(C) 1/105

(D) 104/105

151. A company produces two types of products, A and B the probability of a defective product in type A is 0.05 and in type B is 0.03. If the company produces 60% type A and 40% type B. What is the probability of a randomly selected product being defective?

(A) 0.042 **[June 2024]**

(B) 0.03

(C) 0.048

(D) 0.052

152. Which of the following pairs of events are mutually exclusive? **[Sept. 2024]**

(A) A: The student studies in a school.
B: He studies Geography.

(B) A: Archna was born in India.
B: She is a fine lawyer.

(C) A: Sita is 16 years old.
B: She is a good folk dancer.

(D) A: Imran is under 15 years of age.
B: He is a voter of Delhi.

153. Which one holds correct for any two events A and B? **[Sept. 2024]**

(A) $P(A - B) = P(A) - P(B)$

(B) $P(A - B) = P(A) - P(A \cap B)$

(C) $P(A - B) = P(B) - P(A \cap B)$

(D) $P(A - B) = P(B) + P(A \cap B)$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

154. Two cards are drawn at random from a pack of 52 cards. The probability of getting either both the red cards or both Kings cards is: **[Sept. 2024]**

(A) 0.2488
(B) 0.4288
(C) 0.8248
(D) 0.8428

155. The probability of success of three students in CA Foundation examination are 1/5, 1/4 and 1/3 respectively. Find the probability that at least two students will get success. **[Sept. 2024]**

(A) 2/5
(B) 3/4
(C) 1/6
(D) 1/5

156. If P(A) = 0.65 and P(B) = 0.15, then $P(\bar{A})+P(\bar{B})$ is: **[Sept. 2024]**

(A) 1.5
(B) 1.2
(C) 0.8
(D) 0.35

157. Eight labourers are working at a construction site with the following wages for each day of working (in ₹):

500, 620, 400, 700, 450, 560, 320, 450

If one of the workers is selected at random, what is the probability that his wage would be less than the average wage? **[Sept. 2024]**

(A) 0.625
(B) 0.375
(C) 0.500
(D) 0.450

158. Let A and B be two possible outcomes of a random experiment and $P(A)=\frac{1}{3}$, $P(A\cup B)=\frac{1}{2}$ P(B) = x. For 2what value of x are A and B mutually exclusive events? **[Jan. 2025]**

(A) $\frac{1}{4}$
(B) $\frac{1}{6}$
(C) $\frac{1}{5}$
(D) $\frac{1}{8}$

159. A random variable has the following probability distribution:

X:	0	1	2	3
P:	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$

Find expected value of X. **[Jan. 2025]**

(A) 1.43
(B) 1.20
(C) 1.80
(D) 2.00

160. Let $P(A)=\frac{1}{5}$ and $P(\bar{B})=\frac{3}{5}$. If A and B are mutually exclusive events then $P(A\cup B)$ is **[Jan. 2025]**

(A) $\frac{1}{5}$
(B) $\frac{3}{5}$
(C) $\frac{2}{5}$
(D) $\frac{4}{5}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	B	2.	C	3.	C	4.	D	5.	B
6.	A	7.	C	8.	C	9.	D	10.	A
11.	B	12.	B	13.	A	14.	C	15.	C
16.	C	17.	B	18.	A	19.	D	20.	C
21.	B	22.	D	23.	B	24.	C	25.	B
26.	B	27.	C	28.	D	29.	B	30.	B
31.	B	32.	C	33.	B	34.	C	35.	A
36.	B	37.	D	38.	B	39.	C	40.	C
41.	A	42.	B	43.	C	44.	D	45.	B
46.	B	47.	B	48.	B	49.	D	50.	C
51.	B	52.	A	53.	A	54.	C	55.	C
56.	C	57.	D	58.	C	59.	C	60.	B
61.	D	62.	A	63.	D	64.	A	65.	B
66.	A	67.	B	68.	B	69.	A	70.	D
71.	C	72.	A	73.	C	74.	A	75.	B
76.	D	77.	D	78.	A	79.	B	80.	D
81.	B	82.	C	83.	D	84.	B	85.	D
86.	A	87.	A	88.	A	89.	A	90.	B
91.	B	92.	A	93.	B	94.	A	95.	B
96.	B	97.	A	98.	D	99.	C	100.	D
101.	B	102.	D	103.	D	104.	A	105.	C
106.	D	107.	C	108.	C	109.	A	110.	D
111.	C	112.	C	113.	B	114.	C	115.	C
116.	D	117.	A	118.	A	119.	C	120.	C
121.	B	122.	A	123.	C	124.	C	125.	A
126.	D	127.	C	128.	C	129.	B	130.	D
131.	A	132.	A	133.	B	134.	C	135.	D
136.	A	137.	A	138.	A	139.	C	140.	C
141.	A	142.	A	143.	D	144.	B	145.	B
146.	D	147.	B	148.	C	149.	A	150.	A
151.	A	152.	D	153.	B	154.	A	155.	C
.156.	B	157.	C	158.	B	159.	A	160.	B

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

SPACE FOR NOTES

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 12
THEORETICAL DISTRIBUTIONS

1. If $(0.7+0.3)^{10}$ and q = 0.3 then variance is

(A) 4.41
(B) 2.1
(C) 1.44
(D) Not

2. If in a factory average 3 workers remain absent every day, what is the probability that on a given day 2 workers will remain absent

(A) 0.34
(B) 0.15
(C) 0.50
(D) 0.22

3. In a Normal Distribution, if point of inflexion are 6 and 14 then Mean Deviation is

(A) 4 **[June 2011]**
(B) 3.2
(C) 3
(D) 2.5

4. In a B.P. Standard Deviation is 10, Mean is 20 then find its parameters i.e. n and p.

(A) $40, \frac{1}{2}$
(B) $20, \frac{1}{2}$
(C) $10, \frac{1}{2}$
(D) Not possible

5. In a Normal Distribution if x = 35, z = 2 and x = 40, z = 3, find μ and σ.

(A) 25, 5
(B) 30, 10
(C) 25, 10
(D) 30, 5

6. If mean of Normal Distribution is 42 and number of observation are 100 then inter quartile range if Standard Deviation is 6

(A) 4.05
(B) 2.10
(C) 8.10
(D) 6.05

7. What is the relationship between mean and variance in a Poisson's Distribution **[Dec. 2016/June 2017/Dec. 2017]**

(A) Mean > Variance
(B) Mean < Variance
(C) Mean = Variance
(D) They are not related

8. If in a Binomial Distribution 10 P(x = 0) = P (x = 1) and mean = 5 find 1-p.

(A) $\frac{1}{3}$
(B) $\frac{2}{3}$
(C) $\frac{1}{4}$
(D) $\frac{1}{2}$

9. If the demand of car with mean 1.5 in garage is in Poisson's Distribution and there are only 2 cars available in the garage then what is the probability that on given day there will be demand of only 1 car

(A) 21.3% **[Dec. 2011]**
(B) 33.4%
(C) 56.5%
(D) 48.7%

10. In a Binomial Distribution if n = 8 and p = 0.5 then $p[|x-4| \leq 2]$

(A) 0.86
(B) 0.91
(C) 0.93
(D) 0.85

11. $[x-\mu/\sigma]^2$ is which distribution

(A) Binomial
(B) Poisson
(C) Normal
(D) F Distribution

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. $P(x = 0) = P(x = 2)$ find expected value of Poisson's Distribution **[June 2009]**

(A) 2
(B) 4
(C) $\sqrt{2}$
(D) 1

13. If x follows a Binomial Distribution with E (x) = 2, V (x) = 4/3 find n **[Dec. 2009]**

(A) 15
(B) 10
(C) 6
(D) 4

14. Binomial Distribution has how many parameters **[Dec. 2009]**

(A) One
(B) Two
(C) Three
(D) Four

15. In a Standard Normal Variate, variance is **[June 2010]**

(A) 0
(B) -1
(C) 1
(D) 2

16. In a Poisson's Distribution P (x = 3) = 5 P (x=5) find Standard Deviation

[June 2010]

(A) 4
(B) 2
(C) 1
(D) 0

17. In a Binomial Distribution the parameters are 9 and 1/3 what is the variance

[June 2010]

(A) 1
(B) 0
(C) 2
(D) $\sqrt{2}$

18. If a distribution is such that P (6, p) and P (x = 2) = 9 P (x =4) then p is

(A) $\frac{3}{4}$ **[June 2010]**
(B) $\frac{1}{2}$
(C) $\frac{1}{4}$
(D) $\frac{2}{3}$

19. Area under Normal Distribution curve is

(A) 2 units **[Dec. 2010]**
(B) 1 unit
(C) 3 units
(D) None of these

20. If Standard Deviation of Poisson's Distribution is 2, what is its mode

(A) 4 **[Dec. 2010]**
(B) 3
(C) Both (A) and (B)
(D) 5

21. In a Normal Distribution : N (μ, σ^2) what is $P(\mu-3\sigma<x<\mu+3\sigma)$ **[Dec. 2010 & June 2015]**

(A) 68.5%
(B) 95.5%
(C) 99.2%
(D) 99.73%

22. In a Binomial Distribution B(n, p) mean is 6 and variance is 2 then p is

(A) $\frac{1}{2}$ **[Dec. 2010]**
(B) $\frac{3}{4}$
(C) $\frac{1}{3}$
(D) $\frac{2}{3}$

23. If x~N (3.36) and y~N (5, 64) are two independent Normal variate will their standard parameters of distribution, then if (x+y)~N (8, A) also follows normal distribution. The value of A will be _____

(A) 10 **[June 2011]**
(B) 100
(C) 50
(D) 1

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

24. The mean of binomial distribution is 20 and standard deviation is 4 then its parameters are [Dec. 2011]

(A) $50, \frac{4}{5}$

(B) $100, \frac{4}{5}$

(C) $100, \frac{1}{5}$

(D) $50, \frac{1}{5}$

25. The binomial distribution with mean 3 and variance 2 is: [Dec. 2011]

(A) $\left(\frac{1}{3}+\frac{2}{3}\right)^9$

(B) $\beta\left(9, \frac{1}{3}\right)$

(C) $\beta\left(12, \frac{2}{3}\right)$

(D) Both (A) and (B)

26. For normal distribution the relation between quartile deviation (Q.D.) and standard deviation (S.D.) is

(A) 4SD = 6QD

(B) 4QD = 6SD

(C) 4SD = 5QD

(D) 5SD = 4QD

27. If x is a Poisson's variate and E (x) = 1 then P (x>1) is [June 2012]

(A) $\frac{1}{e}$

(B) $\frac{2}{e}$

(C) $1-\frac{2}{e}$

(D) $1-\frac{1}{e}$

28. If a random variable x follows Poisson distribution such that E (x^2) = 30 then the variance of the distribution is

(A) 6 [Dec. 2012]

(B) 5

(C) 3

(D) 2

29. For a normal distribution [Dec. 2012]

(A) 1st and 2nd Quartile are equidistant from median

(B) 2nd and 3rd Quartile are equidistant from median

(C) 1st and 3rd Quartile are equidistant from median

(D) None

30. If parameters of a binomial distribution are n and p then this distribution tends to a Poisson distribution when

(A) n→o & p→∞ [Dec. 2012]

(B) n→1 & p→0

(C) n→∞ & p→0

(D) n→∞ & p→1

31. if x~B (5, P) and P (x = 2) = 0.4362 and P (x = 3) = 0.2181 then p =

[June 2013]

(A) $\frac{1}{3}$

(B) $\frac{2}{3}$

(C) $\frac{1}{4}$

(D) $\frac{3}{4}$

32. In Binomial Distribution, μ= 4 and and σ^2 = 3 then mode = [June 2013]

(A) 5

(B) 3

(C) 4

(D) 5 &4

33. In a certain Poisson frequency distribution the probability corresponding to two successes is half of the probability corresponding to three successes. The mean of the distribution is [Dec. 2013]

(A) 2

(B) 3

(C) 5

(D) 6

34. There are 75 students in a class and their average marks is 50 and S.D. of marks is 5. Number of students who have secured more than 60 marks. (Given that area under the normal curve for z = 2 is 0.4772) is _____.

(A) 10

(B) 5

(C) 3

(D) 2

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

35. In normal distribution mean, median and mode are

(A) Never equal
(B) Always equal
(C) May be equal
(D) Non existent

36. If a variate x has mean greater than variance then its distribution will be **[June 2014]**

(A) Poisson's
(B) Normal
(C) Binomial
(D) Chi-square

37. Mean and Variance of a binomial are 4 and $\frac{4}{3}$ respectively then $P\ (x \geq 1)$ will be **[June 2014]**

(A) $\frac{1}{729}$
(B) $\frac{646}{729}$
(C) $\frac{728}{729}$
(D) $\frac{98}{729}$

38. 5000 students were appeared in an examination. The mean of marks was 39.5 with standard deviation 12.5 marks. Assuming the distribution to be normal find the number of students recorded more than 60 marks. [The value of z from 0 to 1.64 is 0.4495] **[June 2014]**

(A) 2252
(B) 2752
(C) 252
(D) 2248

39. If X and Y are 2 independent normal variables with mean as 10 and 12 and Standard Deviation (S.D.) as 3 and 4 respectively, then (X + Y) is normally distributed with: **[Sept. 2024]**

(A) Mean 22 and S.D.=7
(B) Mean 22 and S.D.=25
(C) Mean 22 and S.D.=5
(D) Mean 22 and S.D.= 49

40. The quartile deviation of a normal distribution with Mean of 10 and Standard Deviation of 4 is: **[Sept. 2024]**

(A) 2.70
(B) 3.20
(C) 0.675
(D) 6.75

41. A Random variables x follows uniform distribution in the interval [-3, 7]. Then the mean of distribution is

(A) 2
(B) 4
(C) 5
(D) 6

42. X and Y are two independent Normal variables then the distribution of x+y is _____ **[Dec. 2014]**

(A) Normal distribution
(B) T-distribution
(C) Chi-Square distribution
(D) F-distribution

43. In the Binomial distribution the parameters are n and p, then x assumes values **[June 2015]**

(A) Between 0 and n
(B) Between 0 and n both inclusive
(C) Between 0 and 1
(D) Between 0 and ∞

44. In _____ distribution, Mean = Variance. **[June 2015]**

(A) B
(B) P
(C) N
(D) Chi-square

45. Wages paid to workers follows **[Dec. 2015]**

(A) B
(B) P
(C) N
(D) Chi-square

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

46. For a binomial distribution the parameters are 15 and 1/3. Find mode: **[Dec. 2015]**

(A) 5
(B) 4
(C) 4 or 5
(D) 6

47. Standard Deviation of binomial distribution is: **[Dec. 2015]**

(A) np
(B) npq
(C) $\sqrt{npq}$
(D) $(npq)^2$

48. For a Poisson variate x, P(x=1) = P(x=2). What is mean of x? **[June 2016]**

(A) 1
(B) 2
(C) $\sqrt{2}$
(D) 3

49. In a discrete random variable follows uniform distribution and assumes only the values 8, 9, 11, 15,18, 20. The P(x≤15) is _____. **[June 2016]**

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $\frac{2}{3}$
(D) $\frac{1}{4}$

50. If a random variable X follows Poisson distribution such that P(X = 1) = P(X = 2),then the mean of the distribution is : **[Sept. 2024]**

(A) 2
(B) 1
(C) 0
(D) 1/2

51. If X~N (50, 16) then which of the following is not possible **[June 2017]**

(A) P (x>60) = 0.30
(B) P (x>50) = 0.50
(C) P (x<60) = 0.40
(D) P (x<50) = 0.50

52. An example of a bi-parametric discrete probability distribution is **[Dec. 2016 & May 2018]**

(A) Binomial distribution
(B) Poisson distribution
(C) Normal distribution
(D) Both (A) and (C)

53. In normal distribution 95% observation lies between _____&_____. **[Dec. 2017]**

(A) (μ-2σ, μ+2σ,)
(B) (μ-3σ, μ+3σ,)
(C) (μ-1.96σ, μ+1.96σ,)
(D) (μ-2.58σ, μ+2.58σ,)

54. Shape of Normal Distribution Curve: **[Dec.2009]**

(A) Depends on its parameters
(B) Does not depend on its parameters
(C) Either (A) or (B)
(D) Neither (A) nor (B)

55. In a Binomial Distribution, if mean is k-times the variance, then the value of 'k' will be_____. **[June 2011]**

(A) p
(B) $\frac{1}{p}$
(C) 1 – p
(D) $\frac{1}{1-p}$

56. For binomial distribution **[June 2012]**

(A) Variance < Mean
(B) Variance = Mean
(C) Variance > Mean
(D) None of the above

57. If a random variable x follows Poisson distribution such that E(x) = 30, then the variance of the distribution is **[Dec.2012]**

(A) 7
(B) 5
(C) 30
(D) 20

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

58. In a normal distribution quartile deviation is 6, the standard deviation will be **[Dec.2012]**

(A) 4
(B) 9
(C) 7.5
(D) 6

59. For Poisson Distribution: **[June 2013]**

(A) Mean and Standard Deviations are equal
(B) Mean and variance are equal
(C) Standard Deviation and variance are equal
(D) Both (A) and (B) are correct

60. Which of the following is not a characteristic of a normal probability distribution? **[June 2013]**

(A) Mean of the normally distributed lies at the centre of its normal curve.
(B) It is multi-modal
(C) The mean, median and mode are equal
(D) It is a symmetric curve

61. An approximate relation between quartile deviation (QD) and standard deviation (S.D) of normal distribution is:

(A) 5 QD = 4 SD **[June 2013]**
(B) 4 QD = 5 SD
(C) 2 QD = 3 SD
(D) 3 QD = 2 SDd

62. T-test can be used only when the sample has been taken from **[Dec. 2014]**

(A) Binomial Population
(B) Poisson Population
(C) Normal Population
(D) Exponential Population

63. The normal curve is: **[June 2016]**

(A) Positively skewed
(B) Negatively skewed
(C) Symmetrical
(D) All these

64. If x and y are independent normal variates with Mean and Standard Deviation as μ_1 and μ_2 and σ_1 and σ_2 respectively, then z = x + y also follows normal distribution with **[Dec.2016]**

(A) Mean = $\mu_1 + \mu_2$ and S.D. = 0 respectively
(B) Mean = 0 and S.D. = $\sigma_1^{\,2} + \sigma_2^{\,2}$
(C) Mean = $\mu_1 + \mu_2$ and S.D. $= \sqrt{\sigma_1^2 + \sigma_2^2}$
(D) None of these

65. Name the distribution which has Mean = Variance **[Dec. 2016]**

(A) Binomial
(B) Poisson
(C) Normal
(D) Chi-square

66. If for a distribution mean = variance, then the distribution is said to be:

(A) Normal **[June 2017]**
(B) Binomial
(C) Poisson
(D) None of the above

67. The variance of a binomial distribution with parameters n and p is: **[May 2018]**

(A) $np^2(1-p)$
(B) $\sqrt{np-(I-p)}$
(C) $np(1-p)$
(D) $n^2p^2\,(1-P)^2$

68. X is a Poisson variate satisfying the following condition 9 P(X = 4) + 90 (X = 6) = P (X = 2). What is the value of $P(X \leq 1)$?

(A) 0.5655 **[May 2018]**
(B) 0.6559
(C) 0.7358
(D) 0.8201

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

69. What is the first quartile of x having the following probability density function?

$$f(x)=\frac{1}{\sqrt{72\pi}}e^{\frac{-(x-10)^2}{72}} \text{ for } -\infty<x<\infty$$

[May 2018]

(A) 4

(B) 5

(C) 5.95

(D) 6.75

70. Probability distribution may be

[May 2018]

(A) Discrete

(B) Continuous

(C) Infinite

(D) (A) or (B)

71. If the area of standard normal curve between z = 0 to z = 1 is 0.3413, then the value of ϕ (1) is **[May 2018]**

(A) 0.5000

(B) 0.8413

(C) –0.5000

(D) 1

72. If for a normal distribution $Q_1=54.52$ and $Q_3=78.86$, then the median of the distribution is **[Nov. 2018]**

(A) 12.17

(B) 39.43

(C) 66.69

(D) None of these

73. What is the mean of X having the following density function?

$$f(x)=\frac{1}{4\sqrt{2\pi}}.e^{\frac{-(x-10)^2}{32}} \text{ for } -\infty<x<\infty$$

[Nov. 2018]

(A) 10

(B) 4

(C) 40

(D) None of the above

74. The probability that a student is not a swimmer is $\frac{1}{5}$, then the probability that out of five students four are swimmer is

(A) $\left(\frac{4}{5}\right)^4\left(\frac{1}{5}\right)$ **[Nov. 2018]**

(B) ${}^5C_1\left(\frac{1}{5}\right)^4\left(\frac{4}{5}\right)$

(C) ${}^5C_4\left(\frac{4}{5}\right)^1\left(\frac{1}{5}\right)^4$

(D) None of the above

75. 4 coins were tossed 1600 times. What is the probability that all 4 coins do not turn head upward at a time? **[June 2019]**

(A) $1600\,e^{-100}$

(B) $1000\,e^{-100}$

(C) $100\,e^{-1600}$

(D) e^{-100}

76. If mean and variance are 5 and 3 respectively then relation between p and q is:

[June 2019]

(A) p > q

(B) p < q

(C) p = q

(D) p is symmetric

77. In a Poisson distribution if P(x = 4) = P(x = 5) then the parameter of Poisson distribution is: **[June 2019]**

(A) $\frac{4}{5}$

(B) $\frac{5}{4}$

(C) 4

(D) 5

78. Area between μ - 1.96σ and μ + 1.96σ in a normal distribution is: **[June 2019]**

(A) 95.45%

(B) 95%

(C) 96%

(D) 99%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

79. If the points of inflexion of a normal curve are 40 and 60 respectively, then its mean deviation is: **[June 2019]**

(A) 8
(B) 45
(C) 50
(D) 60

80. Area under $U \pm 3\sigma$ **[Nov. 2019]**

(A) 99.73%
(B) 99%
(C) 100%
(D) 99.37%

81. For a Poisson distribution: **[Nov. 2019]**

(A) Mean and SD are equal
(B) Mean and variance are equal
(C) SD and Variance
(D) Both (A) and (B)

82. For mode when n = 15 and $p = \frac{1}{4}$ in binomial distribution? **[Nov. 2019]**

(A) 4
(B) 4 and 3
(C) 4.2
(D) 3.75

83. In Poisson distribution, if $P(x=2) = \frac{1}{2}$ $P(x=3)$ find m? **[Nov. 2019]**

(A) 3
(B) $\frac{1}{6}$
(C) 6
(D) $\frac{1}{3}$

84. In a binomial distribution B(n, p) n = 4 $P(x=2) = 3\ P(x=3)$ find p **[Nov. 2019]**

(A) $\frac{1}{3}$
(B) $\frac{2}{3}$
(C) $\frac{6}{4}$
(D) $\frac{4}{3}$

85. What is the mean and SD x if $f(x) = \frac{\sqrt{2}}{\sqrt{\pi}} e^{-2(x-3)^2}, -\infty < x < \infty$ **[Nov. 2019]**

(A) $3, \frac{1}{2}$
(B) $3, \frac{1}{4}$
(C) $2, \frac{1}{2}$
(D) $2, \sqrt{2}$

86. Which of the following is uni-parametric distribution? **[Nov. 2020]**

(A) Poisson
(B) Normal
(C) Binomial
(D) Hyper geometric

87. If the probability of success in a binomial distribution is less than one-half, then the binomial distribution ___. **[Nov. 2020]**

(A) is skewed to left
(B) is skewed to right
(C) has two modes
(D) has median at a point>mean+$\frac{1}{2}$

88. If we change the parameter(s) of a ____ distribution the sharpe of probability curve does not change. **[Nov. 2020]**

(A) Normal
(B) Binomial
(C) Poisson
(D) Non-Gaussion

89. Which one of the following has Poisson distribution? **[Nov. 2020]**

(A) The number of days to get a complete cure
(B) The number of defects per meter on long roll of coated polythene sheet
(C) The errors obtained in repeated measuring of the length of a rod
(D) The number of claims rejected by an insurance agency

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

90. For a Poisson distributed variable X, we have $P(X = 7) = 8\ P(X = 9)$, the mean of the distribution is: **[Nov. 2020]**

(A) 3
(B) 4
(C) 7
(D) 9

91. The quartile deviation of a normal distribution with mean 10 and standard deviation 4 is _____. **[Nov. 2020]**

(A) 54.24
(B) 23.20
(C) 0.275
(D) 2.70

92. If the parameter of Poisson distribution is m and $(\text{Mean} + \text{S. D.}) = \frac{6}{25}$ then find m:

(A) $\frac{3}{25}$ **[Nov. 2020]**
(B) $\frac{1}{25}$
(C) $\frac{4}{25}$
(D) $\frac{3}{5}$

93. A coin with probability for head as $\frac{1}{5}$ is tossed 100 times. The standard deviation of the number of heads turned up is.

(A) 3 **[Jan. 2021]**
(B) 2
(C) 4
(D) 6

94. If x is a Poisson variable and $P(x = 1) = P(x = 2)$, then $P(x = 4)$ is **[Jan. 2021]**

(A) $\frac{2}{3}e^{-2}$
(B) $\frac{2}{3}e^{4}$
(C) $\frac{3}{2}e^{-2}$
(D) $\frac{3}{2}e^{4}$

95. Which one of the following is an uniparametric distribution? **[Jan. 2021]**

(A) Poisson
(B) Normal
(C) Binomial
(D) Hyper geometric

96. In a class of 100 students, the mean marks was 50 with standard deviation 14.9. Assuming the distribution of marks to be normal, find the number of students who obtained more than 70% marks [at $Z - 1.34$, area $= 0.4099$]. **[Sept. 2024]**

(A) 10
(B) 9
(C) B
(D) 7

97. In normal distribution, Mean, Median and Mode are: **[July 2021]**

(A) Zero
(B) Not Equal
(C) Equal
(D) Null

98. If is Poisson variate such that $P(x = 1) = 0.7$, $P(x = 2) = 0.3$, then $P(x = 0) =$

(A) $e^{\frac{6}{7}}$ **[July 2021]**
(B) $e^{\frac{-6}{7}}$
(C) $e^{\frac{-2}{3}}$
(D) $e^{\frac{-1}{3}}$

99. Which of the following diagram is the most appropriate to represents various heads in total cost? **[July 2021]**

(A) Pie chart
(B) Bar graph
(C) Multiple Line chart
(D) Scatter Plot

100. If x is a binomial variate with $P = \frac{1}{3}$, for the experiment of 90 trials, then the standard deviation is equal to: **[July 2021]**

(A) $-\sqrt{5}$
(B) $\sqrt{5}$
(C) $2\sqrt{5}$
(D) $\sqrt{15}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

101. For a certain type of mobile, the length of time between charges of the battery is normally distributed with a mean of 50 hours and a standard deviation of 15 hours. A person owns one of these mobiles and want to know the probability that the length of time will be between 50 and 70 hours is (given $\phi(1.33))=0.9082, \phi(0)=0.5)$? **[July 2021]**

(A) –0.4082
(B) 0.5
(C) 0.4082
(D) –0.5

102. The average number of advertisements per page appearing in a newspaper is 3. What is the probability that in a particular page zero number of advertisements are there?

(A) e^{-3} **[Dec. 2021]**
(B) e^{0}
(C) e^{+3}
(D) e^{-1}

103. Four unbiased coins are tossed simultaneously. The expected number of heads is: **[Dec. 2021]**

(A) 1
(B) 2
(C) 3
(D) 4

104. If, for a Poisson distributed random variable X, the probability for X taking value 2 is 3 times the probability for X taking value 4, then the variance of X is **[Dec. 2021]**

(A) 4
(B) 3
(C) 2
(D) 5

105. Skewness of Normal Distribution is –

(A) Negative **[Dec. 2022]**
(B) Positive
(C) Zero
(D) Undefined

106. If Poisson distribution is such that P(X = 2) = P(X = 3) then the variance of the distribution is **[Dec. 2022]**

(A) $\sqrt{3}$
(B) 3
(C) 6
(D) 9

107. The Standard Deviation of Binomial distribution is: **[Dec. 2022]**

(A) Npq
(B) $\sqrt{npq}$
(C) np
(D) $\sqrt{np}$

108. The speeds of n number of bikes follow a normal distribution model with a mean of 83 km/hr and a standard deviation of 9.4 km. /hr. Find the probability that a bike picked at random is travelling at more than 95 km/hr.?(Given $\phi(1.28) = 0.899$

(A) 0.101 **[Dec. 2022]**
(B) 0.38
(C) 0.49
(D) 0.278

109. Between 9 AM and 10 AM, the average number of phone calls per minute coming into the switchboard of a company is 4. Find the probability that during one particular minute, there will be either 2 phone calls or no phone calls (given $e^{-4} = 0.018316$).

(A) 0.156 **[Jun. 2023]**
(B) 0.165
(C) 0.149
(D) 0.194

110. If a Poisson distribution is such that $P(X=2)=\frac{1}{3}P(X=3)$, then the standarddeviation of the distribution is:

(A) $\sqrt{3}$ **[Jun. 2023]**
(B) 3
(C) 2
(D) 1

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

111. The incidence of skin diseases in a chemical plant occurs in such a way that the workers have 20% chance of suffering from it. What is the probability that out of 6 workers 4 or more will have skin diseases?

(A) 0.1696 **[Jun. 2023]**

(B) 0.01696

(C) 0.1643

(D) 0.01643

112. For a binomial distribution the mean and standard deviation are 10 and 3 respectively. Find the value of n.

(A) 30 **[Dec. 2023]**

(B) 9

(C) 90

(D) 100

113. A random variable has the following probability distribution: **[Jun. 2024]**

X	2	3	5
P	K	2K	2K

Find K.

(A) 1/3

(B) 2/5

(C) 1/5

(D) 2/3

114. A company produces 5 defective items out of 300 items. The probability distribution follows a: **[Jun. 2024]**

(A) Binomial distribution

(B) Normal distribution

(C) Poisson distribution

(D) Standard normal distribution

115. The mean of Poisson distribution is 4. The probability of two successes is _____.

(A) $\frac{8}{e^4}$ **[Jun. 2024]**

(B) $\frac{4}{e^4}$

(C) $\frac{16}{e^4}$

(D) $\frac{8}{e^2}$

116. For a normal distribution, the ratio of mean deviation to the standard deviation is _____.

(A) 0.4 **[Jun. 2024]**

(B) 0.6

(C) 0.8

(D) 1.0

117. The following table gives the cumulative probability function of X:

X:	0	1	2	3	4	5
Pr(X):	6/30	5/30	13/30	1/15	1/10	1/30

The expectation of X is _____

(A) 1.8 **[Jun. 2024]**

(B) 1.7

(C) 1.5

(D) 1.6

118. For a binomial distribution, the variance is 0.2 and the mean is 0.6. The probability of …….. 3 successes out of a trial of 5 is _____.

(A) $\frac{80}{3^5}$ **[Jun. 2024]**

(B) $\frac{40}{3^5}$

(C) $\frac{20}{3^5}$

(D) $\frac{160}{3^5}$

119. The number of accidents in a year attributed to taxi drivers in a locality follows Poisson distribution with average 2. Out of 500 taxi drivers of that area, what is the number of drivers with at least 3 accidents in a year ? (Given that e = 2.718)

(A) 162 **[Sept. 2024]**

(B) 180

(C) 201

(D) 190

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

120. In a class of 100 students, the mean marks was 50 with standard deviation 14.9. Assuming the distribution of marks to be normal, find the number of students who obtained more than 70% marks [at $Z - 1.34$, area $= 0.4099$]. **[Sept. 2024]**

(A) 10
(B) 9
(C) 8
(D) 7

121. If a random variable X follows Poisson distribution such that $P(X = 1) = P(X = 2)$,then the mean of the distribution is : **[Sept. 2024]**

(A) 2
(B) 1
(C) 0
(D) 1/2

122. The quartile deviation of a normal distribution with Mean of 10 and Standard Deviation of 4 is: **[Sept. 2024]**

(A) 2.70
(B) 3.20
(C) 0.675
(D) 6.75

123. If X and Y are 2 independent normal variables with mean as 10 and 12 and Standard Deviation (S.D.) as 3 and 4 respectively, then (X + Y) is normally distributed with: **[Sept. 2024]**

(A) Mean 22 and S.D.=7
(B) Mean 22 and S.D.=25
(C) Mean 22 and S.D.=5
(D) Mean 22 and S.D.= 49

124. What will be the mode of the Binomial distribution in which mean is 20 & Standard Deviation is $\sqrt{10}$? **[Jan. 2025]**

(A) 20.5
(B) 21
(C) 20
(D) 41

125. If X is a Poisson variable such that $P(X = 1) = P(X = 2)$ then the variance is **[Jan. 2025]**

(A) 2
(B) 1
(C) $\sqrt{2}$
(D) 3

126. The mean deviation of normal distribution is approximately equal to **[Jan. 2025]**

(A) 0.5 σ
(B) 3.14 σ
(C) 1.14 σ
(D) 0.8 σ

127. If 3 percent of ceramic cup manufactured by a company are known to be defective. What is the probability that a sample of 100 cups are taken from the production process, of that company would contain exactly one defective cup? **[Jan. 2025]**

(A) 0.15
(B) 0.03
(C) 0.09
(D) 0.30

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	B	2.	D	3.	B	4.	D	5.	A
6.	C	7.	C	8.	D	9.	B	10.	C
11.	C	12.	C	13.	C	14.	B	15.	C
16.	B	17.	C	18.	C	19.	B	20.	C
21.	D	22.	D	23.	B	24.	C	25.	D
26.	A	27.	C	28.	B	29.	C	30.	C
31.	A	32.	C	33.	D	34.	D	35.	B
36.	C	37.	C	38.	C	39.	C	40.	A
41.	A	42.	A	43.	B	44.	B	45.	C
46.	A	47.	C	48.	B	49.	C	50.	A
51.	C	52.	A	53.	C	54.	A	55.	D
56.	A	57.	C	58.	B	59.	B	60.	B
61.	D	62.	C	63.	C	64.	C	65.	B
66.	C	67.	C	68.	C	69.	C	70.	D
71.	B	72.	C	73.	A	74.	D	75.	D
76.	B	77.	D	78.	B	79.	A	80.	A
81.	B	82.	B	83.	C	84.	A	85.	A
86.	A	87.	A	88.	A	89.	B	90.	A
91.	D	92.	B	93.	C	94.	A	95.	A
96.	B	97.	C	98.	B	99.	A	100.	C
101.	C	102.	A	103.	B	104.	C	105.	C
106.	B	107.	B	108.	A	109.	B	110.	B
111.	B	112.	D	.113.	C	114.	C	115.	A
116.	C	117.	A	118.	A	119.	A	120.	B
121.	A	122.	A	123.	C	124.	C	125.	A
126.	D	127.	A						

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

SPACE FOR NOTES

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 13
CORRELATION

1. If $r_{xy} = 0$ then x and y are

(A) Dependent

(B) Independent

(C) Not Necessarily Dependent

(D) Necessarily Independent

2. If $Var_x = 625$; $r = 0.64$, $cov(x,y) = 256$, Var_y is

(A) 4

(B) 16

(C) 64

(D) 256

3. Probable Error in correlation is

(A) $0.675\frac{1-r^2}{\sqrt{n}}$

(B) $0.675\frac{r^2}{\sqrt{n}}$

(C) $0.675 \times \frac{n^2}{1-r}$

(D) $0.675\frac{n}{1-r^2}$

4. If Correlation Coefficient r between x and y is K then what is Correlation Coefficient between x and –y/2.

(A) K

(B) –K

(C) K/2

(D) –K/2

5. If $r_{xy} = 0.6$, Two linear equation are $u = 2x+1$ and $4-2y = v$ then new r_{uv}?

(A) 0.6

(B) -0.6

(C) 0.3

(D) -0.3

6. If the ranks in Spearman correlation coefficient are inversed then sum of different of rank will become

(A) Reciprocal

(B) 0

(C) 1

(D) None of the above

7. When Correlation Coefficient 'r' is negative **[Dec. 2009]**

(A) If x increase y increases

(B) If x increase y decreases

(C) X and y are not correlated

(D) None of the above

8. If Spearman's Rank Correlation Coefficient is 0.6 and the sum of square of difference of rank is 66, find n? **[Dec. 2009]**

(A) 7

(B) 9

(C) 10

(D) 12

9. If Correlation Coefficient is p then p^2 is **[June 2010]**

(A) Coefficient of Allimation

(B) Coefficient of Determination

(C) Coefficient of Non-determination

(D) Coefficient of Variation

10. Two mad judges have ranked contestants

A	B	C	D	E
1	2	3	4	5
5	4	3	2	1

Then the value of Rank Correlation will be

(A) 1 **[Dec. 2010]**

(B) –1

(C) 0

(D) 0.5

11. The covariance between two variables x and y is 8.4 and their variances are 25 and 36 respectively. Calculate Karl Pearson's coefficient of correlation **[June 2011]**

(A) 0.25

(B) 0.28

(C) 0.33

(D) 0.44

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. Three competitors in a contest are ranked by two judges in the order 1, 2, 3 and 2, 3, 1 respectively. Calculate the Spearman's rank correlation coefficient. **[June 2011]**

(A) 0.5
(B) – 0.5
(C) 1
(D) –1

13. Covariance of two variables x and y is 25 and V(x) = 36 and V(y) = 25 then r is

(A) 0.83 **[June 2011]**
(B) 0.80
(C) 0.75
(D) 0.90

14. In Spearman's rank correlation coefficient the sum of difference of ranks between variables shall be **[Dec. 2012]**

(A) Positive
(B) Negative
(C) 0
(D) 1

15. If the coefficient of correlation between x and y series is -0.38. The linear relations between x and u and y and v are 3x+5u = 3 and -8y-7v = 44 respectively. Then the coefficient of correlation between u and v is:

[Dec. 2012]

(A) -0.38
(B) 0.38
(C) 0.19
(D) -0.19

16. Two variables x and y are related as 4x+3y = 7 then correlation between x and y is _____. **[June 2013]**

(A) 0
(B) 1
(C) -1
(D) $\frac{3}{4}$

17. If r = 0.28, Cov (x,y) = 7.6 V(x) = 9 then σ_y = **[June 2013]**

(A) 8.57
(B) 9.04
(C) 10.53
(D) 11.22

18. Price and Demand us example for

[Dec. 2013]

(A) Negative Correlation
(B) Positive Correlation
(C) No Correlation
(D) Perfectly Negative Correlation

19. Determine the coefficient of correlation between x and y series

	X Series	Y Series
Number of items	15	15
Arithmetic mean	25	18
Sum of Square of deviation of mean	136	138

Sum of product deviation of x and y series from mean = 122 **[Dec. 2013]**

(A) 0.66
(B) 0.57
(C) 0.95
(D) 0.89

20. When each individual gets the exactly opposite rank by the two judges, then the rank correlation will be **[June 2014]**

(A) Negative
(B) Perfectly Negative
(C) No Correlation
(D) Positive Correlation

21. Correlation coefficient between x and y is 1, then correlation coefficient between x-2 and y/2 is **[Dec. 2014]**

(A) -1
(B) 0
(C) 1
(D) Can't be determined

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

22. When r = 1, all the points in a scatter diagram would lie

(A) On line from bottom left to top right

(B) On line from bottom right to top left

(C) Around the line from bottom left to top right

(D) Around the line from bottom right to top left

23. In case of "Insurance Companies, profits and the number of claims they have to pay" has

(A) Positive Correlation **[Dec. 2015]**

(B) Negative Correlation

(C) No Correlation

(D) None of these

24. If r = 0.6 then the coefficient of non-determination is _____.

(A) 0.36 **[June, 2016 &Dec. 2017]**

(B) 0.64

(C) -0.6

(D) 0.6

25. If the coefficient of correlation between x and y variable is -0.90 then what will be the coefficient of determination **[June 2016]**

(A) 0.9

(B) -0.9

(C) 0.19

(D) 0.81

26. If the sum of the squares of rank differences in the marks of 10 students in two subjects is 44, then the coefficient of rank correlation is _____.

(A) -0.65

(B) -0.73

(C) 0.73

(D) 0.65

27. Correlation between temperature and power consumption is **[June 2017]**

(A) Positive

(B) Negative

(C) No Correlation

(D) Perfectly Negative

28. Coefficient of correlation between x and y is 0.6. If both x and y are multiplied by -1. Then resultant coefficient of correlation is

(A) -0.6

(B) 0.6

(C) 0.7

(D) -0.7

29. If there is a constant increase in the series then the obtained graph is

(A) Convex **[Dec. 2017]**

(B) Concave

(C) Parabola

(D) Straight line from left to right

30. Ranks of two characteristics by two judges are in reverse order then find the value of Spearman rank correlation co-efficient

(A) –1 **[June 2009]**

(B) 0

(C) 1

(D) 0.75

31. If 'P' is the simple correlation coefficient, the quantity P^2 is known as :**[June 2010]**

(A) Coefficient of determination

(B) Coefficient of Non-determination

(C) Coefficient of alienation

(D) None of the above

32. If the correlation coefficient between x and y is r, then between $U = \frac{x-5}{10}$ and $V = \frac{y-7}{2}$ is

[June 2010]

(A) r

(B) –r

(C) $\frac{(r-5)}{2}$

(D) $\frac{(r-7)}{10}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

33. Three competitors in a contest are ranked by two judges in the order 1,2,3 and 2,3,1 respectively. Calculate the Spearman's rank correlation coefficient. **[June 2011]**

(A) –0.5
(B) –0.8
(C) 0.5
(D) 0.8

34. If the covariance between variables X and Y is 25 and variance of X and Y are respectively 36 and 25, then the coefficient of correlation is **[June 2012]**

(A) 0.409
(B) 0.416
(C) 0.833
(D) 0.0277

35. The covariance between two variables is **[May 2018]**

(A) Strictly positive
(B) Strictly negative
(C) Always Zero
(D) Either positive or negative or zero

36. The coefficient of determination is defined by the formula **[May 2018]**

(A) $r^2 = 1 - \frac{\text{unexplained variance}}{\text{total variance}}$

(B) $r^2 = \frac{\text{explained variance}}{\text{total variance}}$

(C) Both (A) and (B)
(D) None

37. In which method of Deviations, only the directions of change (Positive direction/Negative direction) in the variables are taken into account for calculation of **[May 2018]**

(A) Coefficient of SD
(B) Coefficient of regression
(C) Coefficient of correlation
(D) None

38. Correlation coefficient is _____ of the units of measurement. **[May 2018]**

(A) dependent
(B) independent
(C) both
(D) none

39. In case speed of an automobile and the distance required to stop the car after applying brakes correlation is **[May 2018]**

(A) Positive
(B) Negative
(C) Zero
(D) None

40. A relationship $r^2 = 1 - \frac{500}{300}$ is not possible **[May 2018]**

(A) True
(B) False
(C) Both
(D) None

41. Rank correlation coefficient lies between **[May 2018]**

(A) 0 to 1
(B) –1 to +1 inclusive of these value
(C) –1 to 0
(D) Both

42. Given that

X	–3	–3/2	0	3/2	3
Y	9	9/4	0	9/4	9

Then Karl Pearson's coefficient of correlation is **[June 2019]**

(A) Positive
(B) Zero
(C) Negative
(D) None

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

43. Find the probable error if $r = \frac{2}{\sqrt{10}}$ and $n = 36$ **[June 2019]**

(A) 0.6745
(B) 0.067
(C) 0.5287
(D) None

44. Given the following series:

X	10	13	12	15	8	15
Y	12	16	18	16	7	18

The rank correlation coefficient r = **[June 2019]**

(A) $1-\frac{6\sum d^2+\sum_{i=1}^{2}\frac{m_1(m_1^2-1)}{12}}{n(n^2-1)}$

(B) $1-\frac{6\left[\sum d^2+\sum_{i=1}^{3}\frac{m_1(m_1^2-1)}{12}\right]}{n(n^2-1)}$

(C) $1-\frac{6\sum d^2+\sum_{i=1}^{2}\frac{m_1(m_1^2-1)}{12}}{n(n^2-1)}$

(D) $1-\frac{6\sum d^2+\sum_{i=1}^{3}\frac{m_1(m_1^2-1)}{12}}{n(n^2-1)}$

45. Determine Spearman's rank correlation coefficient from the given data $\sum d^2 = 30.\ n = 10$: **[June 2019]**

(A) r = 0.82
(B) r = 0.32
(C) r = 0.40
(D) None of the above

46. Find the coefficient of correlation.

$2x + 3y = 2$

$4x + 3y = 4$ **[Nov.2019]**

(A) −0.71
(B) 0.71
(C) −0.5
(D) 0.5

47. What is the coefficient of correlation from the following data?

x	1	2	3	4	5
y	5	4	3	2	6

[Nov. 2019]

(A) 0
(B) −0.75
(C) −0.85
(D) 0.82

48. If the plotted points in a scatter diagram lie from upper left to lower right, then correlation is **[Nov. 2019]**

(A) Positive
(B) Negative
(C) Zero
(D) None of these

49. Which of the following is spurious correlation? **[Nov. 2020]**

(A) Correlation between two variables having no casual relationship
(B) Negative correlation
(C) Bad relation between two variables
(D) Very low correlation between two variables

50. Scatter diagram does not help us to? **[Nov. 2020]**

(A) Find the type of correlation
(B) Identify whether variables correlated or not
(C) Determine the linear or non-linear correlation
(D) Find the numerical value of correlation coefficient

51. The covariance between two variables is **[Nov. 2020]**

(A) Strictly positive
(B) Strictly negative
(C) Always Zero
(D) Either positive or negative or zero

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

52. For the set of observation {(1, 2), (2, 5), (3, 7), (4, 8), (5, 10)} the value of Karl-Person's coefficient of correlation is approximately given by **[Jan. 2021]**

(A) 0.755

(B) 0.655

(C) 0.525

(D) 0.985

53. The straight-line graph of the linear equation y = a + b x, slope is horizontal if: **[July 2021]**

(A) $b = 1$

(B) $b \neq 0$

(C) $b = 0$

(D) $a = b \neq 0$

54. If the data points of (X, Y) series on a scatter diagram lie along a straight line that goes downwards as X-values move from left to right, then the data exhibit..... correlation. **[Dec. 2021]**

(A) Direct

(B) Imperfect indirect

(C) Indirect

(D) Imperfect direct

55. The coefficient of rank correlation between the ranking of following 6 students in two subjects Mathematics and Statics is:

Mathematics	3	5	8	4	7	10
Statistics	6	4	9	8	1	2

(A) – 0.25 **[Dec. 2022]**

(B) 0.35

(C) 0.38

(D) 0.20

56. Pearson's correlation Coefficient between x and y is :- **[Dec. 2022]**

(A) $\frac{\text{cov}(x,y)}{S_x \cdot S_y}$

(B) $\frac{\text{cov}^2(x,y)}{S_x \cdot S_y}$

(C) $\frac{(S_x, S_y)^2}{\text{cov}(x,y)}$

(D) $\frac{(S_x, S_y)}{\text{cov}(x,y)}$

57. Given that $r = 0.4$ and $n = 81$, determine the limits for the population correlationcoefficient. **[June. 2022]**

(A) (0.333, 0.466)

(B) (0.367, 0.433)

(C) (0.337, 0.463)

(D) (0.373, 0.427)

58. Spearman's rank correlation coefficient r_R is given by **[Jun. 2022]**

(A) $1 - \frac{6\sum d_i^2}{n(n^2+1)}$

(B) $1 + \frac{6\sum d_i^2}{n(n^2-1)}$

(C) $1 + \frac{6\sum d_i^2}{n(n^2+1)}$

(D) $1 - \frac{6\sum d_i^2}{n(n^2-1)}$

59. _____ may be defined as the ratio of covariance between the two variables to the product of the standard deviations of the two variables. **[Dec. 2023]**

(A) Scatter diagram

(B) Karl Pearson's correlation coefficient

(C) Spearman's correlation coefficient

(D) Coefficient of concurrent deviation

60. If the coefficient of correlation is 0.8 and regression coefficient $b_{xy} = 0.32$ then what is the value of regression coefficient b_{yx}? **[Dec. 2023]**

(A) 2

(B) 1

(C) 0.52

(D) 0.48

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

61. If Cov (X, Y) = –2.15, $S_X = 1.30$, $S_Y = 2.50$ then correlation Coefficient r is

(A) –0.66 **[Jun. 2024]**

(B) 0.66

(C) 0.76

(D) 0.99

62. For a group of 10 students the sum of squares of difference in ranks for Physics and Chemistry marks was 60, what is the value of rank correlation coefficient. (Choose the nearest value)

(A) 0.636 **[Jun. 2024]**

(B) 0.725

(C) 0.698

(D) 0.842

63. Spearman's Correlation Coefficient is used to check **[Jun. 2024]**

(A) The scattering of the data

(B) The relationship in variables

(C) The median of a data

(D) The range of a data

64. The range of the coefficient of correlation is

(A) between –1 and 1

(B) between –1 and 1 including 1

(C) between –1 and 1 including –1

(D) between –1 and 1 including –1, 1

65. The variance of two variables 'x' and 'y' are 16 and 25 and covariance between 'x' and 'y' is 18.5. Another two variables 'u' and 'v' are defined as $u = (x - 3)/2$ and $v = (y - 2)/3$,then coefficient of correlation between 'u' and 'v' is: **[Sept. 2024]**

(A) 0.85

(B) 0.875

(C) 0.90

(D) 0.925

66. In case of "Insurance companies' profits" and "The number of claims they have to pay", there exists a: **[Sept. 2024]**

(A) Positive correlation

(B) Negative correlation

(C) No correlation

(D) It cannot be predicted

67. Which one of the following statement is wrong? **[Jan. 2025]**

(A) The normal curve is bell shaped.

(B) The correlation coefficient between X and Y is 2.6.

(C) If r = 0 regression lines are perpendicular to each other.

(D) For any two events A and B, $P(A \cup B) = P(A) + P(B) - P(A \cap B)$.

68. You are given the following data relating to a frequency distribution of 10 observations:

$\Sigma X = 50$, $\Sigma Y = 60$, $\Sigma X^2 = 300$, $\Sigma Y^2 = 352$, $\Sigma(X+Y)^2 = 1372$

thenCov(X, Y) is **[Jan. 2025]**

(A) 2

(B) 4

(C) 6

(D) 8

69. Compute the rank correlation coefficient from the following data: **[Jan. 2025]**

$n = 10$, $\Sigma d^2 = 5$

(A) 0.95

(B) 0.97

(C) 0.96

(D) 0.99

70. The correlation coefficient between X and Y is 0.2 and Var(X) = 5Var(Y) then regression coefficient of X on Y is **[Jan. 2025]**

(A) $\frac{1}{5}$

(B) $\sqrt{5}$

(C) $\frac{1}{\sqrt{5}}$

(D) 5

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	D	2.	D	3.	A	4.	B	5.	B
6.	B	7.	B	8.	C	9.	B	10.	B
11.	B	12.	B	13.	A	14.	C	15.	A
16.	C	17.	B	18.	A	19.	D	20.	B
21.	C	22.	A	23.	B	24.	B	25.	D
26.	C	27.	A	28.	B	29.	D	30.	A
31.	A	32.	A	33.	A	34.	C	35.	D
36.	C	37.	C	38.	B	39.	A	40.	A
41.	B	42.	B	43.	B	44.	B	45.	A
46.	A	47.	A	48.	B	49.	A	50.	D
51.	D	52.	D	53.	C	54.	C	55.	A
56.	A	57.	C	58.	D	59.	B	60.	A
61.	A	62.	A	63.	B	64.	D	65.	D
66.	B	67.	B	68.	C	69.	B	70.	C

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 14
REGRESSION

1. If the two regression equations areY = 4x and 16x = y find correlation coefficient 'r'.

(A) $\frac{1}{4}$

(B) $\frac{-1}{4}$

(C) $\frac{1}{2}$

(D) $\frac{-1}{2}$

2. Regression coefficient of x on y is m, u = x – 4, v = y – 4 then b_{uv} =

(A) m

(B) $\frac{1}{m}$

(C) –m

(D) $\frac{-1}{m}$

3. If variance of x is 9 & 3x+2y = 10, 4x+10y = 20 then r is

(A) 0.5163

(B) – 0.5163

(C) –0.33

(D) 0.33

4. If two regression lines are (a) 2x+y = 9 (b) –x–y = 0 and $\bar{x}$= 9, $\bar{y}$= ?

(A) –9

(B) 9

(C) 10

(D) –8

5. If b_{xy} = -1/8, r = $-\frac{1}{2}$, b_{yx}= ? **[June 2009]**

(A) 2

(B) 4

(C) –2

(D) –4

6. Find $\bar{x}$ and $\bar{y}$ if two regression lines are 2x+7y = 43, 3x+5y = 4

(A) (–11, 17)

(B) (11, –17)

(C) (–17, 11)

(D) (17, –11)

7. If two regression equation are (i) 7x–3y–18 = 0 (ii) 4x–y–11 = 0 find regression equation of y on x

(A) 7x–3y–18 = 0 **[Dec. 2009]**

(B) 4x–y–11 = 0

(C) Either (A) or (B)

(D) Not possible

8. _____ of Regression Coefficient is greater than Correlation Coefficient

(A) GM **[June 2010]**

(B) AM

(C) HM

(D) SD

9. If (i) x+2y–8 = 0 (ii) 2x+3y–8 = 0 are two regression equations then, which is y on x: **[Dec. 2010]**

(A) 2x+3y-8 = 0

(B) x+2y – 8 = 0

(C) Either (A) or (B)

(D) Neither (A) nor (B)

10. Regression coefficients are **[Dec. 2010]**

(A) Independent of origin but depends on scale.

(B) Independent of scale but depends on origin.

(C) Depends on both origin and scale.

(D) Independent of both origin and scale.

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

11. If $\bar{x} = 16$, $\sigma_x = 4.8$ and $\bar{y} = 20$, $\sigma_y = 9.6$. Find regression coefficient of x on y if r = 0.6 **[Dec. 2010]**

(A) 1.2
(B) 0.3
(C) 0.25
(D) 0.50

12. For a bivariate data, two lines of regression are 40x–18y–214 = 0 and 8x–10y+66 = 0 then find the values of $\bar{x}$ and $\bar{y}$. **[June 2011& 12]**

(A) (17, 13)
(B) (-17, 13)
(C) (17, -13)
(D) (13, 17)

13. For a bivariate data, the lines of regression of y and x, and x on y are respectively 2.5y–x = 35 and 10x–y = 70, then the correlation coefficient r is equal to: **[Dec. 2011]**

(A) 0.33
(B) 0.25
(C) 0.20
(D) 0.40

14. If one of regression coefficient is _____ unit, the other must be _____ unity. **[Dec. 2011]**

(A) More than, more than
(B) Less than, less than
(C) More than, less than
(D) None of these

15. If y is dependent variable and x is independent variable and the S.D. of x and y are 5 and 8 respectively and Co-efficient of correlation between x and y is 0.8. Find the Regression coefficient of y on x. **[Dec. 2011]**

(A) 0.5
(B) 1.28
(C) 0.65
(D) 1.45

16. If $\bar{x}$ and $\bar{y}$ are the A.M's, σ_x and σ_y are the S.D's, b_{yx}, b_{xy} are regression coefficient of variables $\bar{x}$ and $\bar{y}$ respectively. The point of intersection of regression lines x on y and y on x is _____ **[June 2012]**

(A) (σ_x, σ_y)
(B) (b_{yx}, b_{xy})
(C) $(\bar{x}, \bar{y})$
(D) None of these

17. The coefficient of correlation between two variables x and y is the simple _____ of the regression coefficients.

(A) AM **[June 2012]**
(B) GM
(C) HM
(D) Median

18. If two variables are uncorrelated then regression line are _____ to each other

(A) Parallel **[June 2012]**
(B) Coincident
(C) Perpendicular
(D) Either (A) or (B)

19. If y = 18x+5 is the regression line of x on y then the value of b_{xy} is _____ **[Dec. 2012]**

(A) $\frac{5}{18}$
(B) $\frac{1}{18}$
(C) $\frac{-5}{18}$
(D) $\frac{-1}{18}$

20. For certain x and y series which are correlated, the two lines of regression are 5x–6y+9 = 0, 15x–8y+130 = 0. The correlation coefficient is: **[Dec. 2012]**

(A) $\frac{2}{3}$
(B) $\frac{-2}{3}$
(C) $\frac{-1}{3}$
(D) $\frac{1}{3}$

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

21. If r is the Karl Pearson's coefficient of correlation in a bivariate distribution, the two regression lines are at right angles when _____ **[June 2013]**

(A) r = 1

(B) r = -1

(C) r = 0

(D) r = ±1

22. If r = +1 or –1 then the two regression lines **[Dec. 2013]**

(A) Perpendicular

(B) Parallel

(C) Coincident

(D) Overlapping

23. If mean of x and y is 20 and 40 respectively and the regression coefficient y on x is 1.608 then the regression line of y on x is: **[Dec. 2013]**

(A) y = 1.608 + 7.84x

(B) y = 7.84 + 1.608x

(C) x = 1.608 + 7.84x

(D) x = 7.84 + 1.608y

24. The equation for two lines of regression for x and y are 5x = 22+y and 64x = 24+45y, then the value of regression coefficient of y on x will be **[June 2016]**

(A) $\frac{22}{5}$

(B) $\frac{45}{64}$

(C) $\frac{5}{22}$

(D) $\frac{64}{45}$

25. Two regression lines for bivariate data re 2x–5y+6 = 0 and 5x–4y+3 = 0. Then the coefficient of correlation shall be _____ **[June 2014]**

(A) $\frac{-2\sqrt{2}}{5}$

(B) $\frac{2\sqrt{2}}{5}$

(C) $\frac{5}{2\sqrt{2}}$

(D) $\frac{-5}{2\sqrt{2}}$

26. If the mean of two variables x and y are 3 and 1 respectively. Then the equation of two regression lines are _____ **[June 2014]**

(A) 5x-2y+22 = 0 & 6x+2y–20 = 0

(B) 5x+2y–22 = 0 6x–2y+20 = 0

(C) 5x+2y–17 = 0 & 6x+2y–20 = 0

(D) None of these

27. Which of the following is true? **[Dec. 2015]**

(A) $b_{xy} = r.\, s_y/s_x$

(B) $b_{yx} = r.\, s_y/s_x$

(C) $b_{yx} = \frac{\sum xy}{s_x}$

(D) $b_{xy} = \frac{\sum xy}{s_x}$

28. The regression are as follows:

Regression equation of x on y : 5x–y = 22

Regression equation of y on x : 64x–45y = 24

What will be the mean of x and y? **[June 2014]**

(A) (6, 8)

(B) (8, 6)

(C) (–6, –8)

(D) (8, –6)

29. The two lines of regression become identical when **[June 2016]**

(A) r = 1

(B) r = –1

(C) r = 0

(D) (A) or (B)

30. Regression lines pass through the _____

(A) AM

(B) GM

(C) HM

(D) Mode

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

31. If the regression line of x on y is 3x+2y = 100, then find the value of b_{xy}= ? [Dec. 2016]

(A) $\frac{2}{3}$

(B) $\frac{-2}{3}$

(C) $\frac{3}{2}$

(D) $\frac{-3}{2}$

32. 5y = 9x–22 and 20x = 9y+350 are two regression lines. Find the correlation coefficient between x and y. [Dec. 2017]

(A) 0.45

(B) 0.80

(C) 0.90

(D) 1

33. The two regression equations are:

2x + 3y + 18 = 0

x + 2y – 25 = 0

Find the value of y if x = 9 [June 2009]

(A) –8

(B) 8

(C) –12

(D) 0

34. Which of the following regression equations represent regression line of Y on X: 7x + 2y + 15 = 0, 2x + 5y + 10 = 0 [Dec. 2009]

(A) 7x + 2y + 15 = 0

(B) 2x + 5y + 10 = 0

(C) Both (A) and (B)

(D) None of these

35. If the two lines of regression are

x + 2y – 5 = 0 and 2x + 3y – 8 = 0

The regression line of y on x is [June 2010]

(A) x + 2y – 5 = 0

(B) 2x + 3y – 8 = 0

(C) Any of the two line

(D) None of the two lines

36. Out of the following which one affects the regression co-efficient. [Dec. 2011]

(A) Change of Origin Only

(B) Change of scale Only

(C) Change of scale & origin both

(D) Neither Change of origin nor change of scale

37. If the regression equations are $8x-3y+50=0$ and $14x-7y-60=0$ and standard deviation of y is 1. The coefficient of correlation is = _____ [June 2013]

(A) 2

(B) 1

(C) 0.87

(D) –0.87

38. Two regression lines are

16x – 20y + 132 = 0

80x – 36y – 428 = 0

The value of the correlation coefficient is [June 2015]

(A) 0.6

(B) –0.6

(C) 0.54

(D) 0.45

39. The points from which the two regression lines passes through [Dec. 2016]

(A) Represent means

(B) Represent S.Ds

(C) (A) and (B)

(D) None of these

40. If two regression lines are x + y =1 and x – y = 1 then mean values of x and y will be: [June 2017]

(A) 0 and 1

(B) 1 and 1

(C) 1 and 0

(D) –1 and –1

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

41. A.M. of regression coefficients is

(A) Equal to r **[June 2019]**
(B) Greater than or equal to r
(C) Half of r
(D) None

42. If the regression line of y on x is given by y = x + 2 and Karl Pearson's coefficient of correlation is 0.5 then $\frac{\sigma_y^2}{\sigma_x^2}$ = _____.

(A) 3 **[June 2019]**
(B) 2
(C) 4
(D) None

43. If two line of regression are x + 2y – 5 = 0 and 2x + 3y – 8 = 0, then x + 2y – 5 = 0 is

(A) y on x **[Nov. 2019]**
(B) x on y
(C) both
(D) None

44. The interesting point of the two regression lines: y on x and x on y is **[Jan. 2021]**

(A) (0, 0)
(B) $(\bar{x}, \bar{y})$
(C) (b_{yx}, b_{xy})
(D) (1, 1)

45. Given that the variance of x is equal to the square of standard deviation σ_y and the regression line of y on x is y = 40 + 0.5 (x-30). Then regression line of x on y is

(A) y = 40 + 4 (x – 30) **[Jan. 2021]**
(B) y = 40 + (x – 30)
(C) y = 40 + 2 (x – 30)
(D) x = 30 + 2 (x – 40)

46. If y = 9x and x = 0.01y then r is equal to:

(A) –0. 1 **[July 2021]**
(B) 0.1
(C) +0.3
(D) –0.3

47. If byx = –1.6 and bxy = –0.4, then r_{xy} will be:

(A) 0.4 **[July 2021]**
(B) –0.8
(C) 0.64
(D) 0.8

48. If the slope of the regression line is calculated to be 5.5 and the intercept 15 then the value of Y and X is 6 is:

(A) 88 **[July 2021]**
(B) 48
(C) 18
(D) 78

49. The sum of square of any real positive quantities and its reciprocal is never less than: **[July 20021]**

(A) 4
(B) 2
(C) 3
(D) 4.

50. For any two variables x and y the regression equations are given as 2x + 5y – 9 = 0 and 3x – y – 5 = 0. What are the A.M. of x and y?

(A) 2, 1 **[Dec. 2021]**
(B) 1, 2
(C) 4, 2
(D) 2, 4

51. The intersecting point of two regression lines falls at X-axis. If the mean of X-values is 16, the standard deviations of X and Y are respectively, 3 and 4, then the mean of Y-values is **[Dec. 2021]**

(A) $\frac{16}{3}$
(B) 4
(C) 0
(D) 1

52. The regression coefficients remain unchanged due to **[Dec. 2021]**

(A) Shift of origin
(B) Shift of scale
(C) Always
(D) Never

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

53. The equations of the two lines of regression are $4x + 3y + 7 = 0$ and $3x + 4y + 8 = 0$. Find the correlation coefficient between x and y. **[Dec. 2022]**

(A) –0.75
(B) 0.25
(C) –0.92
(D) 1.25

54. The regression equation are $2x + 3y + I = 0$ and $5x + 6y + 1 = 0$, then Mean of x and y respectively are **[Dec. 2022]**

(A) –1,–1
(B) –1,1
(C) 1, –1
(D) 2,3

55. If b yx = 0.5, b xy = 0.46 then the value of correlation coefficient is: **[Dec. 2022]**

(A) 0.23
(B) 0.25
(C) 0.39
(D) 0.48

56. For variables X and Y, we collect the four observations with $\sum X = 10; \sum Y = 14; \sum X^2 = 65; \sum Y^2 = 5$ and $\sum XY = 3$. What is the regression line of Y on X? **[Jun. 2023]**

(A) Y = -0.8 X -5.5
(B) Y=0.8X-5.5
(C) Y=-0.8X+5.5
(D) .Y = 0.8X+5.5

57. The regression lines will be perpendicular to each other when the value of r is

(A) 1
(B) -1
(C) 1/2
(D) 0

[Jun. 2023]

58. If the regression equations are $x + 2y - 5 = 0$ and $2x + 3y - 8 = 0$, then the mean of x and the mean of y are _____, respectively:

(A) -3and 4
(B) 2 and 4
(C) 1 and 2
(D) 2 and 1

[Jun. 2023]

59. If the regression line of y and x and of x on y are given by 10x – 290 = –20y and 7y – 104 = –4x. Then the arithmetic means of x and y are given by **[Dec. 2023]**

(A) 5, 12
(B) 7, 12
(C) 12, 5
(D) 5, 7

60. If the Regression coefficient (r_{yx}) of y on x is greater than unity, then other Regression coefficient (r_{xy}) of x on y is: **[Dec. 2023]**

(A) Less than one
(B) Greater than one
(C) Equal to one
(D) Equal to zero

61. If 4y – 6x = 18 is regression line of y on x and coefficient of correlation between x and y is 0.8. What is the value of regression coefficient of x on y? **[Dec. 2023]**

(A) 0.2448
(B) 0.4267
(C) 0.5733
(D) 0.7441

62. If the regression lines are 3x – 4y + 8 = 0 and 4x – 3y = 1, then the correlation coefficient between x and y is _____.

(A) 3/4
(B) 3/8
(C) 4/8
(D) ¼

[Jun. 2024]

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

63. Which of the following statement is correct? **[Sept. 2024]**

(A) Both regression coefficients may be less than unity.

(B) Regression coefficients are independent of origin and scale.

(C) The regression lines of two independent variables are parallel to each other.

(D) If two regression lines coincide with each other, there is no correlation between the variates.

64. Which one of the following statement is correct regarding limit of the two regression coefficients? **[Sept. 2024]**

(A) No limit.

(B) Must be positive.

(C) One positive and the other negative.

(D) Product of the regression coefficients must be numerically less than unity.

65. If $r = 0.8, b_{yx} = 0.6, b_{xy} = 0.5, \bar{x} = 5$ and $\bar{y} = 3$, then the regression equation y on x is **[Jan. 2025]**

(A) $y = 0.6x - 6.0$

(B) $y = 0.96x - 3.7$

(C) $y = 0.8x$

(D) $y = 0.6x$

66. If $r = 0.8$ then coefficient of non-determination is **[Jan. 2025]**

(A) 0.36

(B) 0.64

(C) 0.20

(D) –0.36

SPACE FOR NOTES

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	C	2.	A	3.	B	4.	A	5.	C
6.	C	7.	A	8.	B	9.	B	10.	A
11.	B	12.	D	13.	C	14.	C	15.	B
16.	C	17.	B	18.	C	19.	B	20.	A
21.	C	22.	C	23.	B	24.	D	25.	B
26.	C	27.	B	28.	A	29.	D	30.	A
31.	B	32.	C	33.	B	34.	B	35.	A
36.	B	37.	C	38.	A	39.	A	40.	C
41.	B	42.	C	43.	A	44.	B	45.	D
46.	C	47.	B	48.	B	49.	B	50.	A
51.	C	52.	A	53.	A	54.	C	55.	D
56.	C	57.	D	58.	C	59.	A	60.	A
61.	B	62.	A	63.	A	64.	D	65.	D
66.	A								

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 15
INDEX NUMBER

1. If in 2005 the prices are 2.78% more than that in 1998 then price index number is

(A) 97.22
(B) 102.78
(C) 2.78
(D) 202.78

2. If the value increases by 20% then index numbers is **[Dec. 2011]**

(A) 20
(B) 120
(C) 125
(D) 80

3. Time reversed test in satisfied by

(A) Laspreye's Index
(B) Passche's Index
(C) Bowley's Index
(D) Fishers's Index

4. Find Aggregate Price Index

Yr	P_1	P_o
1	10	5
2	10	5
3	20	15

(A) 150
(B) 155
(C) 165
(D) 160

5. If the price of commodity increases by 20% and Wage increases by 40% then change in real wages is

(A) 20%
(B) 16.66%
(C) 25%
(D) 10%

6. Circular Test is **[June 2014]**

(A) $P_{01} \times P_{10} = 1$
(B) $P_{01} \times Q_{01} = V_{01}$
(C) $P_{01} \times P_{12} \times P_{20} = 1$
(D) None of the above

7. If the salary of worker increase from 100 to 200 and price index increase from 300 to 500 then find the real wage.

(A) 133.33
(B) 125
(C) 120
(D) 110

8. Which test is not satisfied by Fisher Ideal index no?

[June 2009, Dec. 2011 & May 2017]

(A) Unit Test
(B) Factor Reversal Test
(C) Time Reversal Test
(D) Circular Test

9. Which mathematical average did Fisher take for LaspayrePaasche's index number? **[June 2014]**

(A) GM
(B) HM
(C) AM
(D) None of these

10. $\Sigma p_1 q_1 / \Sigma p_0 q_0$ refers to which test?

(A) Circular Test **[June 2009]**
(B) Factor Reversal Test
(C) Time Reversal Test
(D) None of these

11. Paasche's index numbers consider which year quantity as weight? **[June 2009]**

(A) Base Year
(B) Current Year
(C) Either Base or Current Year
(D) Neither Base nor Current Year

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. Time Reversal Test and Factor Reversal Test is satisfied by which number **[Dec. 2009, May 2018]**

(A) Laspayre's Index
(B) Paasche's Index
(C) Bowley's Index
(D) Fisher Index

13. The price index number of Bowley is 150. If the price index number of Laspayre's is 180, calculate Paasche's price index **[June 2010& 13]**

(A) 120
(B) 133
(C) 125
(D) None of these

14. Consumer price index number is also known as **[June 2010]**

(A) Cost of living Index
(B) Bowley's Index
(C) Fisher's Index
(D) None of these

15. Base yearCurrent year

1970		1975	
P_0	q_0	P_1	q_1
1	6	3	5
3	5	8	5
4	8	10	6

Calculate Paasche's index no.

(A) 198.9 **[June 2010& 12]**
(B) 261.36
(C) 209.5
(D) 236.5

16. If Laspayre's index is 90 and Paasche's index is 160 then Fisher index is

(A) 125 **[Dec. 2010]**
(B) 120
(C) 110
(D) None of these

17. Wholesale Price Index (WPI) is given by

(A) L **[June 2011]**
(B) P
(C) F
(D) B

18. Fisher's ideal index is obtained by:

(A) AM of L & P **[June 2009& 11]**
(B) HM of L & P
(C) GM of L & P
(D) Reciprocals of L and P

19. The index number of prices at a place in the year 2008 is 225 with 2004 as the base year then there is: **[June 2011]**

(A) 225% Increase
(B) 125% Increase
(C) 75% Decrease
(D) 100% Increase

20. The simple index number for the Current year using simple aggregative method for the following data is **[Nov. 2011]**

Commodity	Base Year	Current Year
Base	Price	Price
Wheat	80	100
Rice	100	150
Gram	120	250
Pulses	200	300

(A) 150
(B) 175
(C) 160
(D) 130

21. Calculate the cost of living index number for the year 1975 is **[June 2012]**

Commodity	1970		1975	
	Price	Qty.	Price	Qty.
A	1	6	3	5
B	3	5	8	5
C	4	8	10	6

(A) 260.37
(B) 245.23
(C) 210.54
(D) 273.96

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

22. If Fisher index number is 150, and Paasche's index number is 144 then Laspayre's index number is **[Dec. 2012]**

(A) 156

(B) 156.25

(C) 155.50

(D) 158.75

23. Net monthly salary of an employee was Rs. 3000. The consumer price index in 1985 is 250 with 1980 as base year. If he has to be rightly compensated, then additional Dearness Allowance to be paid to the employee is _____.

[Dec. 2012]

(A) 4000

(B) 3000

(C) 4500

(D) 5000

24. Time Reversal Test is satisfied by which of the following? **[Dec. 2016]**

(A) Laspayre's

(B) Paasche

(C) Bowley

(D) Fisher

25. In 2005 price index is 286 with base 1995 then how much price increased in 2005 with base 1995? **[June 2013]**

(A) 286

(B) 86

(C) 186

(D) 180

26. What is the formula for calculating the Deflated Value is

[Dec. 2013]

(A) $\frac{\text{Current Year Index} \times \text{Current Year Value}}{\text{Base Year Index}}$

(B) $\frac{\text{Current Year Value}}{\text{Current Year Index}} \times 100$

(C) $\frac{\text{Current Year Index}}{\text{Current Year Value}} \times 100$

(D) None of these

27. The index number for the year 2012 taking 2011 as base using simple average of price relatives method from the data below is:

Commodity	A	B	C	D	E
Price in 2011	115	108	95	80	90
Price in 2012	125	117	108	95	95

(A) 107.7

(B) 110.9

(C) 113.6

(D) 122.5

28. Which of the following statements is true? **[June 2014]**

(A) Paasche's index number is based on base year quantity

(B) Fisher's index satisfies the circular test

(C) Arithmetic mean is the most appropriate average for constructing the index number

(D) Splicing mean constructing one continuous series from two different indices on the basis of common base

29. Monthly salary of an employee was Rs. 10,000 in the year 2000 and it was increased to Rs. 20,000 in the year 2013 while the consumer price index number is 240 in year 2013 with the base year 2000, what should be his salary in comparison of consumer price index in the year 2013?

(A) 14000 **[June 2014]**

(B) 20000

(C) 24000

(D) None of these

30. $\Sigma p_n q_0 = 1180,\ \Sigma p_0 q_0 = 1170, \Sigma p_n q_n = 1064,\ \Sigma p_0 q_n = 1100$ then Fisher ideal index number is

[Dec. 2014]

(A) 101.25

(B) 100.59

(C) 99.33

(D) 98.76

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

31. When the prices are decreased by 30% then the index number is now **[Dec. 2014]**

(A) 130
(B) 70
(C) 30
(D) 170

32. Factor reversal test is **[Dec. 2016]**

(A) $P_{01} \times P_{10} = 1$
(B) $P_{01} \times P_{12} \times P_{20} = 1$
(C) $P_{01} \times Q_{01} = V_{01}$
(D) $\frac{P_{10}}{P_{01}} = 1$

33. If with a rise of 10% in prices the wages are increased by 20%, the real wage increases by **[June 2015]**

(A) More than 10%
(B) Equal to 10%
(C) Less than 10%
(D) Indeterminate

34. Consumer price index number for the year 1957 was 313 with 1940 as the base year. The average monthly wages in 1957 of the workers in the factory be Rs. 160/- their real wages is **[Dec. 2013]**

(A) 51.11
(B) 59.5
(C) 198.7
(D) 195.6

35. If $\Sigma p_0 q_0 = 1360, \Sigma p_n q_0 = 1900, \Sigma p_0 q_0 = 1880$ thenthe Laspayre's index number is **[June 2016]**

(A) 71.57
(B) 139.70
(C) 152.4
(D) 89.6

36. Index number are used in **[Dec. 2016]**

(A) Economic
(B) Statistics
(C) Both (A) and (B)
(D) Neither (A) nor (B)

37. The monthly income of a person in the year 2014 was Rs. 8,000 and CPI was 160. The CPI is 200 in the year 2017. What will be the additional dearness allowance for the year 2017. **[June 2017]**

(A) 2400
(B) 2750
(C) 2500
(D) None of these

38. For knowing consumer price index number we want to collect data from **[Dec. 2017]**

(A) Retail shop prices
(B) Wholesale shop prices
(C) Fair prices
(D) Government depots

39. The circular test is an extension **[Dec. 2017]**

(A) Unit Test
(B) Factor Reversal Test
(C) Time Reversal Test
(D) None of these

40. In Laspeyre's Index Number _____ are used as weights? **[Dec. 2009]**

(A) Base year price
(B) Current year price
(C) Base year quantities
(D) Current year quantities

41. If $\Sigma P_0 Q_0 = 116, \Sigma P_0 Q_1 = 140$

$\Sigma P_1 Q_0 = 97, \Sigma P_1 Q_1 = 117$

then Fisher's ideal index number is ___. **[June 2012]**

(A) 184
(B) 83.59
(C) 119.66
(D) 120

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

42. Find the Paasche's Index number for prices from the following data taking 1970 as the base year. **[June 2012]**

Commodity	1970		1975	
	Price	Commodity	Price	Commodity
A	1	6	3	5
B	3	5	8	5
C	4	8	10	6

(A) 261.36
(B) 265.48
(C) 274.32
(D) 282

43. An index time series is a list of _____ number of two or more period of time, where each index number employs the same base year can **[Dec. 2013]**

(A) Index
(B) Absolute
(C) Relative
(D) Sample

44. _____ play a very important role in the construction of index numbers. **[June 2015]**

(A) Weights
(B) Classes
(C) Estimations
(D) None

45. Purchasing power of money is **[June 2016]**

(A) Reciprocal of price index number
(B) Equal to price index number
(C) Unequal to price index number
(D) None of these

46. In the year 2010 the monthly salary of a clerk was Rs. 24,000. The consumer price Index was 140 in the year 2010, which rises to 224 in the year 2016. If he has to be rightly compensated, what additional monthly salary should be paid to him? **[June 2016]**

(A) Rs. 14,400
(B) Rs. 38,400
(C) Rs. 7,200
(D) None of these

47. The suitable index number for the comparison of changes in price level of every year is _____. **[June 2016]**

(A) Fixed Base Index Number
(B) Fisher's Ideal Index Number
(C) Chain Base Index Number
(D) Both (A) and (C)

48. Following is the data concerning to commodities A, B, C and D in the base period 1992 and current period 1993.

[Dec. 2016]

Commodities	Base Year 1992		Current Year 1993	
	Price	Quantity	Price	Quantity
A	3	18	4	15
B	5	6	5	9
C	4	20	6	26
D	1	14	3	15

The Paasche's price index number is:

(A) 148.25
(B) 146.41
(C) 144.25
(D) None of these

49. If Laspeyre's index number (L) and Paasche's index number (P) are known, then one can compute Fisher's index number (F) by: **[June 2017]**

(A) $F = LP$
(B) $\sqrt{F} = LP$
(C) $F = \frac{1}{LP}$
(D) $F^2 = LP$

50. Fishers index number is based on: **[Dec.2017]**

(A) The arithmetic mean of Laspeyre's and Paasche's index numbers
(B) The median of Laspeyre's and Paasche's index numbers
(C) The mode of Laspeyre's and Paasche's index numbers
(D) None of the above

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

51. Price relative is equal to: **[Dec.2017]**

(A) $\frac{\text{Price in the given year}}{\text{Price in the base year}} \times 100$

(B) $\frac{\text{Price in the base year}}{\text{Price in the given year}} \times 100$

(C) Price in the given year × 100

(D) Price in the base year ×100

52. Time reversal & factor reversal are:

(A) Quantity Index **[May 2018]**

(B) Ideal Index

(C) Price Index

(D) Test of adequacy

53. A series of numerical figures which show the relative position is called.

[May 2018]

(A) Index number

(B) Relative number

(C) Absolute number

(D) None

54. Which is called an ideal index numbers

[June 2019]

(A) Laspeyre's index number

(B) Pasche's index number

(C) Fisher's index number

(D) Marshall Edgeworth index number

55. In semi averages method, if the number of values is odd then we drop:

[June 2019]

(A) First value

(B) Last value

(C) Middle value

(D) Middle two value

56. Which is not satisfied by Fisher's ideal index number? **[June 2019]**

(A) Factor Reversal Test

(B) Time Reversal Test

(C) Circular Test

(D) None of the above

57. The cost of living index numbers in years 2015 and 2018 were 97.5 and 115 respectively. The salary of a worker in 2015 was Rs. 19500. How much additional salary was required for him in 2018 to maintain the some standard of living as in 2015?

(A) 3000 **[June 2019]**

(B) 4000

(C) 3500

(D) 4500

58. The index number of prices at place in the year 2008 is 225 with 2004 as the base then there is: **[Nov. 2019]**

(A) 125% increase

(B) 225% increase

(C) 100% increase

(D) 25% decrease

59. Index Numbers are expressed as

(A) Squares **[Nov.2020]**

(B) Ratio

(C) Percentages

(D) Combinations

60. In Laspeyre's index number is 110 and Fisher's ideal index number is 109. Then Paasche's index number is **[Nov.2020]**

(A) 118

(B) 110

(C) 109

(D) 108

61. The cost of living index is always

(A) Price index number **[Jan.2021]**

(B) Quantity index number

(C) Weighted index number

(D) Value index number

62. When the prices for quantities consumed of all commodities are changing in the same ratio, then the index numbers due to Laspeyre's and Paasche's will be: **[Jan.2021]**

(A) Equal

(B) Unequal

(C) Reciprocal of Marshall Edge worth Index Number

(D) Reciprocal of Fisher Index Number

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

63. The weighted aggregative price index turnover for 2001 with 2000 as the base year using Fisher's Index Number is:

[July 2021]

Commodity	Price (In Rs.)		Quantities	
	2000	2001	2000	2001
A	10	12	20	22
B	8	8	16	18
C	5	6	10	11
D	4	4	7	8

(A) 12.26
(B) 112.20
(C) 112.32
(D) 126.01

64. The weighted aggregative price index numbers for 2001 with 2000 as the base year using Paasche's index number is:

[July 2021]

Commodity	Price (In Rs.)		Quantities	
	2000	2001	2000	2001
A	10	12	20	22
B	8	8	16	18
C	5	6	10	11
D	4	4	7	8

(A) 112.32
(B) 112.38
(C) 112.26
(D) 112.20

65. The weighted aggregative price index numbers for 2001 with 2000 as the base year using Marshall Edgeworth index number is: **[July 2021]**

Commodity	Price in (Rs.)		Quantities	
	2000	2001	2000	2001
A	10	12	20	22
B	8	8	16	18
C	5	6	10	11
D	4	4	7	8

(A) 112.26
(B) 112.20
(C) 112.32
(D) 112.38

66. The consumer price index goes up from 120 to 180 when salary goes up from 240 to 540, what is the increase in real terms?

[July 2021]

(A) 80
(B) 150
(C) 360
(D) 240

67. If P_{10} and P_{01} are index for 1 on 0 and 0 on 1 respectively then formula $P_{01} \times P_{10} = 1$ is used for **[Dec. 2021]**

(A) Unit Test
(B) Time Reversal Test
(C) Factor Reversal Test
(D) Circular Test

68. The weighted averaged of price relatives of commodities, when the weights are equal to the value of commodities in the current year, yields _____ index number.

[Dec. 2021]

(A) Fisher's ideal
(B) Laspeyres's
(C) Paasches'
(D) Marshall-Edgeworth

69. From the following data base year:

[Dec.2021]

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	4	3	6	2
B	5	4	6	4
C	7	2	9	2
D	2	3	1	5

Fisher's Ideal Index is

(A) 117.30
(B) 115.43
(C) 118.35
(D) 116.48

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

70. Index numbers are not helpful in [Dec.2021]

(A) Framing economics policies
(B) Revealing trend
(C) Forecasting
(D) Identifying errors

71. The three index numbers, namely, Laspeyre, Paasche and Fisher do not satisfy _____ test. [Dec. 2021]

(A) Time reversal
(B) Factor reversal
(C) Unit
(D) Circular

72. From the following data constructed the index number by laspeyre's method

$\Sigma P_1Q_1 = 99, \Sigma P_0Q_1 = 76, \Sigma P_0Q_0 = 73, \Sigma P_1Q_0 = 96$

(A) 130.36 [Dec. 2022]
(B) 131.51
(C) 130.59
(D) 76.01

73. Which index measures the change from month to month in the cost of a representative basket of goods and services of the type bought by a typical household?

(A) Retail Price Index [Dec. 2022]
(B) Laspeyre's Index
(C) Fisher's index
(D) Paasche's Index

74. Fisher's index number is called as ideal index number because is in satisfies.

(A) Factor reversal test [Dec. 2022]
(B) Time reversal test
(C) Both factor and time reversal test
(D) Circular test

75. If Laspeyre's Index is 119 and Paasche's Index is 112. Then Fisher's index number will be. [Dec. 2022]

(A) 113.99
(B) 115.45
(C) 115.89
(D) 151.98

76. In price index, when a new commodity is required to be added, which of the following index is used? [Dec. 2022]

(A) Shifted price index
(B) Splicing price index
(C) Deflating price index
(D) Value price index

77. Which of the following index is computed by taking the average of base year and current year? [Jun. 2023]

(A) Marshall-Edgeworth index
(B) Paasche's Index
(C) Laspeyre's Index
(D) Fisher's Index

78. Consider the data [Jun. 2023]

Year	Base year		Current year	
Commodities	Price	Quantity	Price	Quantity
A	10	5	20	2
B	15	4	25	8
C	40	2	60	6
D	25	3	40	4

Laspeyre's index is

(A) 166.04
(B) 166.40
(C) 164.04
(D) 164.40

79. The index number of prices for a country at a given date is 250. In comparison to the base period price, the price of all commodities in the country has increased by _____ times. [Jun. 2023]

(A) 1.25
(B) 1.5
(C) 2
(D) 2.5

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

80. If Fisher's index number is 160 and Paasche's index number is 140, then Laspeyre's index number is **[Jun. 2023]**

(A) 147.77
(B) 182.85
(C) 183.35
(D) 146.25

81. Weighted geometric mean of relative formula satisfies _____ test while Factor Reversal test is satisfied by _____. **[Jun. 2023]**

(A) Time Reversal, Fisher's Ideal Index
(B) Time Reversal, Laspeyre's
(C) Factor Reversal, Paasche's Index
(D) Factor Reversal, Fisher's Ideal Index

82. The gross monthly pay of an employee was Rs. 15,000 in a year 2020. The consumer price index number in 2023 is 155 with 2020 as base year. If employee is to rightly compensate what dearness allowance is required to be paid? **[Dec. 2023]**

(A) Rs. 8,000
(B) Rs. 8,250
(C) Rs. 8,500
(D) 8,750

83. An Index number constructed to measure the relative change in the price of an item or a group of item is called: **[Dec. 2023]**

(A) Quantity index number
(B) Price index number
(C) Volume index number
(D) Composite index number

84. Fisher's index does not satisfy following test. **[Dec. 2023]**

(A) Unit Test
(B) Time Reversal Test
(C) Circular Test
(D) Factor Reversal Test

85. If the Laspeyre's index is 110 and Passche's index is 108, then what is the value of Fisher's index? **[Dec. 2023]**

(A) 106.50
(B) 107.60
(C) 108.99
(D) 109.88

86. From the year 2013 to 2023, Consumer price index number is increased from 135 to 180. During this period, salary of the employees as per pay commission recommendations was revised from Rs. 23,000 to Rs. 29,500. In real terms, an employee should get following additional amount (upto nearest whole number) to maintain his previous standard of living.

(A) Rs. 1,168 **[Dec. 2023]**
(B) Rs. 666
(C) Rs. 909
(D) Rs. 6,500

87. The average of base year and current year is used in _____ index number. **[Jun. 2024]**

(A) Laspeyre's
(B) Passche's
(C) Fisher's ideal
(D) Marshall-Edgeworth

88. Which index number formula satisfies both the time reversal and factor reversal tests? **[Jun. 2024]**

(A) Fisher's Ideal Index
(B) Laspeyres' index
(C) Paasche's index
(D) Marshall-Edgeworth index

89. What of the following is not a test of adequacy in the context of index numbers? **[Jun. 2024]**

(A) Unit Test
(B) Square Test
(C) Circular Test
(D) Factor Reversal Test

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

90. If the prices of all commodities in the base year are twice the values of the respective commodities in the current year, then the Fisher's ideal index number is equal to: **[Jun. 2024]**

(A) 200
(B) 50
(C) 400
(D) 25

91. Which index number formula does not satisfy the time reversal test? **[Jun. 2024]**

(A) Fisher's Ideal index and Laspeyre's Index
(B) Laspeyres' index and Paasche's Index
(C) Paasche's Index and Fisher's Ideal Index
(D) Laspeyres' index, Fisher's Ideal Index and Paasche's Index

92. Which one of the following test of adequacy is concerned with the measurement of price changes over a period of years, when it is desirable to shift the base? **[Sept. 2024]**

(A) Unit test
(B) Time Reversal test
(C) Circular test
(D) Factor Reversal test

93. The consumer price index for the year 2023 is 273 with 2010 as base year. The average monthly wages of industrial worker in year 2023 is ₹ 8,190. What is the real wage?

(A) ₹ 2,800
(B) ₹ 3,000
(C) ₹ 3,200
(D) ₹ 3,400

94. Time Reversal test is satisfied by: **[Sept. 2024]**

(A) Laspeyre's method but not Fisher's method
(B) Paasche's method but not Laspeyre's method
(C) Fisher's method
(D) Laspeyre's method and Fisher's method

95. The value index is equal to: **[Sept. 2024]**

(A) The total sum of the values of a given year multiplied by the sum of the values of the base year.
(B) The total sum of the values of a given year plus the sum of the values of the base year.
(C) The total sum of the values of a given year divided by the sum of the values of the base year.
(D) The total sum of the values of a given year minus the sum of the values of the base year.

96. During a certain period the cost of living index goes up from 110 to 200 and the salary of a worker is also raised from ₹ 330 to ₹ 500, then in the real terms, the raise in salary is effectively- **[Sept. 2024]**

(A) Gain by ₹ 50
(B) Gain by ₹ 75
(C) Loss by ₹ 100
(D) Loss by ₹ 50

97. Which one of the following index uses the method of average of base year and current year? **[Jan. 2025]**

(A) Laspeyre's Index
(B) Paasche's Index
(C) Marshall-Edgeworth Index
(D) Fisher's Index

98. If Laspeyre's index number is 125 and Paasche's index number is 500 thenFisher's index number is **[Jan. 2025]**

(A) 312.5
(B) 250.0
(C) 62.5
(D) 147.5

99. When the cost of Beverages increased by 40%, the person said that the rise 6 had increased his cost of living by 8%. Before the change in price, the percentage of his cost of living was due to buying Beverages is: **[Jan. 2025]**

(A) 15%
(B) 20%
(C) 5%
(D) 2%

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

100. If the prices of all the goods change in the same ratio, then **[Jan. 2025]**

(A) Laspeyre's index and Paasche's index numbers are equal.

(B) Laspeyre's index and Paasche's index numbers are not equal.

(C) Laspeyre's index is greater than Paasche's index number.

(D) Laspeyre's index is less than Paasche's index number.

101. Given that $\Sigma p_n q_n = 300$, $\Sigma p_0 q_0 = 125$ and Paasche's index number is 200 thenthe value of $\Sigma p_0 q_n$ is **[Jan. 2025]**

(A) 125

(B) 150

(C) 250

(D) 100

ANSWER KEY

1.	B	2.	B	3.	D	4.	D	5.	B
6.	C	7.	C	8.	D	9.	A	10.	B
11.	B	12.	D	13.	A	14.	A	15.	B
16.	B	17.	A	18.	C	19.	B	20.	C
21.	A	22.	B	23.	C	24.	D	25.	C
26.	B	27.	B	28.	D	29.	C	30.	D
31.	B	32.	C	33.	C	34.	A	35.	B
36.	C	37.	D	38.	A	39.	C	40.	C
41.	B	42.	A	43.	A	44.	A	45.	A
46.	A	47.	C	48.	B	49.	D	50.	D
51.	A	52.	D	53.	A	54.	C	55.	C
56.	B	57.	C	58.	A	59.	C	60.	D
61.	C	62.	A	63.	D	64.	D	65.	A
66.	C	67.	B	68.	C	69.	A	70.	D
71.	D	72.	B	73.	A	74.	C	75.	B
76.	B	77.	A	78.	A	79.	B	80.	B
81.	A	82.	B	83.	B	84.	C	85.	C
86.	A	87.	D	88.	A	89.	B	90.	B
91.	B	92.	C	93.	B	94.	C	95.	C
96.		97.	C	98.	B	99.	B	100.	A
101.	B								

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SPACE FOR NOTES

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 16
NUMBER SERIES, CODING DECODING & ODD MAN OUT

1. Find the next number in the given sequence? **[Dec. 2022]**

11, 17, 39, 85, ?, 281, 447

(A) 133
(B) 143
(C) 153
(D) 163

2. Find the missing number in the following series. **[Dec. 2022]**

3, 5, 5, 19, 7, 41, 9,?, 11, 109

(A) 71
(B) 61
(C) 69
(D) 70

3. The number in place of question mark in: 7, 26, 63, 124, 215, ?, 511 is **[Jun. 2023]**

(A) 342
(B) 343
(C) 441
(D) 421

4. Out of following 41, 43, 47, 53, 61, 71, 83, 95 the odd man out shall be **[Jun. 2023]**

(A) 95
(B) 83
(C) 71
(D) 53

5. Find the missing number 2, 3, 8, ?, 3968

(A) 65 **[Dec. 2023]**
(B) 63
(C) 70
(D) 80

6. Find the odd man out: **[Dec. 2022]]**

34, 105, 424, 2123, 12756.

(A) 12756
(B) 2123
(C) 424
(D) 34

7. Find the odd man out in the following series: **[Jun. 2023]**

190, 145, 136, 352, 460, 324, 631, 244.

(A) 136
(B) 244
(C) 460
(D) 324

8. Find odd one out of the series: **[Dec. 2023]**

16, 25, 36, 72, 144, 196 and 225.

(A) 36
(B) 72
(C) 196
(D) 225

9. If 'FROZEN' is decoded as 'OFAPSG'. Tick the right option that depicts 'MOLTEN' written in this way? **[Dec. 2022]**

(A) OFPOMN
(B) OFSMPN
(C) OFUMPN
(D) OFUNPN

10. In certain code language, if TOUR, is written as 1234, CLEAR is written 56784 and SPARE is written as 90847, Find the code for CARE? **[Dec. 2022]**

(A) 1247
(B) 4847
(C) 5247
(D) 5847

11. If ROSE 'is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?

(A) 246173 **[Dec. 2022]**
(B) 214673
(C) 216473
(D) 214743

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

12. In a certain code, MENTION is written as LNEITNO. How is PRESENT written in that code? **[Jun. 2023]**

(A) QFSFTUM
(B) ONESERP
(C) QRESTNO
(D) OERESTN

13. Find the next number in the series:

Q1F, S2E, U6D, W21C, ……..? **[Jun. 2023]**

(A) Y66B
(B) Y44B
(C) Y88B
(D) Z66B

14. In a certain language SIKKIM is written as THLJJL, then how is TRAINING written in that code? **[Dec. 2023]**

(A) SQBHOHOH
(B) UQBHOHOF
(C) UQBJOHOH
(D) UQBJOHOM

15. In certain language, PEAR is coded as 7519, and TOIL is coded as 2693, then how DOCTOR be written in that code?

(A) 463293 **[Dec. 2023]**
(B) 463239
(C) 463269
(D) 463296

16. In a certain system of coding the word "STATEMENT" is written as "TNEMETATS". In the same system of coding the word "POLITICAL" written as: **[Dec. 2023]**

(A) LACITILOP
(B) LACTILIOP
(C) OPILITACL
(D) LACATILOP

17. What comes next in the series: FMAMJJASON? **[June 2024]**

(A) DJM
(B) DBM
(C) DJF
(D) DDJ

18. In a series of letters, which one is the odd one out: BDFH, JLNP, RTVX, ZBDE?

(A) BDFH **[June 2024]**
(B) JLNP
(C) RTVX
(D) ZBDE

19. In a certain code TEACHER is written as VGCEJGT, How is CHILDREN written in that code. **[June 2024]**

(A) EJKNEGTP
(B) EGKNFITP
(C) EJKNFGTO
(D) EJKNFTGP

20. In a certain code INACTIVE is written as VITCANIE, How is COMPUTER written in the same code **[June 2024]**

(A) PMOCRETU
(B) ETUPMOCR
(C) UTEPMOCR
(D) MOCPETUR

21. Find the missing value in the series : 51, 52, 60, 87, 151, _____, 492 **[June 2024]**

(A) 195
(B) 276
(C) 317
(D) 420

22. If TAP is coded as SZO in a language, then how is FRIEND coded in same language?

(A) CMDHQE **[Sept. 2024]**
(B) QEDHCM
(C) EQIENE
(D) EQHDMC

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

23. Find the odd man out from the following series: 7, 23, 47, 119, 171, 287 **[Sept. 2024]**

(A) 119
(B) 171
(C) 287
(D) 7

24. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code? **[Sept. 2024]**

(A) 318826
(B) 318286
(C) 618826
(D) 338816

25. AZ, GT, MN,....., YB, EV. The value at blank space (.....) will be : **[Sept. 2024]**

(A) JH
(B) SH
(C) SK
(D) TS

26. Find the next number in the series 2, 5, 11, 23, 47, ... **[Sept. 2024]**

(A) 84
(B) 95
(C) 98
(D) 105

27. Find the missing term CEGI, XVTR, GIKM, _____. **[Jan. 2025]**

(A) TRPN
(B) KMBD
(C) AMNL
(D) JLNP

28. In certain code language 'CLOCK' is coded as 75276 and 'EARTH' is codedas 83491, then 'COAT' is coded as **[Jan. 2025]**

(A) 7329
(B) 7239
(C) 7932
(D) 7529

29. Find the missing term of series 2, 7, 16, 29,...., 67, 92 **[Jan. 2025]**

(A) 39
(B) 46
(C) 43
(D) 62

30. In a certain language 'MENTION' is written as 'NFOUJPO', the code of 'MYSTIFY' is:

(A) NZTUJGZ **[Jan. 2025]**
(B) NFOFTJT
(C) LNEITNO
(D) OERESTN

31. Find the odd man out from the following:
Marriage, Wedlock, Divorce, Matrimony

(A) Marriage **[Jan. 2025]**
(B) Wedlock
(C) Divorce
(D) Matrimony

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

ANSWER KEY

1.	D	2.	A	3.	A	4.	A	5.	B
6.	B	7.	D	8.	B	9.	C	10.	D
11.	B	12.	D	13.	C	14.	B	15.	C
16.	A	17.	C	18.	D	19.	D	20.	B
21.	B	22.	D	23.	B	24.	A	25.	B
26.	B	27.	A	28.	B	29.	B	30.	A
31.	D								

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 17
BLOOD RELATION

1. Suresh's sister is the wife of Ram, Ram is Rani's brother. Ram's father is Madhur, Sheetal is Ram's grandmother, Rema is sheetal's daughter –in-law. Rohit is Rani's brother's son. Who is Rohit to Suresh?

(A) Brother-in-law **[Dec. 2022]**
(B) Son
(C) Brother
(D) Nephew

2. There are six children playing football namely A,B,C,D,E and F, A & E are brothers, F is sister of E, C is the only son of A's uncle, B & D are daughter of the brother of C's father. How D is related to A? **[Dec. 2022]**

(A) Uncle
(B) Cousin
(C) Nice
(D) Sister

3. In a joint family, there are father, mother, 3 married sons and one unmarried daughter. Out of the sons, two have 2 daughters each and one has a son only. How many female members are there in the family?

(A) 3 **[Dec. 2022]**
(B) 6
(C) 9
(D) 8

4. When Rani saw Vinit, she recollected that "He is the brother of my grandfather's son". How is Rani related to Vinit?

(A) Aunt **[Dec. 2022]**
(B) Daughter
(C) Sister
(D) Niece

5. Annanya is mother of Satya and Shyam is the son of Bhima, Shiva is brother of Annanya. If Satya is sister of Shyam, How Bhima is related to Shiva? **[Dec. 2022]**

(A) Son
(B) Cousin
(C) Brother-in-law
(D) Son-in-law

6. Suman is daughter-in-law of Rakesh and sister-in-law of Rajesh, Ramesh is the son of Rakesh and only brother of Rajesh. Find the relation of Suman with Ramesh. **[Dec. 2022]**

(A) Sister-in-law
(B) Cousin
(C) Aunt
(D) Wife

7. Pointing to a man in the photograph, Khushi says, "This man's son's sister is my mother–in-law," How is the Khushi's husband related to the man in the photograph?

(A) Grandson **[Dec. 2022]**
(B) Son
(C) Son in law
(D) Cousin

8. P, Q, R, S, T and U are 6 members of a family in which there are two married couples. T, a teacher is married to a doctor, who is mother of R and U. Q, the lawyer is married to P. P has one son and one grandson. Of the two married ladies one is a housewife. There is also one student and one male engineer in the family. Which of the following is true about the grand-son of the family? **[Jun. 2023]**

(A) He is a lawyer
(B) He is an engineer
(C) He is a student
(D) He is a doctor

9. Neelam, who is Deepak's daughter, says to Deepika "your mother-in-law Rekha is younger daughter of Ramlal, who is my grandfather." How Neelam is related to Deepika? **[Jun. 2023]**

(A) Sister
(B) niece
(C) sister-in-law
(D) aunt

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

10. Pointing to a photograph, a woman says "This man's son's sister is my mother-in-law". How is the woman's husband related to the man in the photograph? **[Jun. 2023]**

(A) Son
(B) Son-in-law
(C) Grandson
(D) Nephew

11. If A is the brother of B, B is the daughter of C and D is the father of A, then how is C related to D? **[Jun. 2023]**

(A) Husband
(B) Wife
(C) Granddaughter
(D) Grandfather

12. X is the husband of Y. W is daughter of X. Z is husband of W.N is daughter of Z. What is the relationship of Y to N? **[Jun. 2023]**

(A) Cousin
(B) Niece
(C) Daughter
(D) Grand-mother

13. Based on the statements given below, find out who is the uncle of P? **[Jun. 2023]**

(i) K and J are brothers

(ii) K's sister is M

(iii) P and N are siblings

(iv) N is the daughter of J

(A) K
(B) J
(C) N
(D) M

14. There are six persons A, B, C, D, E and F in a family. A and B are a married couple and A is a male member. D is the only son of C, who is the brother of A. E is the sister of D. B is the daughter-in-law of F whose husband has died.

Who is the mother of C? **[Dec. 2023]**

(A) A
(B) E
(C) D
(D) F

15. There are six persons A, B, C, D, E and F in a family. B is the son of C but C is not the mother of B. A and C are a married couple. E is the brother of C. D is the daughter of A. F is the brother B. Who is the mother B? **[Dec. 2023]**

(A) A
(B) E
(C) D
(D) F

16. When Mr. P saw Mr. Q, he recalled, "He is the son of the father of my daughter's mother." Who is Mr. Q to Mr. P? **[Dec. 2023]**

(A) Brother
(B) Cousin
(C) Nephew
(D) Brother-in-law

17. Introducing a boy, Akshat said, "His mother is the only daughter of my mother-in-law". How is Akshat related to the boy? **[Dec. 2023]**

(A) Uncle
(B) Father
(C) Brother
(D) Husband

18. Showing the man playing the cricket, Ms. P said, "He is the brother of my uncle's daughter". Who is the man to Ms. P? **[Dec. 2023]**

(A) Son
(B) Cousin
(C) Uncle
(D) Brother-in-law

19. In a family, there are six members A, B, C, D, E and F. A & B are married couple. A being the male member. D is only son of C, who is brother of A. E is sister of D. B is daughter-in-law of F, whose husband is died. How C is related to B? **[Dec. 2023]**

(A) Brother
(B) Nephew
(C) Brother-in-law
(D) Sister-in-law

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

20. Pointing to a lady, Suresh said "She is the mother of my son's wife's daughter". How is Suresh related to lady? **[Dec. 2023]**

(A) Uncle
(B) Cousin
(C) Daughter-in-law
(D) Father-in-law

21. Pointing to lady, a man said "The son of her only brother is brother of my wife". How is the lady related to man **[Dec. 2023]**

(A) Mother-in-law
(B) Sister of father-in-law
(C) Mother of Father-in-law
(D) Cousin

22. A says, "B is my sister's son" B says, "C is my father-in-law" C says, "D is my wife's brother. What can be the relationship between A and D?

(A) Uncle-Nephew **[Jun. 2024]**
(B) Brother-Sister
(C) Father-Son
(D) Cousins

23. A is B's Sister. C is B's mother. D is C's father. E is D's mother. How is A related to D

(A) Grandmother **[Jun. 2024]**
(B) Grandfather
(C) Daughter
(D) Grand Daughter

24. Pointing to a photograph. Ms. X says, "This man's son's sister is my sister in-law". How is the Ms. X's husband related to the man in the photograph? **[Jun. 2024]**

(A) Son
(B) Grandson
(C) Brother
(D) Nephew

25. Consider the relations: Raja is husband of Devi, Karan is the father of Gopal; Arjun is the son of Shoba, Ashok is brother of Shoba. Arjun's father Karan is the son-in-law of Devi. How is Raja related to Ashok?

(A) Father **[Jun. 2024]**
(B) Uncle
(C) Son-in-law
(D) Grandfather

26. X, a male, introduces Y saying, "He is the husband of the granddaughter of the father of my father". How is Y related to X?

(A) Brother **[Jun. 2024]**
(B) Father
(C) Brother-in-law
(D) Father-in-law

27. Pointing to a man in photograph, a woman said "The father of his brother is only son of my grandfather", then how is that woman related to the man in photograph?

(A) Daughter **[Sept. 2024]**
(B) Sister
(C) Mother
(D) Aunty

28. A is B's Father. C is B's mother. D is C's Son. E is A's mother, Then how is A related to D?

(A) Uncle **[Sept. 2024]**
(B) Grandson
(C) Granddaughter
(D) Father

29. Sandhya is the daughter-in-law of Shailesh and sister-in-law of Rajan. Manak is son of Shailesh and only brother of Rajan. Then, how Sandhya is related to Manak?

(A) Sister-in-law **[Sept. 2024]**
(B) Aunty
(C) Cousin
(D) Wife

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

30. A family consists of six members P, Q, R, S, T & U. There are two married couples. Q is a doctor and father of T; U is grandfather of R and is a contractor; S is grandmother of T and is a house-wife. There is one doctor, one contractor, one Professor, one house-wife and two students in the family. Find who is the husband of P.

(A) T [Sept. 2024]
(B) S
(C) R
(D) Q

31. P is the son of Q while Q & Rare sisters to one another. T is the mother of R. If S is son of T, how S is related to P? [Sept. 2024]

(A) Brother
(B) Cousin
(C) Maternal uncle
(D) Nephew

32. U is father of W, X is son of V, Y is brother of U. If W is sister of X, how is X related to Y?

(A) Father [Jan. 2025]
(B) Sister-in-law
(C) Nephew
(D) Grandson

33. B is daughter of A. C is brother of B. C is the only son of D. C and E are married couple. F is the only son of E. Then how is F related to A?

(A) Grandson [Jan. 2025]
(B) Father
(C) Brother
(D) Uncle

34. Given that X is mother of Y. Z is son of X. A is brother of B. B is daughter of Y. Who is grandmother of A? [Jan. 2025]

(A) X
(B) Y
(C) A
(D) B

35. L is wife of N, P is son of N, K is brother of N and father of O. What is the relationship of P and O? [Jan. 2025]

(A) Uncle
(B) Brother
(C) Cousin
(D) Nephew

36. C is sister of B. D is father of A. A is brother of B. D and E are married couple. How is C related to E? [Jan. 2025]

(A) Daughter
(B) Son
(C) Mother
(D) Father

ANSWER KEY

1.	D	2.	D	3.	C	4.	D	5.	C
6.	D	7.	A	8.	B	9.	C	10.	C
11.	B	12.	D	13.	A	14.	D	15.	A
16.	D	17.	B	18.	B	19.	C	20.	D
21.	B	22.	D	23.	D	24.	A	25.	A
26.	C	27.	B	28.		29.	D	30.	D
31.	C	32.	C	33.	A	34.	A	35.	C
36.	A								

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 18
DIRECTION

1. Radha moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. from here she moves towards North–West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point? **[Dec. 2022]**

(A) 3 km
(B) 4 km
(C) 10 km
(D) 11 km

2. P,Q,R and S are playing a game of carom P,R and S, Q are partners, 'S' is to the right of 'R'. If 'R' is facing West, then 'Q' is facing which direction? **[Dec. 2022]**

(A) South
(B) North
(C) East
(D) West

3. One morning a boy starts walking in a particular direction for 6 Km and then takes a left turn and walks another 5 Km. thereafter he again takes left turn and walks another 5 Km and at last he takes right turn and walks 5 Km. Now he sees his shadow in front of him. What direction he did start initially? **[Dec. 2022]**

(A) South
(B) North
(C) West
(D) East

4. It is 3'o clock in a watch. If the minute hand points towards the North-East then the hour hand will point towards the

(A) South **[Dec. 2022]**
(B) South – West
(C) North– West
(D) South – East

5. A man is facing west. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 270 degree in the anticlockwise direction. Find which direction he is facing now?

(A) South-East **[Dec. 2022]**
(B) West
(C) South
(D) South-West

6. Deepika starts walking straight towards east. After walking 65 m, she turns to the left and walks 25 m straight. Again she turns to the left and walks a distance of 40 m. At what distance and in which direction currently she is from the initial point?

(A) .35.35 m in North-East **[Jun. 2023]**
(B) 35.35 m in South-West
(C) 25 m in North
(D) 25 m in West

7. Mr. Kartik puts his time piece on the table in such a way that at 6:00 PM, hours hand points to north. In which direction the minute hand will point at 9:15 PM?

(A) South-East **[Jun. 2023]**
(B) East
(C) West
(D) South-west

8. Shrikant is facing East and turns 120° in the clockwise direction and then turns 180° in the anticlockwise direction. Which direction is Shrikant facing now? **[Jun. 2023]**

(A) East
(B) North-East
(C) North
(D) South-West

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

9. Sunita walks a distance of 2 km towards East, turns left and moves 1 km, then turns left and moves 2 km and then turns left again and moves 1 km, then halts. At what distance Sunita is now from the starting point? **[Jun. 2023]**

(A) 0 km
(B) 1 km
(C) 2 km
(D) 6 km

10. Kamal walks 10 km north from there he walks 6 km towards south. Then he walks 3 km towards east. How far and in which direction is he with reference to starting point? **[Dec. 2023]**

(A) 5 km south – east
(B) 7 km north – east
(C) 5 km north – east
(D) 7 km south – west

11. Sunita walked 30 meters towards the East, took a right turn and walked 40 meters. Then she took a left turn and walked 30 meters. In which direction is she now from the starting point? **[Dec. 2023]**

(A) North-East
(B) East
(C) South-East
(D) South

12. Mr. X walks 14 kilometers towards north. From there, he walks 8 kilometers towards South. Then he walks 8 kilometers towards the West. How far and in which direction is he with reference to his starting point?

(A) 10 Kilometers North-West
(B) 10 Kilometers West **[Dec. 2023]**
(C) 7 Kilometers East
(D) 7 Kilometers West

13. Mr. X walks northwards. After a while, he turns to his right and a little further to his left. Finally, after walking 500 Meter, he turns to his left again. In which direction is he moving now **[Dec. 2023]**

(A) North
(B) South
(C) East
(D) West

14. A car starts from a point, runs 20 kms towards north, turns right and runs 35 kms, turns right again and runs. Which is the direction now it is facing?

(A) North **[Jun. 2024]**
(B) South
(C) East
(D) West

15. Shyam walks 12 m South from his house, turns left and walks 20 m, again turns left and walks 45 m, then turns right and walks 10 m to reach coffee shop. In which direction is coffee shop from his house?

(A) South West **[Jun. 2024]**
(B) East
(C) North East
(D) North

16. If Shyam sees the rising sun behind the tower and setting sun behind the Railway station from his house. What is the direction of tower from the Railway station?

(A) South **[Jun. 2024]**
(B) North
(C) West
(D) East

17. Ram started walking from A, 200 m towards North to reach B. Then he turned right and walks 300 m to reach C. Then he turns right and walks 350 m to reach D. Then he turns left and walks 150 m to reach E. Finally, he turns left and walks 150 m. He arrived at the point F. What is the distance between point A and F?

(A) 450 m **[Jun. 2024]**
(B) 200 m
(C) 250 m
(D) 300 m

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

18. Roy walks 2 kms to West, then turns and starts walking South-East. He walks 3 kms. Then he turns North and walks 5 kms. Then again, he turns East and walks 2 kms. Finally, he turns South and walks 6 kms. In which direction, is he from the starting point? **[Jun. 2024]**

(A) South-West
(B) South-East
(C) North-East
(D) North-West

19. If Kiran put her time-piece on the table in such a way that at 6:00 PM, hour hand points to East. In which direction the minute hand will be at 9:30 PM ? **[Sept. 2024]**

(A) South-East
(B) North-West
(C) East
(D) West

20. If Ajay stands on his head with his face towards North, in which direction will his left hand point ? **[Sept. 2024]**

(A) North-East
(B) North
(C) East
(D) North-West

21. One morning after sunrise, A and B were talking to each other face to face very closely at a crossing point. If B's shadow was exactly to the right of A, in which direction B was facing? **[Sept. 2024]**

(A) East
(B) West
(C) North
(D) South

22. In a multi-storey building on one floor there are six flats in two rows facing East and West and they are allotted to A, B, C, D, E, and F. B gets an East facing flat, which is not next to D. F and D gets diagonally opposite flat. A gets a West facing flat and E gets an East facing flat. Whose flat is between A and F? **[Sept. 2024]**

(A) B
(B) C
(C) D
(D) F

23. Balkrishna is Ritik's neighbour and his house is 200 meters away in the north- west direction from Ritik's house. Jayendra is Ritik's neighbour and his house is located 200 meters away in the south-west direction from Ritik's house. Girdhari is Jayendra's neighbour and he stays 200 meters away in the south- east direction from Jayendra's house. Ritik is Girdhari's neighbour and his house is located 200 meters away in north-east direction from Girdhari's house. Then where is the position of Ritik's house in relation to Balkrishna's? **[Sept. 2024]**

(A) South-East
(B) South-West
(C) North
(D) North-East

24. Anil started walking 5 kms towards north then he turned left and walked 3 kms. Again he turned left and walked 5 kms. Then the total number of kms he walked is **[Jan. 2025]**

(A) 13 kms
(B) 8 kms
(C) 3 kms
(D) 5 kms

25. Raju started walking 10 kms towards east from his home. He turned right and walked 5 kms to the south to reach his school. In which direction is his school from his home? **[Jan. 2025]**

(A) South-East
(B) North-East
(C) South-West
(D) North-West

26. A started walking from his house & walk 4 km north side then turns right & walk 3 km. If he turns right again, what is the direction now? **[Jan. 2025]**

(A) North
(B) West
(C) East
(D) South

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

27. A man starts walking 10 km to the North. He turns right and walks 5 km, then turns right again and walks 10 km. In which direction is man now from the starting point? **[Jan. 2025]**

(A) East

(B) West

(C) North

(D) South

28. In the morning Anika started walking from a point where her shadow falls in front of her. She walked 2 kms and then turned left and walked 2 kms. Again she turned left and walked 2 kms. In which direction is she now facing? **[Jan. 2025]**

(A) East

(B) West

(C) South

(D) North

ANSWER KEY

1.	C	2.	B	3.	B	4.	D	5.	D
6.	A	7.	C	8.	B	9.	A	10.	C
11.	C	12.	A	13.	D	14.	B	15.	C
16.	D	17.	A	18.	B	19.	C	20.	C
21.	C	22.	B	23.	A	24.	A	25.	A
26.	D	27.	A	28.	A				

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

CHAPTER – 19
SEATING ARRANGEMENT

1. Six persons A, B, C, D, E and F are sitting in two rows with three persons in each row. Both rows are in front of each other. E is not at the end of the any row and D is second left to the F, C is neighbor of E and diagonally opposite to D if B is neighbour F who is in front of C then who is sitting diagonally to F? **[Dec. 2022]**

(A) C
(B) E
(C) A
(D) D

2. P,Q, R, S and T are sitting in a line facing West. P and Q are sitting together. R is sitting at south end and S is sitting at North end. T is neighbor of Q and R. Who is sitting the middle? **[Dec. 2022]**

(A) P
(B) Q
(C) R
(D) S

3. Seven friends A, B, C, D, E, F, & G are watching movie sitting in a row. E is sitting at one extreme end. C is sitting second to E. Bis sitting between A & C. G is not sitting at any extreme end. A is not at any extreme end. D is sitting immediate to F. who is sitting in the middle? **[Jun. 2023]**

(A) G
(B) D
(C) C
(D) B

4. Five boys Ajay, Brijmohan, Chandru, Dheeraj and Ehsan are sitting in a park in a circle facing the centre. Ajay is facing South-West, Dheeraj is facing South-East, Brijmohan and Ehsan are right opposite Ajay and Dheeraj, respectively and Chandru is equidistant between Dheeraj and Brijmohan. Which direction is Chandru facing? **[Jun. 2023]**

(A) West
(B) South
(C) North
(D) East

5. Pran, Qomal, Ravi, Shalu, Trilok, Urvi, Vasu and Walter are sitting in a row facing North.

(i) Pran is fourth to the right of Trilok

(ii) Walter is fourth to the left of Shalu

(iii) Ravi and Urvi, which are not at the ends, are neighbours of Qomal and Trilok, respectively.

(iv) Walter is immediate left of Pran and Pran is the neighbour of Qomal.

Identify who are sitting at the extreme ends? **[Jun. 2023]**

(A) Pran and Walter
(B) Trilok and Urvi
(C) Trilok and Shalu
(D) Shalu and Pran

6. Six friends - A, B, C, D, E, and F are sitting around a circular table facing towards the centre of the circle. E is not sitting between B and D. A sits to the left of F and C is fourth to the right of A. D is immediate right of E.

Who sits second to right to F? **[Jun. 2023]**

(A) C
(B) A
(C) D
(D) B

7. Seven friends O, P, Q, R, S, T and U are watching movie sitting in a row. S is sitting at one extreme end. Q is sitting second to the right of S. P is sitting between O and Q. Both U and O are not sitting at extreme end. R is sitting immediate left of T. Who is sitting in the middle? **[Dec. 2023]**

(A) O
(B) P
(C) Q
(D) U

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

8. A, B, C, D, E, F, G, H are sitting in a circle facing the center. D sits 3rd to left of A. E sits to the immediate right of A. B is third to left of D. G is second to right of B. C is neighbourer of B. C is 3rd to left of H. Who is sitting exactly in between F and E

[Dec. 2023]

(A) C
(B) E
(C) H
(D) A

9. Five persons are living in a five story building. Mr. Mahesh lives in flat above Mr. Ashok. Mr. Lokesh Lives in a flat below Mr. Gaurav and Mr. Rakesh lives in a flat below Mr. Lokesh. Who possibly lives in the ground floor? **[Dec. 2023]**

(A) Mr. Rakesh
(B) Mr. Lokesh
(C) Mr. Mahesh
(D) Mr. Gaurav

Answer the following questions: (Q. No. 10 and Q. No. 11)

Nine friends, J, K, L, M, N, O, P, Q and R, are sitting in a row. L is to the right of M and is at the third place to the right of N, K is at one end of the row. Q is seated adjacent to both O and P. O is at the third place to the left of K. J is right next to L and the left of O.

[Dec. 2023]

10. Who is immediate left to M?

(A) N
(B) R
(C) L
(D) J

11. Who is sitting at the center of the row?

(A) I
(B) J
(C) O
(D) Q

12. A, B, C, D, E and F are standing in a circle talking, facing inward. E is right to C who is standing 3 places away from D. A is standing 2 seats away from F. **[Jun. 2024]**

Which of the following has to be true?

(A) A is standing opposite to C
(B) A is standing next to E
(C) A is standing next to D
(D) A is standing next to B

13. Eight friends A, B, C, D, E, F, G, and H are sitting around a circular table facing the centre. A is sitting two places to the right of B, who is sitting directly opposite D. C is sitting to the immediate left of B and to the immediate right of E. F, who is opposite to G, is not sitting next to A. Who is sitting to the immediate left of H?

[Jun. 2024]

(A) A
(B) B
(C) C
(D) D

14. The persons named U, V, W, X, Y and Z are sitting along the circumference of a round table. They are facing the center of the round table. Given: X is the third left of Z and U is the second right of X, W is third to Y's right. Then V is sitting immediate left to

[Jun. 2024]

(A) Y
(B) U
(C) W
(D) X

15. 5 persons are standing in a line. The 2 persons at the extreme ends are a professor and a business man. An advocate is standing to the right of student. An author is to the left of the business man Counting from the Professor's end the author is at which place?

[Jun. 2024]

(A) 2nd
(B) 3rd
(C) 4th
(D) 5th

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

16. Five players named as A, B, C, D, and E are sitting on a bench, facing south and are waiting to be interviewed by a selector. The person C is an immediate neighbor of both A and B. The person A is the fourth person rom right end; If E is to the right of B, then where is E sitting? **[Jun. 2024]**

(A) Fifth from right end

(B) Fourth from right end

(C) Fifth from left end

(D) Second from right end

17. In a school cultural committee meeting, four girls Dipti, Aruna, Chandra, Bindu and four boys Gautam, Faneesh, Harendra, Eshaan are sitting in a circle around a table, facing each other as under:

(i) No two girls or boys are sitting side by side.

(ii) Chandra, who is sitting between Gautam and Eshaan, is facing Dipti.

(iii) Faneesh is between Dipti and Aruna and facing Gautam.

(iv) Harendra is to the right of Bindu.

Identify the person whom Eshaan is facing.

(A) Faneesh **[Sept. 2024]**

(B) Bindu

(C) Gautam

(D) Harendra

18. Six persons A, B, C, D, E and F are sitting in a row in a straight line. B is between F & D. E is between A & C. A does not sit next to F or D; C does not sit next to D. F is between which of the following persons?

(A) B & E **[Sept. 2024]**

(B) B & C

(C) B & D

(D) B & A

Note: Read the following information carefully and answer the questions (19 to 20) given below:

Six persons B, D, C, M, J and K are split into groups of three each and are made to stand in two rows in such a way that a person in one row is exactly facing a person in the other row. M is not at the ends of any row and is to the right of J, who is facing C. K is to the left of D, who is facing M.

19. Who is to the immediate left of B?

(A) M **[Sept. 2024]**

(B) J

(C) D

(D) K

20. Which of the following persons are in the same row? **[Sept. 2024]**

(A) BDC

(B) BMJ

(C) MJK

(D) MJD

21. During an interview, seven applicants sitting in a row are awaiting their turn. Chandresh is sitting left to Kuldeep but on the right to Diksha, Reshma is sitting right to Kuldeep, Priyanka is sitting right to Gayatri but left to Diksha. Himani is sitting left to Gayatri. The person sitting in the middle must be: **[Sept. 2024]**

(A) Chandresh

(B) Diksha

(C) Gayatri

(D) Priyanka GPDCKR

22. Eight persons A, B, C, D, E, F, G and H are sitting in two rows opposite to each other. Each row has 4 persons. B and C are sitting opposite side. C is sitting in between E and D. H is sitting immediate left of E. F and Hare sitting at diagonally opposite position. G is sitting extreme left. Who is sitting in front of E?

(A) F **[Jan. 2025]**

(B) G

(C) B

(D) A

(This is Vidhyoday's unique compilation of past attempts CA-F/CPT questions asked under Maths/Stats section.)

23. Five persons A, B, C, D and E are sitting in a circle facing centre. C is sitting immediate left of E. A is sitting in between E and D. Who is sitting between B and A? **[Jan. 2025]**

(A) C
(B) D
(C) E
(D) B

24. Five persons A, B, C, D & E sitting on a bench. A is immediate right of B. E is immediate left of C and immediate right of A. B is the right of D. Which person is sitting in the middle of bench? **[Jan. 2025]**

(A) B
(B) E
(C) A
(D) D

25. Five people A, B, C, D, E are seated about a round table facing outside the center but not necessary in the same order. A sits at immediate right of E. C sits third to the left of D, who sits at the immediate right of A. How many persons are sitting between C & D?

(A) 1 **[Jan. 2025]**
(B) 2
(C) 3
(D) 4

26. Five friends A, B, C, D and E are sitting in a row facing east. A is sitting between C & D. B is second to the left of C. Who is sitting at the south end? **[Jan. 2025]**

(A) E
(B) B
(C) C
(D) D

ANSWER KEY

1.	C	2.	B	3.	B	4.	D	5.	C
6.	C	7.	B	8.	D	9.	A	10.	B
11.	B	12.	C	13.	A	14.	D	15.	C
16.	C	17.	D	18.	B	19.	A	20.	B
21.	B	22.	D	23.	B	24.	C	25.	B
26.	D								