

India's Only Institute That Gives 100% Fees Refund If You Fail VIDHYODAY

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INDEX

S.NO.	CHAPTER NAME	PAGE NO.
1	Ratio and Proportion, Indices, Logarithms	1 – 9
2	Equations	10 – 17
3	Linear Inequalities	18 – 22
4	Mathematics of Finance	23 - 44
5	Basic concepts of Permutations and Combinations	45 - 52
6	Sequence and Series – Arithmetic and Geometric Progressions	53 - 59
7	Sets, Relations and Functions, Basic of Limits and Continuity Functions	60 - 65
8	Basic Application of Differential and Integral Calculus in Business & Economics	66 - 73
9	Number Series, Coding and Dec <mark>odi</mark> ng and Odd Man Out	74 - 82
10	Direction Sense Test	83 - 92
11	Seating Arrangements	93 - 101
12	Blood Relations	102 – 111
13	Statistical Description of Data & Sampling	112 – 121
14	Measures of Central Tendency and Dispersion	122 - 139
15	Probability	140 - 151
16	Theoretical Distributions	152 - 161
17	Correlation and Regression	162 – 170
18	Index Numbers	171 - 180





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 1 – RATIO AND PROPORTION, INDICES, LOGARITHMS

- 1. The students in three classes are in the ratio 2 : 3 : 5. If 40 students are increased in each class the ratio changes to 4 : 5 : 7. Originally the total number of students was
 - (a) 180
 - (b) 400
 - (c) 100
 - (d) 200
- 2. A bag contains coins of denominations 1 rupee , 2 rupee and 5 rupees . Their numbers are in the ratio 4:3:2 .If bag has total of Rs. 1800 then find the number of 2 rupee coins ?
 - (a) 270
 - (b) 230
 - (c) 180
 - (d) 210

2

- 3. 5 If $\log 4(x^2 + x) \log 4(x + 1) = 2$ then the value of x is
 - (a)
 - (b) 3
 - (c) 16
 - (d) 8
- 4. x, y and z are together starts business. If x invests 3 times as much as y invests and y invests two third of what z invests, then the raio of capitals of x, y and z is:
 - (a) 3:9:2
 - (b) 6:3:2
 - (c) 3:6:2
 - (d) 6:2:3

5. $\log_a \sqrt{3} = \frac{1}{6}$, find the value of a

- (a) 9
- (b) 81
- (c) 27
- (d) 3
- 6. $\log \frac{p^2}{qr} + \log \frac{q^2}{pr} + \log \frac{r^2}{pq} =$
 - (a) pqr

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	(b)	$\frac{1}{pqr}$
	(c)	1
	(d)	0
7.	Sim	plification $\frac{1}{1+z^{a-b}+z^{a-c}} + \frac{1}{1+z^{b-c}+z^{b-a}} + \frac{1}{1+z^{c-a}+z^{c-b}}$ would reduces to
	(a)	$\frac{1}{z^{2(a+b+c)}}$
	(b)	$\frac{1}{z^{(a+b+c)}}$
	(c)	1
	(d)	0

8. A bag conatind 25 paise, 10 paise and 5 paise are in the ratio 3:2:1. The total value of ₹ 40, the number of 5 paise coins is

- (a) 45
- (b) 48
- (c) 40
- (d) 20
- 9. If $2^x \times 3^y \times 5^z = 720$ then the value of x, y, z ?
 - (a) 4, 2, 1
 - (b) 1, 2, 4
 - (c) 2, 4, 1
 - (d) 1, 4, 2
- 10. 1 What must be added to each term of the ratio 49:68. So that it becomes 3:4?
 - (a) 3
 - (b) 5
 - (c) 8
 - (d) 9
- 11. The expenditures and savings of a person are in the ratio 4:1. If his savings are increased by 25% of his income, then what is the new ratio of his expenditure and savings ?
 - (a) 11:9
 - (b) 8:5
 - (c) 7:5
 - (d) 7:4

12. If $\log \frac{a-b}{2} = \frac{1}{2}$ (log a + log b), the value of $a^2 + b^2$ is

- (a) 6ab
- (b) 8ab
- (c) 6a²6²
- (d) None of these



- 13. P, Q and R three cities. The ratio of average temperature between P and Q is 11: 12 and that between P and R is 9:8. The ratio between the average temperature Q and R
 - (a) 22:27
 - (b) 27:22
 - (c) 32:33
 - (d) none of these
- 14. The third proportional between (a^2-b^2) and $(a+b)^2$ is :
 - (a) $\frac{a+b}{a-b}$
 - (b) $\frac{a-b}{a+b}$
 - (c) $\frac{(a-b)^2}{a+b}$

(d)
$$\frac{(a+b)^3}{a-b}$$

15. The value of $\log_{0.1} 0.001 =$

- (a) 3
- (b) 2
- (c) 4
- (d) 1/3
- 16. if $\log 4 x = -3/2$. Then x is
 - (a) 1/8
 - (b) ¼
 - (c) ½
 - (d) 1/3

17. What is the value of $\frac{p+q}{p-q}$ if $\frac{p}{q} = 7$

- (a) 2/3
- (b) 4/3
- (c) 2/6
- (d) 7/8

18. If $2^{x+y} = 2^{x-y} = \sqrt{8}$, then the value of x and y are

- (a) 1, ½
- (b) ¹/₂, 1
- (c) ¹/₂, ¹/₂
- (d) none of these

19. Given that $log_{10}2 = x$ and $log_{10}3 = y$, the value of $log_{10}120$ is expressed as

- (a) 2x y + 1
- (b) 2x + y + 1
- (c) 2x y 1
- (d) none of these





- 20. If four numbers $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{x}$, are proportional then x =
 - (a) $\frac{6}{5}$
 - (b) $\frac{5}{6}$
 - (c) $\frac{15}{2}$
 - (d) none
- 21. If $x = 2 + \sqrt{3}$ and $y = 2 \sqrt{3}$ then value of $x^2 + y^2 =$
 - (a) 14
 - (b) 4
 - (c) 2
 - (d) 6
- 22. The ratio of number of boys and 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 2/3?
 - (a) 19
 - (b) 20
 - (c) 23
 - (d) 27

- 23. A bag contains 23 number of coins in the form of 1 rupee, 2 rupee and 5 rupee coins. The total sum of the coins is ₹43. The ratio between 1 rupee and 2 rupees coins is 3 : 2, Then the number of 1 rupee coins.
 - (a) 12
 - (b) 8
 - (c) 10
 - (d) 16

24. On Simplification $\frac{1}{1+z^{a-b}+z^{a-c}} + \frac{1}{1+z^{b-c}+z^{b-a}} + \frac{1}{1+z^{c-a}+z^{c-b}}$ would reduces to

(a)
$$\frac{1}{z^{2(a+b+c)}}$$

(b)
$$\frac{1}{z^{(a+b+c)}}$$

- (c) 1
- (d) 0

25. $(18)^{3.5} \div (27)^{3.5} \times 6^{3.5} = 2x$, then the value of x is:

- (a) 3.5
- (b) 4.5
- (c) 6
- (d) 7



26. The value of
$$\frac{(243)^{0.13} \times (243)^{0.07}}{(7)^{0.25} \times (49)^{0.075} \times (343)^{0.2}}$$
 is :

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

- (b) $\frac{7}{3}$
- (c) $1\frac{3}{7}$ (d) $2\frac{2}{7}$

27. The number of prime factors in $\frac{6^{12} \times (35)^{28} \times (15)^{16}}{(14)^{12} \times (21)^{11}}$ is :

- (a) 56
- (b) 66
- (c) 112
- (d) none of these

28. $\log \frac{a^2}{bc} - \log \frac{ca}{b_2^2} + \log \frac{c^2}{ab} =$

- (a) 0
- (b) 1
- (c) log a
- (d) none of these.

29.
$$\frac{1}{\log_{xy}(xyz)} + \log_{xyx} yz + \frac{1}{\log_{xz}(xyz)} = ?$$

- (a) 1
- (b) 2
- (c) 3
- (d) None of these
- 30. If n = m! where ('m' is a positive integer > 2) then the value of:

2

$$\begin{aligned} &\frac{1}{\log_{2^{n}}} + \frac{1}{\log_{3^{n}}} + \frac{1}{\log_{4^{n}}} + \dots + \frac{1}{\log_{m^{n}}} \\ &(a) & 1 \\ &(b) & 0 \\ &(c) & -1 \\ &(d) & 2 \\ &\log_{4}(x^{2} + x) - \log_{4}(x + 1) = 2. \text{ find } x. \end{aligned}$$

(b) 0

31.

- (c) -1
- (d) None of these



- 32. If $x = \log_{24}12$; $y = \log_{36}24$; $z = \log_{48}36$ then xyz + 1 = ?
 - (a) 2xy
 - (b) 2zx
 - (c) 2yz
 - (d) 2
- 33. Find the value of : $[1 {1 (1 x^2)^{-1}}]^{-1/2}$ is
 - (a) 1/x
 - (b) x
 - (c) 1
 - (d) None of these
- 34. The value of $(3^{n+1}+3^n) / (3^{n+3}-3^{n+1})$ is equal to :
 - (a) 1/5
 - (b) 1/6
 - (c) 1/4
 - (d) 1/9
- 35. If $u^5x = v^5y = w^5z$ and $u^2 = vw$ then xy + zx 2yz
 - (a) 0
 - (b) 1
 - (c) 2
 - (d) None of these
- 36. The ratio of the prices of two Fans was 16: 23. Two years later when the price of the first has increased by 10% and that of the second by ₹ 477, the ratio of the prices becomes 11: 20. Find the original prices of the two Fans.
 - (a) ₹848, ₹1,219.
 - (b) ₹838, ₹1,119.
 - (c) ₹828, ₹1,219.
 - (d) ₹848₹1,229.
- 37. If a: b = 3: 4, the value of (2a+3b): (3a+4b) is
 - (a) 54:25
 - (b) 8:25
 - (c) 17:24
 - (d) 18:25
- 38. The third proportional to 49 and 21
 - (a) 6
 - (b) 9
 - (c) 12
 - (d) 28
- 39. Given that $log_{10}2 = x$ and $log_{10}3 = y$, the value of $log_{10}60$ is expressed as
 - (a) x y + 1



- (b) x + y + 1
- (c) x y 1
- (d) none of these
- 40. 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:
 - (a) ₹3,400
 - (b) ₹3,600
 - (c) ₹4,000
 - (d) ₹4,400
- 41. The mean proportional between $12x^2$ and $27 y^2$ is:
 - (a) 18xy
 - (b) 81xy
 - (c) 8xy
 - (d) 19.5xy
- 42. $\log 2 \log 2 \log 4 256 + 2 \log \sqrt{2} 2$ is equal to:
 - (a) 2
 - (b) 3
 - (c) 5
 - (d) 7
- 43. What is the value of $\left(\frac{x^{b}}{x^{c}}\right)^{(b+c-a)} \times \left(\frac{x^{c}}{x^{a}}\right)^{(c+a-b)} \times \left(\frac{x^{a}}{x^{b}}\right)^{(a+b-c)} = ?$
 - (a) x(abc)
 - (b) $x^{(a+b+c)}$
 - (c) -1
 - (d) 1
- 44. The ratio of two numbers are 3 : 4. The difference of their squares is 28. Greater number is:
 - (a) 8
 - (b) 12
 - (c) 24
 - (d) 64
- 45. The price of scooter and moped are in the ratio 7 : 9. The price of moped is ₹ 1600 more than that of scooter. Then the price of moped is:
 - (a) ₹7200
 - (b) ₹5600
 - (c) ₹800
 - (d) ₹700
- 46. $\log_{0.01} 10,000 = ?$
 - (a) 2

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	(b)	-2
	(c)	4
	(d)	-4
47.	Value	e of $\left[9^{n+\frac{1}{4}} \cdot \frac{\sqrt{3 \cdot 3^n}}{3 \cdot \sqrt{3^{-n}}}\right]^{\frac{1}{n}}$

- (a) 9
- (b) 27
- (c) 81
- (d) 3
- 48. Roots of the equation $x^3+9x^2 x 9 = 0$.
 - (a) 1, 2, 3
 - (b) 1, 1, 9
 - (c) 2, 3, 9
 - (d) 1, 3, 9





1	d	2	d	3	С	4	d	5	С
6	d	7	С	8	С	9	а	10	С
11	а	12	а	13	b	14	d	15	а
16	а	17	b	18	а	19	b	20	С
21	а	22	а	23	d	24	С	25	а
26	а	27	b	28	а	29	d	30	b
31	b	32	С	33	b	34	b	35	b
36	а	37	d	38	b	39	b	40	С
41	а	42	С	43	d	44	а	45	а
46	b	47	b	48	b				







CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 2 – EQUATIONS

- 1. 4 tables and 3 chairs together cost ₹ 2,250 and 3 tables and 4 chairs cost ₹ 1950. Find the cost of 2 chairs and I table.
 - (a) ₹550

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- (b) ₹1005
- (c) ₹750
- (d) None of these
- 2. One root of the equation: $x^2 2(5 + m) + 3(7 + m) = 0$ is reciprocal of the other. Find the value of m.
 - (a) -20/3
 - (b) 7
 - (c) 1/7
 - (d) 117
- 3. The ages of two persons are in the ratio 5:7. Eighteen years ago their ages were in the ratio of 8:13, their present ages (in years) are :
 - (a) 50,70
 - (b) 70,50
 - (c) 40,56
 - (d) None of these
- 4. A box contains ₹ 56 in the form of coins of one rupee, 50 paise and 25 paise. The number of 50 paise coin is double the number of 25 paise coins and four times the numbers of one rupee coins. The numbers of 50 paise coins in the box is
 - (a) 64
 - (b) 32
 - (c) 16
 - (d) 14
- 5. A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹ 1,500 after 4 years of service and ₹ 1,800 after 10 years of service, what was his starting salary and what is the annual increment in rupees?
 - (a) ₹1,300, ₹50
 - (b) ₹1,100, ₹50
 - (c) ₹1,500, ₹30
 - (d) None



- 6. Find the positive value of k for which the equations: $x^2 + kx + 64 = 0$ and $x^2 8x + k = 0$ will have real roots:
 - (a) 12
 - (b) 16
 - (c) 18
 - (d) 22
- 7. if α and β are the roots of the equation $x^2+7x+12 = 0$, then the equation, whose roots are $(\alpha+\beta)^2$ and $(\alpha-\beta)^2$ will be
 - (a) $x^2 14x + 49 = 0$
 - (b) $x^2 24x + 144 = 0$
 - (c) $x^2-50x+49=0$
 - (d) $x^2 19x + 144 = 0$
- 8. If one root is $5z^2+13z+y = 0$ be receiprocal of the other then the value of y is
 - (a) $\frac{1}{5}$
 - (b) $-\frac{1}{5}$
 - (c) 5
 - (d) -5
- 9. A man wants to cut three lengths from a single piece of boaard of length 91 cm. The Second length is to be 3 cm longer than the shortest and third length is to be twice as the shortest. What is the possible length for the shortest piece?
 - (a) 22
 - (b) 20
 - (c) 15
 - (d) 18
- 10. The sum of two numbers is 75 and their difference is 20. Find the difference of their squares.
 - (a) 1500
 - (b) 1600
 - (c) 1550
 - (d) None of these
- 11. A number consists of two digits. The digits in tens place is 3 times the digit in the unit's place. If 54 is subtracted from the digits are reversed. The number is
 - (a) 39
 - (b) 92
 - (c) 93
 - (d) 94
- 12. The equation $x^2 (P+4)x + 2P+5 = 0$ has equal roots The value of p is
 - (a) 2
 - (b) -2
 - (c) ±2
 - (d) 3



13.

х	5	6	7	8
у	11	13	15	17

In the above table corresponding values of two variable x and y have been given. Which of the following equations establishes the relationship between the two variables?

- (a) y = 3x+2
- (b) y = 2x-1
- (c) y = 2x+1
- (d) y = 3x+1

14. Equations of two lines of regression are 4x+3y+7 = 0 and 3x+4y+8 = 0, the mean of x and y are

- (a) 5/7 and 6/7
- (b) -4/7 and -11/7
- (c) 2 and 4
- (d) None of these

15. The equation $x^3 - 3x^2 - 4x + 12 = 0$ has three real roots, they are:

- (a) -2, 2, 3
- (b) -2, -2, 3
- (c) 2, -2, -3
- (d) -2, 2, -3

If α and β are roots of the equation $x^2 - 8x + 12 = 0$ then $1/\alpha + 1/\beta =$ ____

(a) 2/3

16.

- (b) 2/4
- (c) 3/4
- (d) 4/5

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

- (a) -2 and -5
- (b) 2 and 5
- (c) 2 and -5
- (d) -2and 5

18. If the ratio of the roots of the Equation $4x^2-6x+p=0$ is 1:2 then the value of p is:

- (a) 1
- (b) 2
- (c) -2
- (d) -1
- 19. 4 tables and 3 chairs, together, cost ₹2,250 and 3 tables and 4 chairs cost ₹ 1950. Find the cost of 2 chairs and I table.
 - (a) ₹550
 - (b) ₹1005
 - (c) ₹750
 - (d) None of these



- 20. Aman walks a certain distance with certain speed. If he walks 1/2 km an hour faster, he takes 1 hour less. But, if he walks 1 km an hour slower, he takes 3 more hours. Find the distance covered by the man and his original rate of walking.
 - (a) 36 km, 4 km/hr
 - (b) 40 km, 10 km/hr
 - (c) 50 km, 20 km/hr
 - (d) None of these

21. If α ; β are the roots of the quadratic equation $3x^2 + 4x + 1 = 0$; the equation having roots $\frac{\alpha^2}{\beta}$; $\frac{\beta^2}{\alpha}$

- (a) 9x2 28x + 3 = 0;
- (b) $9x^2 28x + 1 = 0$
- (c) 9x2 28x + 5 = 0;
- (d) None of these.
- 22. In a two digits number; the digit in the ten's place is twice the digit in the unit's place. If 18 be subtracted from the number the digits are reversed. Find the number.
 - (a) 63
 - (b) 21
 - (c) 42
 - (d) None of these
- For a certain commodity the demand equation giving "y" units for a price "p" in rupees per unit is y = 100 (10 p). The supply equation giving the supply z units for a price "p" in rupees per unit is z = 75(p-3). The market price is such at which demand equals supply. Find the market price and quantity that will be brought and sold.
 - (a) ₹7; 300 units
 - (b) ₹8; 400 units
 - (c) ₹ 5; 200 units
 - (d) None
- 24. 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:
 - (a) 86 years
 - (b) 73 years
 - (c) 68 years
 - (d) 63 years
- 25. Roots of the equation $3x^2 14x k = 0$ will be reciprocal of each other if:
 - (a) k=-3
 - (b) k = 0
 - (c) k = 3
 - (d) k = 14



- 26. It roots of equation $x^2 + x + r = 0$ are ' α ' and ' β ' and $\alpha^3 + \beta^3 = -6$. Find the value of 'r'?
 - (a) -5/3
 - (b) 7/3
 - (c) -4/3
 - (d) 1
- 27. 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 the No. of units. The cost price of the article is ₹ 10 per unit. The maximum quantity that can be offered in single deal to avoid loss is:
 - (a) 6
 - (b) 7
 - (c) 8
 - (d) 9
- 28. What should be added to $4x^2+4x$, so that it becomes perfect square?
 - (a) 4
 - (b) 2
 - (c) 1
 - (d) 1/2
- 29. The sum of two numbers is 62 and their product is 960. The sum of their reciprocals is
 - (a) $\frac{31}{480}$
 - (b) $\frac{29}{480}$
 - (c) $\frac{61}{960}$
 - (d) $\frac{61}{960}$
- 30. Three persons Mr. Roy, Mr. Paul and Mr. Singh together have ₹ 51. Mr. Paul has ₹ 4 less than Mr. Roy and Mr. Singh has got ₹ 5 less than Mr. Roy. They have the money as.

- (a) (₹20, ₹16, ₹15)
- (b) (₹15, ₹20, ₹16)
- (c) (₹25, ₹11, ₹15)
- (d) none of these
- 31. The roots of the quadratic equation $x^2-4x+k = 0$ are coincident if
 - (a) k = 4
 - (b) k = 3
 - (c) k = 2
 - (d) k = 1
- 32. The three roots of the cubic equation $x^3+9x^2-x-9=0$ is
 - (a) -1, +1, and 9
 - (b) -1, +1 and -9



- (c) -1, +1 and 1/9
- (d) -1, +1 and 1/9
- 33. Given the quadratic equation $2X^{\frac{1}{3}} + 2x^{\frac{1}{3}} = 5$. Its roots are.
 - (a) $2 \text{ and } \frac{1}{2}$
 - (b) $4 \text{ and } \frac{1}{4}$
 - (c) 8 and 1/8
 - (d) 16 and 1/16
- 34. The wages of 8 men and 6 boys amount to ₹ 33. If 4 men earn ₹ 4.50 more than 5 boys determine the wages of each man and boy.
 - (a) (₹ 1.50, ₹ 3)
 - (b) (₹3, ₹1.50)
 - (c) (₹ 2.50, ₹ 2)
 - (d) (₹2,₹2.50)
- 35. The roots of the equation $x^2 + (2p-1)x + p = 0$ are real if.
 - (a) $p \ge 1$
 - (b) $p \le 4$
 - (c) p ≥¼
 - (d) $p \leq \frac{1}{4}$
- 36. 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;
 - (a) 39
 - (b) 62
 - (c) 93
 - (d) 31
- 37. 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?
 - (a) (15,10)
 - (b) (10, 15)
 - (c) (10,20)
 - (d) (20,10)

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

- (a) 2
- (b) 1
- (c) -2
- (d) -1

39. If one of the root of the cubic equation $3x^3 - 5x^2 - 11x - 3 = 0$ is -1/3. then other two roots are: -

- (a) 1 & 3
- (b) -1 & 3
- (c) 1 & -3
- (d) -1 &-3

- 40. $\frac{2x+5}{10} + \frac{3x+10}{15} = 5$, then value of x
 - (a) 10.58
 - (b) 9.58
 - (c) 9.5
 - (d) None of these

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

- (a) 25
- (b) 1
- (c) 0
- (d) 49
- 42. Find the value of k in $3x^2 2kx + 5 = 0$, if x = 2.
 - (a) 17/4
 - (b) -7/14
 - (c) 4/17
 - (d) -4/17





1	С	2	а	3	а	4	а	5	а
6	b	7	С	8	С	9	а	10	а
11	С	12	С	13	С	14	b	15	а
16	а	17	а	18	С	19	С	20	а
21	b	22	С	23	а	24	b	25	С
26	а	27	b	28	С	29	а	30	а
31	а	32	b	33	С	34	b	35	d
36	С	37	d	38	а	39	b	40	b
41	С	42	а						



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1. A small manufacturing firm produces two types of gadgets A and B, which are first processed in the foundry then sent to the machine shop for finishing. The number of man-hours of labour required in each shop for the production of each unit of A and B, and the number of man-hours the firm has available per week are as follows:

Gadget	Foundry	Machine-shop
А	10	5
В	6	4
Firm's capacity per week	1000	600

Let the firm manufactures x units of A and y units of B. The constraints are:

(a) $10x+6y \le 1000$, $5x+4y \ge 600$, $x \ge 0$, $y \le 0$

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- (b) $10x+6y \le 1000$, $5x+4y \le 600$, $x \ge 0$, $y \ge 0$
- (c) $10x+6y \ge 1000$, $5x+4y \le 600$, $x \le 0$, $y \le 0$
- (d) $10x+6y \le 1000$, $5x+4y \ge 600$, $x \le 0$, $y \le 0$
- 2. The shaded region represents:

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- (a) $3x + 2y \le 24, x + 2y \ge 16, x + y \le 10x, x \ge 0, y \ge 0$
- (b) $3x+2y \le 24, x+2y \le 16, x+y > 10, x \ge 0, y \ge 0$
- (c) $3x+2y \le 24, x+2y \le 16, x+y < 10, x>0, y>0$
- (d) None of these.
- 3. The time required to produce a unit of product A is 3 hours and that for product B is 5 hours. The total available time is 220 hours. If x and y are the number of units of A and B that are produced then
 - (a) 3x+2y=220
 - (b) $3x+5y \ge 220, x \ge 0, y \ge 0$
 - (c) $3x+5y \le 220, x \ge 0, y \ge 0$
 - (d) $5x+2y \ge 220, x \ge 0, y \ge 0$
- 4. Graph of the following linear inequalities :

x+y≥1, y≤5, x≤6, 7x+9y≤63, x≥0, y≥0 is given below;

Page| 18





- (b) BCGB
- (c) ABCDEFA
- (d) EDKE
- 5. A manufacturer produces two items A and B. He has ₹ 10,000 to invest and a space to store 100 its ms. A table costs him ₹ 400 and a chair ₹ 100. Express this in the form of linear inequalities.
 - (a) $x + y \le 100, 4x + y \le 100, x \ge 0, y \ge 0$
 - (b) $x + y \le 1000, 2x + 5y < 1000, x \ge 0, y \ge 0$
 - (c) $x + y > 100, 4x + y \ge 100, x \ge 0, y \ge 0$
 - (d) none of these
- 6. If 2x+5 > 3x+2 and $2x-3 \le 4x-5$, then x takes which of the following value ?
 - (a) 4
 - (b) -4
 - (c) 2
 - (d) -2

7. Solve for x of the Inequalities $2 \le \frac{3x-2}{5} \le 4$ where $x \in N$

- (a) {5,6,7}
- (b) {3,4,5,6}
- (c) {4,5,6}
- (d) {4,5,6,7}
- 8. The shaded region represents:



(a) 3x + 2y < 24, x + 2y > 16, x + y < 10x, x > 0, y > 0



- (b) 3x+2y<24, x+2y<16, x+y>10, x>0, y>0
- (c) 3x + 2y < 24, x + 2y < 16, x + y < 10, x > 0, y > 0
- (d) None of these.
- 9. The solution of the inequality $\frac{(5-2x)}{3} \le \frac{x}{6} 5$ is
 - (a) x>8
 - (b) x≤8
 - (c) x=8
 - (d) none of these
- 10. The shaded region represents



- (a) $3x + 2y \le 24, x + 2y \ge 16, x + y \le 10x, x \ge 0, y \ge 0$
- (b) $3x+2y \le 24, x+2y \le 16, x+y \ge 10, x \ge 0, y \ge 0$
- (c) $3x + 2y \le 24, x + 2y \le 16, x + y \le 10, x \ge 0, y \ge 0$
- (d) None of these.
- 11. Which of the following graph represents the in equality $x + y \le 6$ is



(d) None of these



- 12. On solving the inequalities $2x + 5y \le 20, 3x + 2y \le 12, x \le 0, y \le 0$, we get the following situation
 - (a) (0, 0), (0, 4), (4, 0) and (20/11, 36/11)
 - (b) (0, 0), (10, 0), (0, 6) and (20/11,36/11)
 - (c) (0, 0), (0, 4), (4, 0) and (2, 3)
 - (d) (0, 0), (10, 0), (0, 6) and (2, 3)
- 13. On the average experienced person does 5 units of work while a fresh one 3 units of work daily but the employer has to maintain an output of at least 30 units of work per day. This situation can be expressed as,
 - (a) $5x + 3y \leq 30$
 - (b) 5x + 3y > 30
 - (c) $5x+3y \ge 30 \ x \ge 0, y \ge 0$
 - (d) none of these
- 14. The shaded area is represented by which of the following option?



- (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
- 15. 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' units of food-2, how dietician recommendation can be expressed?

(a) $20x + 10y \le 45$; $5x + 2y \ge 25$; $3x + 4y \le 15$; $2x + 5y \ge 15$; $x \ge 0$; $y \ge 0$

- (b) $20x + 10y \le 25$; $5x + 2y \ge 45$; $3x + 4y \le 15$; $2x + 5y \ge 15$; $x \ge 0$; $y \ge 0$
- (c) $20x + 10y \ge 45$; $5x + 2y \ge 25$; $3x + 4y \ge 15$; $2x + 5y \ge 15$; $x \ge 0$; $y \ge 0$
- (d) $20x + 10y \le 45$; $5x + 2y \le 25$; $3x + 4y \le 15$; $2x + 5y \le 15$; $x \ge 0$; $y \ge 0$

16. $6x + y \ge 18$, $x + 4y \ge 12$, $2x + y \ge 10$, On solving the inequalities; we get:

- (a) (0, 18), (12, 0), (4, 2) & (7, 6)
- (b) (3, 0), (0, 3), (4, 2) & (7, 6)
- (c) (5, 0), (0, 10), (4, 2) & (7, 6)
- (d) (0, 18), (12, 0), (4, 2), (0, 0) & (7, 6)



ANSWERS KEY

1	b	2	С	3	С	4	С	5	а
6	С	7	d	8	С	9	а	10	С
11	а	12	а	13	С	14	а	15	с
16	а								





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 4 – MATHEMATICS OF FINANCE

- 1. 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) 2:15
 - (b) 7:15
 - (c) 15:7
 - (d) 1:7
- 2. How much money is required to be invested every year as to accumulate Rs,6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : (1.1)¹⁰=259734
 - (a) ₹37,467
 - (b) ₹37,476
 - (c) ₹37,647
 - (d) ₹37,674

- 3. The Scarap value of machine valued at Rs,10,00,000 after 15 years of depreciation is 10% per annum.
 - (a) ₹215891.13
 - (b) ₹205891.13
 - (c) ₹225891.13
 - (d) None
- 4. The effective annual rate of interest corresponding to nominal rate 6% p.a. payable quaterly is:
 - (a) 6.14%
 - (b) 6.07%
 - (c) 6.08%
 - (d) 6.09%
- 5. If the difference between the compound interest compounded annually and simple interest on a certain amount at 10% per annum for two years is ₹ 372, then the principal amount is.
 - (a) ₹37,000
 - (b) ₹37,200
 - (c) ₹37,500
 - (d) None of the above
- 6. The future value of an annuity of ₹ 1500 made annually for 5 years at an interest rate of 10% compounded annually is[Given that $(1.1)^5 = 1.61051$]
 - (a) 9517.56
 - (b) 9157.65

VIDHYODAY

VIDHYA KA UDAY



- (c) 9715.56
- (d) 9175.65
- 7. Find the present value of an annuity of ₹ 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) ₹7,360
 - (b) ₹8,360
 - (c) ₹12,000
 - (d) None of these.
- 8. Mr. A borrows 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?
 - (a) ₹58239.84
 - (b) ₹58729.84
 - (c) ₹68729.84
 - (d) None of these
- 9. Suppose your mom decides to gift you ₹ 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 compounded annually. What is the present value of this money: [Given that P (15, 0.085) = 8.304236]
 - (a) ₹83,042
 - (b) ₹90,100
 - (c) ₹93,042
 - (d) ₹10,100

10. What will be the population after 3 years , when present population is 1,00,000 and the population increases at 3% in year 1st year , at 4% in second year and 5% in third year.

- (a) 1,12,476
- (b) 1,15,476
- (c) 1,20,576
- (d) 1,25,600
- 11. Find the present value of an annuity which pays 200 at the end of each 3 months for 10 years assuming money to be worth 5% converted quarterly?
 - (a) ₹3473.86
 - (b) ₹3108.60
 - (c) ₹6265.38
 - (d) None of these
- 12. The value of furniture depreciates by 10% a year, if the present value of the furniture in an office is ₹ 21870, calculate the value of furniture 3 years ago:
 - (a) ₹ 30,000
 - (b) ₹40,000
 - (c) ₹35,000

VIDHYODAY VIDHYA KA UDAY

(d) ₹50,000



- 13. A sum of money, lent out at simple interest, doubles itself in 8 years. Find in how many years will the sum become triple (three times) of itself at the same rate per cent ?
 - (a) 16 years
 - (b) 15 years
 - (c) 20 years
 - (d) None.
- 14. Find future value of annuity of ₹ 1000 made annualy for seven yeras at interest rate 16% compounded annually. [Given that (1.16)⁷= 2.8262]
 - (a) ₹11413.75
 - (b) ₹11000.35
 - (c) ₹8756
 - (d) ₹9892.34
- 15. Assuming that the discount rate is 7% is p.a. How much would you pay to receive ₹ 500. Growing at 5% annually forever?
 - (a) ₹2,500
 - (b) ₹5,000
 - (c) ₹7,500
 - (d) ₹25,000
- Rajesh deposits ₹ 3,000 at the start of each quarter in his savings account. If the account earns interest 5.75% per annum compounded quarterly, how much money (in ₹) while he have at the end of 4 years? [Given that (1.014375)¹⁶ = 1.25654]
 - (a) ₹54,308.6
 - (b) ₹58,553.6
 - (c) ₹68,353.6
 - (d) ₹63,624.4
- 17. The annual rate of simple interest is 12.5%. In how many years does principal doubles?
 - (a) 11 years
 - (b) 9 years
 - (c) 8 years
 - (d) 7 years
- 18. ₹ 5000 is paid every year for 10 years to pay off a loan. What is the loan amount of interest rate be 14% p.a compounded annualy?
 - (a) ₹26,000.90
 - (b) ₹26080.55
 - (c) ₹15000.21
 - (d) ₹16,345.11
- 19. \mathbb{R} 800 is invested at the end of each month in account paying interest 6% per year compounded monthly. What is the future value of annuity after 10th payment? [Given that $(1.005)^{10} = 1.0511$]
 - (a) ₹4444
 - (b) ₹8766
 - (c) ₹3491
 - (d) ₹8176



- 20. Certain sum of money borrowed at simple interest to ₹ 2688 in three years and to ₹ 2784 in four years at the rate per annum equal to
 - (a) 4%
 - (b) 6%
 - (c) 5%
 - (d) 7%
- 21. Ravi made of an investment of ₹ 15,000 in a scheme and at the time of maturity the time of maturity the amount was ₹ 25,000. If Compound Annual Growth Rate (CAGR) for this investment is 8.88%. Calculate the approximate number of years for which he has invested the amount.
 - (a) 6
 - (b) 7.7
 - (c) 5.5
 - (d) 7
- 22. The present value of an annuity which pays ₹200 at the end of each 3 months for 10 years, assuming money to be worth 5% converted quarterly
 - (a) ₹3473.86
 - (b) ₹3108.60
 - (c) ₹114180.44
 - (d) none of these
- 23. Rajesh invests ₹ 20,000 per year in a stock index fund, with earns 9% per year, for the next ten years.What would be closest value of accumulated investment upon payment of the last installment? [Given: $(1.09)^{10} = 2.36736$]
 - (a) ₹3,88,764.968
 - (b) ₹ 3,03,858.564
 - (c) ₹2,68,728.484
 - (d) ₹4,08,718.364
- An investment is earning compounded interest ₹ 100 invested in the year 2 accumulated to ₹ 105 by year
 4. If ₹ 500 invested in the year 5, will become ₹ _____by year 10.
 - (a) ₹364.80
 - (b) ₹564.80
 - (c) ₹464.80
 - (d) ₹664.80
- 25. An investor is saving to pay off an obligation of ₹ 15,250 which will due in seven years, if the investor is earning 7.5% simple interest rate per annum, he must deposit ₹ _____ to meet the obligation.
 - (a) ₹8,000
 - (b) ₹9,000
 - (c) ₹10,000
 - (d) ₹11,000
- 26. The value of scooter is ₹ 1,00,000 find its depreciation is 10% p.a. Calculate total depreciation value at the end of seven years.
 - (a) ₹47829.70
 - (b) ₹47000.90



- (c) ₹42709
- (d) ₹42,000
- 27. Effective rate of interest does not depend upon
 - (a) Amount of Principal
 - (b) Amount of Interest
 - (c) Number of conversion periods
 - (d) none of these
- 28. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.
 - (a) 10.38%
 - (b) 5%
 - (c) 5.04%
 - (d) 4%
- 29. Arslan invested ₹ 10,000 at 8% per annum compound quarterly, then the value of the investment after 2 years is [given (1.02)⁸ = 1.171659]
 - (a) ₹11,716.59
 - (b) ₹10,716.59
 - (c) ₹117.1659
 - (d) None of the above
- 30. The future value of an annuity of ₹ 1,000 made annually for 5 years at the interest of 14% compounded annually is:
 - (a) ₹5,610
 - (b) ₹6,610
 - (c) ₹6,160
 - (d) ₹5,160
- 31. A man invests an amount of ₹ 15,860 in the names of his three sons A, B and C in such a way that they get the same interest after 2,3 and 4 years respectively. If the rate of interest is 5%, then the ratio of amount invested in the name of A, B and C is.
 - (a) 6:4:3
 - (b) 3:4:6
 - (c) 30:12:5
 - (d) None of the above
- 32. What annual payment will discharge a debt of ₹ 770 due in years, the rate of interest being 5% per annum?
 - (a) ₹150
 - (b) ₹140
 - (c) ₹130
 - (d) None of these
- 33. In ______ receipts / payments takes place forever.
 - (a) Annuity
 - (b) Perpetuity

VIDHYODAY VIDHYA KA UDAY



- (c) Annuity regular
- (d) Annuity due
- 34. Present value of a scooter is ₹ 7,290 if its value decreases every year by 10% then its value before 3 years is equal to:
 - (a) 10,000
 - (b) 10,500
 - (c) 20,000
 - (d) 20,5000
- 35. How much amount is required to be invested every year so as to accumulate ₹ 3,00,000 at the end of 10 years, if interest is compounded annually at 10%?
 - (a) ₹18,823.65
 - (b) ₹18,000
 - (c) ₹18,728.65
 - (d) ₹18,882.65
- 36. A company may obtain a machine either by leasing it for 5 years (useful life) at an annual rent of Rs. 2,000 or by purchasing the machine for Rs. 8,100. If the company can borrow money at 18% per annum, which alternative is preferable?
 - (a) Leasing
 - (b) Purchasing
 - (c) Can't say
 - (d) None of these
- 37. The time by which a sum of money is 8 times of itself if it doubles itself in 15 years.
 - (a) 42 years
 - (b) 43 years
 - (c) 45 years
 - (d) 46 years
- 38. Mr. X invests 'P' amount at Simple Interest rate 10% and Mr. Y invests 'Q' amount at Compound Interest rate 5% compounded annually. At the end of two years both get the same amount of interest, then the relation between two amounts P and Q is given by:

$$(a) \qquad P = \frac{41Q}{80}$$

(b)
$$P = \frac{41Q}{40}$$

- (c) $P = \frac{41Q}{100}$
- $(d) \qquad P = \frac{41Q}{200}$
- 39. In what time will a sum of money double its y at 6.25% p.a. simple interest?
 - (a) 5 years
 - (b) 8 years
 - (c) 12 years
 - (d) 16 years



- 40. The difference between compound and simple interest at 5% per annum for 4 years on ₹ 20,000 is
 - (a) 250
 - (b) 277
 - (c) 300
 - (d) 310
- 41. In how many years will a sum of money double at 5% p.a compounded interest?
 - (a) 15 years 3 months
 - (b) 14 years 2 months
 - (c) 14 years 3 months
 - (d) 15 years 3 months
- 42. A machine worth ₹ 4,90,740 is depreciated at 15% of its opening value each year. When would its value reduce by 90%?
 - (a) 11 years 6 months
 - (b) 11 years 7 months
 - (c) 11 years 8 months
 - (d) 14 years 2 months approximately
- 43. Assuming, that discount rate is 7% per annum, how much would you pay to receive ₹ 50, growing at 5%, annually, forever.
 - (a) 2500
 - (b) 3000
 - (c) 3500
 - (d) 4000
- 44. Future value of Ordinary Annuity
 - (a) $A(n, i) = A\left[\frac{(1+i)^{n}-1}{i}\right]$ (b) $A(n, i) = A\left[\frac{(1+i)^{n}+1}{i}\right]$ (c) $A(n, i) = A\left[\frac{1-(1+i)^{n}}{i}\right]$ (d) $A(n, i) = A\left[\frac{(1+i)^{n}-1}{i(1+i)^{n}}\right]$
- 45. Nominal rate of Interest 9.9% p.a. If Interest is compounded monthly. What will be the effective rate of Interest? (Given $\left(\frac{4033}{4000}\right)^{12} = 1.1036$)
 - (a) 10.36 %
 - (b) 9.36%
 - (c) 11.36%
 - (d) 9.9 %





- 46. A machine worth of ₹ 4,90,740 is depreciated at 15% on its opening value each year. When its value reduces to ₹ 2,00,000
 - (a) 4 years 6 months
 - (b) 4 years 7 months
 - (c) 4 years 5 months
 - (d) 5 years 7 months approximately
- 47. A sinking fund is created redeeming debentures worth ₹ 5,00,000 at the end of 25 years. How much provision need to be made out of profits each year provided sinking fund investments can earn at 4 % per annum
 - (a) 12,006
 - (b) 12,040
 - (c) 12039
 - (d) 12035
- 48. Nominal Rate of Return =
 - (a) Real Rate of Return Inflation
 - (b) Real Rate of Return + Inflation
 - (c) Real Rate of Return / Inflation
 - (d) Real Rate of Return \times Inflation
- 49. Net Present value ≥ 0 , then
 - (a) Accept the Proposal
 - (b) Reject the proposal
 - (c) Not Feasible
 - (d) None of the above
- 50. A sum of Money doubles itself at compound interest in 10 years. In how many years will it become eight times
 - (a) 10
 - (b) 30
 - (c) 40
 - (d) 35
- 51. The time in which a sum of money will be doubled at 6% compound interest compounded interest compounded annually approximately.
 - (a) 10 years
 - (b) 12 years
 - (c) 13 years
 - (d) 14 years
- 52. The amount charged for a defined length of time for uses of principal, generally on year basis is known as
 - (a) Balance
 - (b) Rate of Interest
 - (c) Principal
 - (d) EMI





- 53. The sum required to earn a monthly interest of ₹ 1200 at 18% p.a. Simple Interest is
 - (a) ₹50,000
 - (b) ₹60,000
 - (c) ₹80,000
 - (d) None of these
- 54. Sachin deposited ₹ 1,00,000 in his bank for 2 years at simple interest of 6%. How much interest would be he earns? How much final value of deposit
 - (a) ₹6,000, ₹1,06,000
 - (b) ₹15,000, ₹1,15,000
 - (c) ₹11,600, ₹1,11,600
 - (d) ₹12,000, ₹1,12,000
- 55. The ratio of principal and the compounded interest value for three years (Compounded annually) is 216:127. The rate of interest is:
 - (a) 0.1777
 - (b) 0.1567
 - (c) 0.1666
 - (d) 0.1587
- 56. The Compounded interest ₹8000 for 6 months at 12% p.a payable quarterly is:
 - (a) ₹487.20
 - (b) ₹480
 - (c) ₹380
 - (d) None of these



- 57. The annual birth and death rates per 1,000 are 39.4 and 19.4 respectively. The number of years in which the population will be doubled assuming there is no immigration or emigration is:
 - (a) 35 years
 - (b) 30 years
 - (c) 25 years
 - (d) none of these
- 58. The simple interest on 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) 2:15
 - (b) 7:15
 - (c) 15.7
 - (d) 1:7
- 59. Nominal rate of Interest is 9.9 % p.a. If interest is compounded monthly, what will be effective rate of Interest.
 - (a) 10.35%
 - (b) 9.36%
 - (c) 11.36%
 - (d) 9.9%



- 60. The population of a town increases by 2% of the population at the beginning of the year. The number of years by which the total increases in population would be 40% is:
 - (a) 7 years
 - (b) 10 years
 - (c) 17 years
 - (d) 19 years
- 61. A stock pays annually an amount of ₹ 10 from 6th year onwards. What is the present value of perpetuity, if the rate of return is 20%
 - (a) 20.1
 - (b) 19.1
 - (c) 21.1
 - (d) 22.1
- 62. A sum of money invested in compounded interest doubles itself in four years. In how many years it becomes 32 times of itself as the same rate of compound interest?
 - (a) 12 years
 - (b) 16 years
 - (c) 20 years
 - (d) 24 years
- 63. Sinking fund factor is the reciprocal of _____
 - (a) Present value of interest factor of a single cash flow
 - (b) Present value interest factor of annuity **DHYODAY**
 - (c) Future value of Interest factor of annuity
 - (d) Future value of Interest factor of a single cash flow
- 64. 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:
 - (a) 1.587 P
 - (b) 1.921P
 - (c) 1.403P
 - (d) 2.51 P
- 65. If the interest rate on a loan as 1% per month, the effective annual rate of interest is:
 - (a) 12%
 - (b) 12.36%
 - (c) 12.68%
 - (d) 12.84%

66. The simple interest on a certain sum of 1 money is $\frac{1}{25}$ times of principal, the rate of interest when rate

of interest and time are equal is

- (a) 2%
- (b) 3%
- (c) 4%
- (d) None



- 67. At what time a certain sum of money amounts to ₹400 at 10% p.a. S.1. and to ₹200 at 4% p.a. S.I.
 - (a) 10 Yrs.
 - (b) 30 Yrs.
 - (c) 50 Yrs.
 - (d) None
- 68. ₹ 6,400 amounts to ₹ 7840 in two years at simple interest. How much will a sum of ₹ 84 invested at the same rate of simple interest amount in four years?
 - (a) ₹11.20
 - (b) ₹112.20
 - (c) ₹120.80
 - (d) ₹121.80
- 69. A person gave a loan of ₹ 200 to Mr. X and recovered it at the rate of ₹ 35 for eight months, commencing from the end of first month. What is the effective rate of simple interest?
 - (a) 10%
 - (b) 20%
 - (c) 40%
 - (d) 60%
- 70. If the compound Interest on a certain sum of money for 2 years at 4% p.a. be ₹510, then its simple Interest (S.L) of same time at same rate of interest is
 - (a) ₹500
 - (b) ₹510
 - (c) ₹1000
 - (d) None
- 71. On what sum will the difference between the S.I. and C.I. for 3 years at 6% p.a. amount to ₹ 13.77?
 - (a) ₹1250
 - (b) ₹1150
 - (c) ₹1320
 - (d) None
- 72. Mr. X bought an electronic item for ₹1000. What would be the future value of the same item after two years, if the value is compounded semi-annually at the rate of 22% per annum?
 - (a) ₹1488.40
 - (b) ₹1518.07
 - (c) ₹2008.07
 - (d) ₹2200.00
- 73. The Partners A & B together lent ₹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 is sum of ₹3903/- would have been
 - (a) ₹875
 - (b) ₹2280
 - (c) ₹2028
 - (d) ₹2820





- 74. Mr. A borrows ₹ 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?
 - (a) ₹58239.84
 - (b) ₹4445.41
 - (c) ₹68729.84
 - (d) None of these
- 75. Invests ₹ 10,000 every year starting from today for next 10 years. Suppose interest rate is 8% per annum compounded annually calculate future value of the annuity Given that (1+0.08)¹⁰ = 2.15892500
 - (a) ₹156454.875
 - (b) ₹156484.875
 - (c) ₹144865.625
 - (d) None of these
- 76. The present value of an annuity which pays ₹200 at the end of each 3 months for 10 years, assuming money to be worth 5% converted quarterly
 - (a) ₹3473.86
 - (b) ₹3108.60
 - (c) ₹114180.44
 - (d) none of these
- 77. The value of the present value of a sequence of payments of ₹ 80 made at the end of each 6 months and continuity for ever, if money is worth 4% compounded semi-annually is....
 - (a) ₹4,000
 - (b) ₹5,000
 - (c) ₹ 3,000
 - (d) None of these
- 78. Mr. X Invests ₹ 10,000 every year starting from today for next 10 years suppose: interest rate is 8% per annum compounded annually. Calculate future value of the annuity: [Given that (1 + 0.08)¹⁰ = 2.15892500]
 - (a) ₹156454.88
 - (b) ₹144865.625
 - (c) ₹156554.88
 - (d) None of these
- 79. A company establishes a sinking fund to provide for the payment of ₹ 2,00,000 debt maturing in 20 years. Contributions to the fund are to be made at the end of every year. Find the amount of each annual deposit if interest is 5% per annum :
 - (a) ₹6,142
 - (b) ₹6,049
 - (c) ₹ 6,052
 - (d) ₹6,159
- 80. The time by which a sum of money is 8 times of itself if it double itself in 15 years.
 - (a) 42 years
 - (b) 43 years




- (c) 45 years
- (d) 46 years
- 81. What is the rate of simple interest if a sum of money amount ₹ 2,784 in 4 years and ₹ 2,688 in 3 years ?
 - (a) 1%p.a.
 - (b) 4%p.a.
 - (c) 5%p.a.
 - (d) 8%p.a.
- 82. In how many years, a sum will become double at 5% p.a. compound interest.
 - (a) 14.0 years
 - (b) 14.1 years
 - (c) 14.2 years
 - (d) 14.3 years
- 83. Mr. X bought an electronic item for ₹ 1000. What would be the future value of the same item after two years, if the value is compounded semi-annually at the rate of 22% per annum?
 - (a) ₹1488.40
 - (b) ₹1518.07
 - (c) ₹2008.07
 - (d) ₹2200.00
- 84. The difference between simple and compound interest on a sum of ₹ 10000 for 4 years at the rate of interest 10% per annum is
 - (a) 650
 - (b) 640
 - (c) 641
 - (d) 600
- 85. How much will ₹ 25,000 amount to in 2 years at compound interest if the rates for the successive years are 4% and 5% per year:
 - (a) ₹27,000
 - (b) ₹27,300
 - (c) ₹27,500
 - (d) ₹27,900
- 86. The value of furniture depreciates by 10% a year, if the present value of the furniture in an office is ₹ 21870, calculate the value of furniture 3 years ago:
 - (a) ₹30,000
 - (b) ₹40,000
 - (c) ₹35,000
 - (d) ₹50,000
- 87. The effective rate of interest does not depend upon
 - (a) Amount of Principal
 - (b) Amount of Interest



- (c) Number of Conversion Periods
- (d) None of these
- 88. If p. $i^2 = 96$, and R = 8% compounded annually then P =
 - (a) ₹14,000
 - (b) ₹15,000
 - (c) ₹16,000
 - (d) ₹17,000
- 89. If a bank pays 6% interest compounded quarterly what equal deposit have to be made at the end of the each quarter for 3 years if you want to have ₹ 1500 at the end of 3 years?
 - (a) ₹117.86
 - (b) ₹115.01
 - (c) ₹150.50
 - (d) None of these
- 90. Find the present value of an annuity which pays 200 at the end of each 3 months for 10 years assuming money to be worth 5% converted quarterly?
 - (a) ₹3473.86
 - (b) ₹3108.60
 - (c) ₹6265.38
 - (d) None of these
- 91. Mr. A borrows 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?
 - (a) ₹58239.84
 - (b) ₹58729.84
 - (c) ₹68729.84
 - (d) None of these
- 92. A company establishes a sinking fund to provide for the payment of ₹ 2,00,000 debt maturing in 20 years. Contributions to the fund are to be made at the end of every year. Find the amount of each annual deposit if interest is 5% per annum :
 - (a) ₹6,142
 - (b) ₹6,049
 - (c) ₹6,052
 - (d) ₹6,159
- 93. Suppose your mom decides to gift you ₹ 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 compounded annually. What is the present value of this money: [Given that P (15, 0.085) = 8.304236]
 - (a) 83,042
 - (b) 90,100
 - (c) 93,042
 - (d) 10,100



- 94. A sum of ₹ 46,875 was lent out at simple interest and at the end of 1 year 8 months the total amount was ₹ 50,000. Find the rate of interest percent per annum.
 - (a) 5%
 - (b) 6%
 - (c) 4%
 - (d) 8%
- 95. A = ₹ 5,200, R = 5% p.a., T = 6 years, P will be
 - (a) ₹2,000
 - (b) ₹3,880
 - (c) ₹ 3,000
 - (d) none of these
- 96. The time by which a sum of money would treble itself at 8% p. a C. I is
 - (a) 14.28 years
 - (b) 14 years
 - (c) 12 years
 - (d) none of these.
- 97. The present value of an annuity of ₹ 80 for 20 years at 5% p.a is [Given $(1.05)^{20} = 2.6533$]
 - (a) ₹997 (appx.)
 - (b) ₹900
 - (c) ₹1,000
 - (d) none of these



- 98. A person bought a house paying ₹ 20,000 cash down and ₹ 4,000 at the end of each year for 25 yrs. at 5% p.a. C.I. The cash down price is[Given (1.05)²⁵= 3.386355]
 - (a) ₹75,000
 - (b) ₹76,000
 - (c) ₹76,375.80
 - (d) none of these.
- 99. A man purchased a house valued at ₹ 3,00,000. He paid ₹ 2,00,000 at the time of purchase and agreed to pay the balance with interest at 12% per annum compounded half yearly in 20 equal half yearly instalments. If the first instalment is paid after six months from the date of purchase then the amount of each instalment is.
 - (a) ₹8,718.45
 - (b) ₹8,769.21
 - (c) ₹7,893.13
 - (d) none of these
- 100. A person desires to create a fund to be invested at 10% CI per annum to provide for a prize of ₹ 300 every year. Using V = a/I find V and V will be
 - (a) ₹2,000
 - (b) ₹2,500
 - (c) ₹ 3,000
 - (d) none of these.



- 101. A person invests ₹ 500 at the end of each year with a bank which pays interest at 10% p.a C.I. annually. The amount standing to his credit one year after he has made his yearly investment for the 12th time is.[Given (1.1)¹²= 3.1384]
 - (a) ₹11,761.36
 - (b) ₹10,000
 - (c) ₹12,000
 - (d) none of these
- 102. 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. For how many years the machine was put to use?
 - (a) 7 years
 - (b) 8 years
 - (c) 9 years
 - (d) 10 years
- 103. The compound interest on half-yearly rests on ₹ 10,000 the rate for the first and second years being 6% and for the third year 9% p.a. is
 - (a) ₹2,200
 - (b) ₹2,287
 - (c) ₹2,285
 - (d) ₹2290.84
- 104. The present value of ₹ 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on half-yearly basis is
 - (a) ₹9,070
 - (b) ₹9,069
 - (c) ₹ 9,060
 - (d) None
- 105. The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is
 - (a) 3.2% p.a
 - (b) 3.25% p.a
 - (c) 3.0225% p.a
 - (d) none of these
- 106. The sum required to earn a monthly interest of ₹ 1,200 at 18% per annum simple interest is:
 - (a) ₹50,000
 - (b) ₹60,000
 - (c) ₹80,000
 - (d) ₹66,000

107. The compound interest on ₹ 40,000 at 12% per annum compounded quarterly for 6 months is:

- (a) ₹2,643
- (b) ₹2,463
- (c) ₹2,364
- (d) ₹2,436





- 108. 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:
 - (a) 2%
 - (b) 4%
 - (c) 6%
 - (d) 8%
- 109. 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
 - (b) ₹80,000
 - (c) ₹1,00,000
 - (d) ₹75,087
- 110. 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 half yearly?
 - (a) 6.06%
 - (b) 6.07%
 - (c) 6.08%
 - (d) 6.09%
- 111. 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?
 - (a) ₹4,09,600
 - (b) ₹4,37,500
 - (c) ₹46,900
 - (d) ₹49,600
- 112. 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
 - (b) ₹1,20,000
 - (c) ₹1,24,000
 - (d) ₹1,92,000
- 113. 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

Calculate the Compounded Annual Growth Rate (CAGR) of EPS.

- (a) 24.47%
- (b) 23.47%
- (c) 22.47%
- (d) 21.47%



- 114. 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
 - (b) ₹2,066
 - (c) ₹2,044
 - (d) ₹2,155
- 115. What is the present value of ₹ 1,000 to be received after two years compounded annually at 10% interest rate?
 - (a) ₹800
 - (b) ₹826
 - (c) ₹836
 - (d) ₹835
- 116. 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
 - (b) ₹1,67,440.90
 - (c) ₹1,75,433.60
 - (d) ₹1,83,714.28
- 117. 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 5 it matures at par and the investor requires a rate of return of 14%?
 - (a) ₹904
 - (b) ₹907.125
 - (c) ₹905.25
 - (d) ₹909
- 118. 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
 - (b) ₹1,243
 - (c) ₹6,565
 - (d) ₹1,343
- 119. 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
 - (b) ₹13,000
 - (c) ₹14,250
 - (d) ₹16,667



- 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
- 121. How many total combinations can be formed of 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
- 122. A roadside tea stall merchant borrows ₹ 9,000 at 2.76% Simple Interest per annum. The principal and the interest are 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
 - (b) 4,608
 - (c) 9,207
 - (d) 4,096
- 123. A man invests ₹ 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) ₹8,000
 - (b) ₹20,000
 - (c) ₹14,000
 - (d) ₹16,000
- 124. The difference in simple interest of a sum invested of ₹ 1,500 for 3 years is ₹ 18. The difference in their rates is:
 - (a) 0.4
 - (b) 0.6
 - (c) 0.8
 - (d) 0.10
- 125. Find the effective rate of interest on ₹ 10,000 on which interest is payable half yearly at 5% p.a.
 - (a) 5.06%
 - (b) 4%
 - (c) 0.4%
 - (d) 3%
- 126. Find the effective rate of interest at 10% p.a. when interest is payable quarterly.
 - (a) 10.38%
 - (b) 5%
 - (c) 5.04%
 - (d) 4%



- 127. What will be the population after 3 years when present population is 25,000 and population increases at the rate of 3% in 1st year, at 4% in 2nd year and at 5% in 3rd year?
 - (a) 28,119
 - 29,118 (b)
 - 27,000 (c)
 - (d) 30,000
- 128. The value of scooter is ₹ 10,000. Find its value after 7 years if rate of depreciation is 10% p.a.
 - ₹4,782.96 (a)
 - (b) ₹4,278.69
 - ₹42,079 (c)
 - (d) ₹42,000
- 129. SI = 0.125 P at 10% p.a. Find Time.
 - (a) 1.25 years
 - (b) 25 years
 - (c) 0.25 years
 - (d) None of these
- 130. How much amount is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : $(1:1)^{10} = 2.59374$].
 - (a) ₹37,467
 - (b) ₹37,476
 - (c) ₹37,647
 - (d) ₹37,674
- 131. The difference between the CI and SI for 2 year is 21. If the rate of interest is 5%, the final principal is:
 - ₹8,200 (a)
 - (b) ₹4,800
 - ₹8,000 (c)
 - ₹8,400 (d)
- 132. Present value of a scooter is ₹ 7,290. If its value decreases every year by 10%, then its value before 3 years is equal to:
 - (a) 10,000
 - (b) 10,500
 - 20,000 (c)
 - (d) 20,500
- 133. Mr. X lent some amount of money at 4% S.I. and he obtained ₹ 520 less than he lent in 5 years. The sum lent is
 - (a) ₹620
 - (b) ₹650
 - ₹750 (c)
 - None of these (d)





- 134. ₹ 8,829 is invested into three different sectors in such a way that their amounts at 4% p.a. S.I. after 5 years; 6 and 8 years are equal. Find each part of the sum.
 - (a) ₹3,069, ₹2,970; ₹2,790
 - (b) ₹3,089, ₹2,970; ₹2,790
 - (c) ₹3,609, ₹2,970; ₹2,790
 - (d) $\exists 3,069, \exists 2,960; \exists 2,760$
- 135. A ₹1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8%
 - (a) ₹907.135
 - (b) ₹1033.54
 - (c) ₹945.67
 - (d) None of these
- 136. Mr. X invest ₹ 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.
 - (a) ₹1,56,454.88
 - (b) ₹1,56,554.88
 - (c) ₹1,44,865.625
 - (d) None of these





ANSWERS KEY

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



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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS

CHAPTER 5 – BASIC CONCEPTS OF PERMUTATIONS AND COMBINATIONS

- 1. The letters of the word VIOLENT are arranged so that the vowels occupy even place only. The number of permutations is:
 - (a) 144
 - (b) 120
 - (c) 24
 - (d) 72
- 2. A garden having 6 all trees in a row. In how many ways 5 children stand, one in a gap between the trees in order to pose for a photograph?
 - (a) 24
 - (b) 120
 - (c) 720
 - (d) 30

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- 3. 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
 - (b) 120
 - (c) 96
 - (d) None
- 4. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent ?
 - (a) 164
 - (b) 174
 - (c) 144
 - (d) 154
- 5. A Supreme Court Bench consists of 5 judges. In how many ways, the bench can give a majority division?
 - (a) 10
 - (b) 5
 - (c) 15
 - (d) 16
- 6. The number of traingles that can be formed by choosing the vertices from a set of 12 ponts, Seven of which lie on the same lie on the same straight line is:
 - (a) 185

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VIDHYA KA UDAY



- (c) 115
- (d) 105
- 7. Five bulbs of which three are defective are to be tired in two light-points in a dark-room. In how many trails the room shall be lightened ?
 - (a) 10
 - (b) 7
 - (c) 3
 - (d) none of these
- 8. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent
 - (a) 164
 - (b) 174
 - (c) 144
 - (d) 154
- 9. How many words can be formed with the letters of the word 'ORIENTAL'. So that A and E always oocupy odd places:

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- (a) 540
- (b) 8460
- (c) 8640
- (d) 8450
- 10. The number of ways of painting the faces of a cube by 6 different colours is
 - (a) 30
 - (b) 36
 - (c) 24
 - (d) 1
- 11. A room has 10 doors. In how many ways can a man enter the room by one door and come out by a different door.
 - (a) 90
 - (b) 100
 - (c) 50
 - (d) None of these
- 12. In an election, there are five candidates contesting for three vacancies; an elector can vote any number of candidates not exceeding the number of vacancies. In how many ways can one cast his votes?
 - (a) 12
 - (b) 14
 - (c) 25
 - (d) None of these
- 13. The number of ways that 12 prizes can be divided among 4 students so that each may have 3 prizes is:
 - (a) 15,400



- (b) 15,000
- (c) 14,400
- (d) 369600
- 14. Five balls of different colours are to be placed in three boxes of different sizes. Each box can hold all the five balls. In how many different ways can we place the balls so that no box remains empty?
 - (a) 100
 - (b) 120
 - (c) 150
 - (d) None of these
- 15. A box contains 7 red, 6 white and 4 blue balls. How many selections of three balls can be made so that none is red?
 - (a) 90
 - (b) 120
 - (c) 48
 - (d) None of these

16. In how many ways 3 prizes out of 5 can be distributed amongst 3 brothers equally

- (a) 10
- (b) 45
- (c) 60
- (d) 120

- 17. There 12 questions to be answered to be Yes or No. How Many ways this can be answered
 - (a) 1021
 - (b) 2048
 - (c) 4096
 - (d) None of the above
- 18. $15C_{3r} = 15 C_{r+3}$, then r is equal to
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
- 19. A polygon has 44 diagonals then the number of sides are
 - (a) 6
 - (b) 7
 - (c) 8
 - (d) 11

20. The number of ways of painting the six faces of a cube with six different given colours is

- (a) 1
- (b) 720
- (c) 30
- (d) 15



- How many Six-digit telephone numbers can be formed by using 10 distinct digits 21.
 - 108 (a)
 - 610 (b)
 - 10C₉ (c)
 - $10P_6$ (d)
- 22. $nC_1+nC_2+nC_3+....=$
 - 2n-1 (a)
 - 2ⁿ (b)
 - (c) $2^{n}+1$
 - (d) none of these
- A user wants to create a password using 4 lowercase letters (a-z) and 3 uppercase letters (A-Z). No letter 23. can be repented in any form. In how many ways can the password be created if the password must start with an uppercase letter?
 - (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) $6 \times 26 \times 25 \times 24 \times 23 \times 22 \times 21$
- In how many ways can 5 boys and 3 girls sit in a row so that no two girls are together 24.
 - 14,400 (a)
 - (b) 14,000
 - (C) 14,425
 - (d) 12,400
- 25. 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!
- 26. How many ways can 5 different trophies can be arranged on a shelf if one particular trophy must always be in the middle?
 - (a) 24
 - (b) 120
 - 48 (c)
 - 144 (d)
- 27. A candidate is required to answer 6 out of 10 questions, which are divided into two groups each containing 5 questions and he is not permitted to attempt more than 4 from each group. In how many ways can he make up his choice?
 - (a) 315
 - (b) 250
 - (c) 450
 - (d) 150





- 28. If $\frac{1}{9!} + \frac{1}{10!} = \frac{x}{11!}$ The value of x is
 - (a) 211
 - (b) 122
 - (c) 1331
 - (d) none of these
- 29. The value of $n-1p_r + r \cdot n^{-1} p_{r-1}$ is
 - (a) ⁿP_r

(b)
$$\frac{n!}{(n-r)!}$$

- (c) both
- (d) None of these
- 30. If ${}^{n}C_{7} = {}^{n}C_{5}$, the value of 'n.' is
 - (a) 10
 - (b) 14
 - (c) 12
 - (d) none of these
- 31. If ${}^{2n}C_3:{}^{n}C_3 = 11:1$, the value of 'n.'is
 - (a) 6
 - (b) 7
 - (c) 5
 - (d) none of these
- 32. The number of triangles that can be formed by choosing the vertices from a set of 12 points, seven of which lie on the same straight line, is:
 - (a) 185
 - (b) 175
 - (c) 115
 - (d) 105
- 33. A boy has 3 library tickets and 8 books of his interest in the library. Of these 8, he does not want to borrow Mathematics part-II unless Mathematics part 1 is also borrowed? In how many ways can he choose the three books to be borrowed?
 - (a) 41
 - (b) 51
 - (c) 61
 - (d) 71
- 34. An examination paper consists of 12 questions divided into two parts A and B. Part A contains 7 questions and part B contains 5 questions. A candidate is required to attempt 8 questions selecting at least 3 from each part. In how many maximum ways can the candidate select the questions ?
 - (a) 35
 - (b) 175





- (c) 210
- (d) 420
- 35. In how many ways can the letters of the word FAILURE be arranged so that the consonants may occupy only odd positions?
 - (a) 576
 - (b) 476
 - (c) 376
 - (d) 276
- 36. In how many ways can a party of 4 men and 4 women be seated at a circular table, so that no two women are adjacent ?
 - (a) 164
 - (b) 174
 - (c) 144
 - (d) 154
- 37. The number of ways the letters of the word 'COMPUTER' can be rearranged is
 - (a) 40,320
 - (b) 40,319
 - (c) 40,318
 - (d) none of these
- 38. 5 persons are sitting in a round table in such way that Tallest Person is always on the right-side of the shortest person; the number of such arrangements is called up as
 - (a) 6
 - (b) 8
 - (c) 24
 - (d) none of these
- 39. An examination paper with 10 questions consists of 6 questions in Algebra and 4questions in Geometry. At least one question from each section is to be attempted. In how many ways can this be done?
 - (a) 945
 - (b) 100
 - (c) 1000
 - (d) none of these
- 40. If 12 school teams are participating in a quiz contest, then the number of ways the first, second and third positions may be won is
 - (a) 1,230
 - (b) 1,320
 - (c) 3,210
 - (d) none of these
- 41. 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
- 42. 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
- 43. Three girls and five boys are to be seated in a row so that no two girls sit together. Total No. of arrangements are:
 - (a) 14,400
 - (b) 120
 - (c) 5P3
 - (d) $3! \times 5!$
- 44. How many numbers can be formed with the help of 2, 3, 4, 5, 6, 1 which is not divisible by 5, given that it is a five digit number and digits are not repeating?
 - (a) 1200
 - (b) 400
 - (c) 600
 - (d) 1400
- 45. How many different groups of 3 people can be formed from a group of 5 people?
 - (a) 5
 - (b) 6
 - (c) 10
 - (d) 9
- 46. In how many ways can 4 people be selected at random from 6 boys and 4 girls if there are exactly two girls?
 - (a) 90
 - (b) 360
 - (c) 92
 - (d) 480

47. ${}^{n}P_{3}: {}^{n}P_{2} = 2:1$

- (a) 4
- (b) 7/2
- (c) 5
- (d) 2/7



ANSWERS KEY

1	а	2	b	3	С	4	С	5	d
6	а	7	b	8	С	9	С	10	а
11	а	12	С	13	d	14	С	15	b
16	С	17	С	18	b	19	d	20	С
21	d	22	а	23	а	24	а	25	С
26	а	27	d	28	С	29	b	30	С
31	С	32	а	33	а	34	d	35	а
36	С	37	b	38	а	39	а	40	b
41	b	42	d	43	а	44	С	45	С
46	а	47	а						





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS

CHAPTER 6 – SEQUENCE AND SERIES – ARITHMETIC AND GEOMETRIC PROGRESSIONS

- 1. 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
 - (b) p + q r
 - (c) p q r
 - (d) p+q
- 2. Find the numbers whose GM is 5 and AM is 7.5:
 - (a) 12 and 13
 - (b) 13.09 and 1.91
 - (c) 14 and 11
 - (d) 17 and 19
- 3. If the sum of n terms of an A.P be $2n^2 + 5$ n, then its 'n' term is:
 - (a) 4n 2
 - (b) 3n 4
 - (c) 4n + 3
 - (d) 3n + 4
- 4. The first, second and seventh term of an AP. are in G.P. and the common difference is 2, the 2nd term of A.P. is :
 - (a) 5/2
 - (b) 2
 - (c) 3/2
 - (d) ½
- 5. Find the sum of all natural numbers between 250 and 1,000 which are exactly divisible by 3 :
 - (a) 1,56,375
 - (b) 1,56,357
 - (c) 1,65,375
 - (d) 1,65,357

6. The sum of an AP, whose first is -4 and last term is 146 is 7171. Find the value of n

- (a) 99
- (b) 100
- (c) 101
- (d) 102



- 7. In a geometric progression, the second term is 12 and sixth term is 192. Find 11th term.
 - (a) 3,072
 - (b) 1,536
 - (c) 12,288
 - (d) 6,144
- 8. The first and last terms of an arithmetic progression are 5 and 905. Sum of the terms is 45,955. The number of terms is
 - (a) 99
 - (b) 100
 - (c) 101
 - (d) 102
- 9. The sum of first eight terms of geometric progression is five times the sum of the first four terms. The common ratio is

- (a) √3
- (b) √2
- (c) 4
- (d) 2

10. If the sum of n terms of an AP is $(3n^2-n)$ and its common difference is 6, then its term is

- (a) 3
- (b) 2
- (c) 4
- (d) 1
- 11. Find the sum of the series. $243 + 324 + 432 + \dots$ to n terms
 - (a) $3^{6}\left(\frac{4^{n}}{3^{n}}-1\right)$
 - (b) $3^4 \left(\frac{4^n}{3^n} 1\right)$
 - $(c) \qquad 3^6 \left(\frac{3^n}{4^n} 1\right)$
 - (d) None of these
- 12. The sum of the first eight terms of a G.P. is five times the sum of the first four terms; then the common ratio is
 - (a) $\sqrt{2}$
 - (b) −√2
 - (c) ± 2
 - (d) None of these
- 13. The sum of the following series $4 + 44 + 444 + \dots$ to n term is:
 - (a) $\frac{4}{9}\left[\frac{10(10^{n}-1)}{9}-n\right]$

Page| 54



- (b) $\frac{4}{9}\left[\frac{10(10^{n}-1)}{9}+n\right]$
- (c) $\frac{10(10^n-1)}{9}+n$
- (d) None of these
- 14. The Arithmetic Mean between two numbers is 15 and their G.M. is 9; then the numbers are
 - (a) 27,3
 - (b) 9,9
 - (c) 16,9
 - (d) None of these
- 15. if (x+1), 3x (4x+2) are in A.P. Find the value of x
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
- 16. Divide 144 into three parts which are in AP and such that the largest is twice the smallest, the smallest of three numbers will be:
 - (a) 48
 - (b) 36
 - (c) 13
 - (d) 32
- 17. If 8th term of an AP is 15, the Sum of the 15 its term is
 - (a) 15
 - (b) 0
 - (c) 225
 - (d) 225/2

18. For what values of x, the number $-\frac{2}{7}$, x, $-\frac{7}{2}$ are in G.P.?

- (a) <u>+</u>1
- (b) <u>+</u>3
- (c) <u>+</u>2
- (d) none of these
- 19. For what value of x; the sequence x+1, 3x, 4x+2 are in AP?
 - (a) 3
 - (b) 2
 - (c) 4
 - (d) 5
- 20. If $a^{1/x} = b^{1/y} = c^{1/z}$ and a,b,c are in GP then x, y, z are in
 - (a) AP





- GP (b)
- (c) HP
- (d) AGP
- 21. The 3^{rd} term of a G.P is 2/3 and 6^{th} term is 2/81, then the first term is
 - (a) 6
 - (b) 1/3
 - (c) 9
 - (d) 2
- 22. If the sum of n terms of an A.P. is $(3n^2 - n)$ and its common difference is 6, then its first term is:
 - 3 (a)
 - (b) 2
 - (c) 4
 - (d) 1

23. The nth term of the series whose sum to n terms is $3n^2 + 2n$ is:

- 3n 1 (a)
- (b) 8n 2
- (c) 11 n 3
- (d) 6n-1

24.

The sum of the series: $0.5 + 0.55 + 0.555 + \dots$ to n terms is: (a) $\frac{5n}{9} + \frac{5}{9} [1 - (0.1)^n]$ (b) $\frac{5n}{9} - \frac{5}{81} [1 - (0.1)^n]$ (c) $\frac{5n}{9} + \frac{5}{81} [1 - (01)^n]$ (d) $\frac{5n}{9} + \frac{5}{81} [1 + (0.1)^n]$

(x + 1), 3x, (4x + 2) are in A.P. Find the value of x. 25.

- (a) 2
- 3 (b)
- (c) 4
- (d) 5
- 26. The 4th term of an A.P. is three times the first and the 7th term exceeds twice the third term by 1. Find the first term 'a' and common difference 'd'.
 - (a) a = 3, d = 2
 - (b) a = 4, d = 3
 - (c) a = 5, d = 4
 - (d) a = 6, d = 5



- 27. Three numbers are in AP and their sum is 21. If 1, 5, 15 are added to them respectively, they form a G. P. The numbers are:
 - (a) 5, 7, 9
 - (b) 9, 5, 7
 - (c) 7, 5, 9
 - (d) none of these.
- 28. The sum of three numbers in G.P. is 70. If the two extremes by multiplied each by 4 and the mean by 5, the products are in AP. The numbers are
 - (a) 12, 18, 40
 - (b) 10, 20, 40
 - (c) 40, 20, 15
 - (d) none of these
- 29. The first and the last term of an AP are -4 and 146. The sum of the terms is 7171. The number of terms is
 - (a) 101
 - (b) 100
 - (c) 99
 - (d) none of these
- 30. If for an infinite geometric progression, first term is 'a', common ratio is 'r', the suni is 8 and the second term is 7/8 then:
 - (a) $a = 3 \& r = \frac{7}{24}$ (b) $a = 4 \& r = \frac{7}{16}$ (c) $a = 7 \& r = \frac{1}{8}$ (d) $a = 2 \& r = \frac{7}{32}$
- 31. 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
 - (b) 4, 16
 - (c) 4, 8
 - (d) 8,4
- 32. If fourth term of A.P. series is zero, then what is the ratio of twenty-fifth term to eleventh term ?
 - (a) 5
 - (b) 4
 - (c) 3
 - (d) 2
- 33. Sum lying from 100 to 300 which is divisible by 4 and 5 is
 - (a) 2000



- (b) 2100
- (c) 2200
- (d) 2300
- 34. Sum of x terms of two AP's are in the ratio (3x + 5) : (5x + 3) then ratio of their 10th term is
 - (a) 31:49
 - (b) 30:49
 - (c) 28:49
 - (d) None of these
- 35. If 5th term of G.P. is 32 and 3^{rd} term of G.P. is 8 then 6^{th} term of G.P. is
 - (a) 4
 - (b) 16
 - (c) 32
 - (d) 6
- 36. Which term of The sequence 2, 4, 8, 16 is 2048?
 - (a) 9
 - (b) 10
 - (c) 11
 - (d) None of these





ANSWERS KEY

1	b	2	b	3	С	4	а	5	а
6	С	7	d	8	С	9	b	10	b
11	а	12	С	13	а	14	а	15	b
16	d	17	С	18	а	19	а	20	а
21	а	22	b	23	d	24	b	25	b
26	а	27	а	28	b	29	а	30	С
31	а	32	С	33	С	34	а	35	d
36	С								





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VIDHYA KA UD

CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 7 – SETS, RELATIONS AND FUNCTIONS

- 1. On the set of lines, being perpendicular is a satisfies which property :
 - (a) Reflexive
 - (b) Symmetric
 - (c) Transitive
 - (d) None of these
- 2. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then $(A C) \times B$ is:
 - (a) $\{(2,2)(2,4)(4,2)(4,4)(5,2)(5,4)\}$
 - (b) $\{(1,2)(1,4)(3,2)(3,4)(5,2)(5,4)\}$
 - (c) $\{(2, 2) (4, 2) (4, 4) (4, 5)\}$
 - (d) $\{(2, 2) (2, 4) (4, 2) (4, 4)\}$
- 3. Out of total 150 students, 45 passed in Accounts, 30 in Economics and 50 in Maths, 30 in both Accounts and Maths, 32 in both Maths and Economics, 35 in both Accounts and Economics, 25 students passed in all the three subjects. Find the numbers who passed atleast in anyone of the subjects:
 - (a) 63
 - (b) 53
 - (c) 73
 - (d) None.
- 4. Let R is the set of real numbers, such that the function f: $R \rightarrow R$ and g : $R \rightarrow R$ are defined by $f(x) = x^2 + 3x + 1$ and g(x) = 2x 3. Find (fog) :
 - (a) $4x^2 + 6x + 1$
 - (b) $x^2 + 6x + 1$
 - (c) $4x^2 6x + 1$
 - (d) $x^2 6x + 1$
- 5. Two finite sets have m and n elements .The total number of sub sets of first set is 56 more than the total number of subsets of the second set. The value of m and n are
 - (a) 6,3
 - (b) 7,6
 - (c) 5,1
 - (d) 8,7
- 6. If $f(p) = \frac{1}{1-p}$, then f^{-1} is
 - (a) 1 p

Page| 60



(b) $\frac{p-1}{p}$

(c)
$$\frac{p}{p-1}$$

(d)
$$\frac{1}{p}$$

7. Determine f(x), given that $f'(x) = 12x^2-4x$ and f(-3) = 17

- (a) $f(x) = 4x^3 2x^2 + 143$
- (b) $f(x) = 6x^3 x^4 + 137$
- (c) $f(x) = 3x^4 x^3 137$
- (d) $f(x) = 4x^3 2x^2 143$
- 8. Let R is the set of real numbers such that the function $f: R \rightarrow R$ and $g: R \rightarrow R$ are defined by by $f(x) = x^2+3x+1$ and g(x) = 2x-3. Find (fog):
 - (a) $4x^2+6x+1$
 - (b) x^2+6x+1
 - (c) $4x^2-6x+1$
 - (d) $x^2 6x + 1$.
- 9. 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 newspaper, then the number of families which buy A only is:
 - (a) 6600
 - (b) 6300
 - (c) 5600
 - (d) 600.

10. Given the function f(x) = (2x + 3), then the value of f(2x)-2f(x) + 3 will be:

- (a) 3
- (b) 2
- (c) 1
- (d) 0

11. Find f o g for the functions $f(x) = x^8$, $g(x) = 2x^2+1$

- (a) $x^8(2x^2+1)$
- (b) x⁸
- (c) $2x^2+1$
- (d) $(2x^2+1)^8$
- 12. The number of proper subsets of the set {3, 4, 5, 6, 7} is
 - (a) 32
 - (b) 31
 - (c) 30
 - (d) 25



- 13. On the sets of lines in a plane the Relation "is perpendicular to" is
 - (a) Reflexive
 - (b) Symmetric
 - (c) Transitive
 - (d) none of these
- 14. In a survey of 300 companies, the number of companies using different media- Newspapers (N), Radio (R) and Television (T) are as follows:

 $n(N) = 200, n(R) = 100, n(T) = 40, n(N \cap R) = 50, n(R \cap T) = 20, n(N \cap R) = 25, and n(N \cap R \cap T) = 5,$

Find the numbers of companies using none of these media:

- (a) 20 companies
- (b) 250 companies
- (c) 30 companies
- (d) 50 companies
- 15. If f(x) = x+2, $g(x) = 7^x$, then g of (x) =
 - (a) 7x.x+2.7x
 - (b) 7x+2
 - (c) 49(7x)
 - (d) None of these

16. The relation $R = \{(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)\}$ on the set $A = \{1,2,3\}$ is:

- (a) reflexive but not symmetric VIDHYA KA UDAY
- (b) reflexive but not transitive
- (c) symmetric and transitive
- (d) neither symmetric nor transitive
- 17. If $X = \{a, b, c, d\}$; the elements of power set P (X) are
 - (a) Φ , {a}, {b}, ({c}, {d}, {a, b}, {a, c}, {a, d}, {b, c}, {b, d>, {c, d}}
 - (b) $\{a, b, c\}, \{a, b, d\}, \{a, c, d\}, \{b, c, d\}$
 - (c) {a, b, c, d}
 - (d) None of the above

18. $X = \{x, y, w, z\}; Y = \{1, 2, 3, 4\}; H = \{(x, 1); (y, 2); (y, 3); (z, 4); (x, 4)\}$

- (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 these
- 19. 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 atleast in one subject. How many student's passed in English only but not in Maths.
 - (a) 15
 - (b) 20
 - (c) 10
 - (d) 25



- 20. If A = (1, 2, 3, 4, 5), B = (2, 4) and C = (1, 3, 5) then $(A C) \times B$ is:
 - (a) $\{(2, 2)(2, 4)(4, 2)(4, 4)(5, 2)(5, 4)\}$
 - (b) $\{(1, 2) (1, 4) (3, 2) (3, 4) (5, 2) (5, 4)\}$
 - (c) $\{(2, 2) (4, 2) (4, 4) (4, 5)\}$
 - (d) $\{(2, 2) (2, 4) (4, 2) (4, 4)\}$
- 21. If $A = \{1,2,3\}$ then relation $R = \{(1-1), (2,3), (2,2), (3,3), (1,2)\}$ on A is:
 - (a) Reflexive
 - (b) Symmetric
 - (c) Transitive
 - (d) Equivalence
- 22. Out of 1000 persons, 25 per cent were industrial workers and the rest were agricultural workers. 300 persons enjoyed world cup matches on T.V. 30 per cent of the people who had not watched world cup matches were industrial workers. What is the number of agricultural workers who had enjoyed world cup matches on TV?
 - (a) 230
 - (b) 250
 - (c) 240
 - (d) 260
- 23. (AUB)' is equal to
 - (a) (A' UB)'
 - (b) $A' \cap B'$
 - (c) A'U B'
 - (d) none of these

24. If
$$f(x) = \frac{x}{1-x}$$
 and $g(x) = \frac{x-1}{x}$, then gof (x) is

- (a) x-1
- (b) x
- (c) 1/x
- (d) none of these
- 25. A town has a total population of 50,000. Out of it 28,000 read the newspaper X and 23,000 read Y while 4,000 read both the papers. The number of persons not reading X and Y both is
 - (a) 2,000
 - (b) 3,000
 - (c) 2,500
 - (d) none of these

26. 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

- (a) Reflexive but not transitive
- (b) Reflexive but not symmetric
- (c) Symmetric and Transitive
- (d) Neither symmetric nor transitive



- 27. If $f(x) = x^2 + x 1$ and 4f(x) = f(2x) then find the value of 'x'.
 - (a) 3/2
 - (b) 2/3
 - (c) 3/4
 - (d) 4/3
- 28. If a set contain n elements, then the total number of proper subsets of set is:
 - (a) 2ⁿ
 - (b) 2ⁿ 1
 - (c) 2ⁿ⁻¹
 - (d) 2ⁿ 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:
 - (a) 2,000
 - (b) 3,000
 - (c) 2,500
 - (d) 5,000
- 30. Out of total 150 students, 45 passed in Accounts, 30 in Economics and 50 in Maths, 30 in both Accounts and Maths, 32 in both Maths and Economics, 35 in both Accounts and Economics, 25 students passed in all the three subjects. Find the numbers who passed at least in any one of the subjects :
 - (a) 63
 - (b) 53
 - (c) 73
 - (d) None of these

31. Let $A = \{1,2,3\}$, then the relation $R = \{(1,1), (2,3), (2,2), (3,3), (1,2)\}$ is:

- (a) Symmetric
- (b) Transitive
- (c) Reflexive
- (d) Equivalence
- 32. Let A be the set of squares of natural numbers and let xEA, yEA then
 - (a) $X + Y \in A$
 - (b) $X Y \in A$
 - (c) $\frac{x}{y} \in A$
 - (d) $xy \in A$
- 33. The number of proper sub set of the set {3, 4, 5, 6, 7} is
 - (a) 32
 - (b) 31
 - (c) 30
 - (d) 25

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1	b	2	d	3	b	4	С	5	а
6	b	7	а	8	С	9	а	10	d
11	d	12	b	13	b	14	d	15	С
16	а	17	d	18	d	19	а	20	d
21	а	22	d	23	b	24	b	25	b
26	b	27	а	28	b	29	b	30	b
31	С	32	d	33	b				



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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS

CHAPTER 8 - BASIC APPLICATION OF DIFFERENTIAL AND INTEGRAL CALCULUS

- 1. $\int 2^{3x} \cdot 3^{2x} \cdot 5^{2x} dx$
 - (a) $\frac{2^{3x}.3^{2x}.5^x}{\log(720)} + c$
 - (b) $\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)}$ +c
 - (c) $\frac{2^{3x}.3^{2x}.5^{2x}}{\log(1800)}$ +c

(d)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(90)}$$
 + c

- 2. $\int_{1}^{4} (2x+5) dx$ and the value is
 - (a) 10
 - (b) 3
 - (c) 30
 - (d) none
- 3. The equation of the tangent to the curve, $x^3 2x + 3$, at the point (2, 7) is:
 - (a) y = 2x 13
 - (b) y = 10x
 - (c) y = 10x 13
 - (d) y = 10
- 4. If x = c.t, y = c/t, then dy/dx is equal to :
 - (a) 1/t
 - (b) t.e^t
 - (c) $-1/t^2$
 - (d) None of these

5. $\int_{0}^{1} x \cdot e^{x} dx$

- (a) -1
- (b) 1
- (c) e¹
- (d) 1/e







6. Find the gradient of curve $y = 3x^2-5x+4$ at the point (1, 2)

- (a) 1
- (b) 3
- (c) 4
- (d) 5

7. Evaluate:
$$\int_{0}^{5} \frac{x^{2}}{x^{2} + (5-x)^{2}} dx$$

- (a) 0
- (b) 1
- (c) -1
- d) none of these
- 8. If f'(x) = $3x^2 + 2 \& f(0) = 0$ then find f(2).
 - (a) 8
 - (b) 10
 - (c) 12
 - (d) none of these
- 9. The derivative of $e^x \log x$

(a)
$$\frac{e^x}{x}(1+x\log x)$$

- (b) $\frac{c}{x}(1+\log x)$
- (c) $(1 + \log x)$
- (d) None of these

10. If
$$y = \sqrt{\frac{1-x}{1+x}}$$
 then (1-x²) $\frac{dy}{dx} =$

- (a) y
- (b) -x
- (c) -y
- (d) 0

11. Find the gradient of the curve $y = 3x^2-6x+4$ at the point (1, 2)

- (a) 1
- (b) -1
- (c) 0
- (d) 2
- 12. The equation of the curve in the form y = f(x) if the curve passese through the point (1, 0) and Find f'(x) = 2x-1 is
 - (a) $y = x^2 x$
 - (b) $x = y^2 y$
 - (c) $y = x^2$
 - (d) none of these



EXERCISE
13.
$$\int \frac{1}{x \log x} dx = ?$$
(a) $\log |\log x| + c$
(b) $\log |\log x| + c$
(c) $(\log x) 2 + c$
(d) none of these
14.
$$\int_{1}^{2} \frac{2x}{1+x^{2}} dx \text{ is equal to}$$
(a) $\log_{e}(5/2)$
(b) $\log_{e}5 - \log_{e}2 + k$
(c) $\log_{e}(2/5)$
(d) none of these
15. If $f(x) = (x + 1)^{x+1}$ then find $f'(0)$
(a) 0
(b) 1
(c) -1
(d) 2
16. if $f(x) = x(x^{2}-2)$ then $\frac{dy}{dx}$
(a) $3x^{2}-2$
(b) $3x^{2}+2$
(c) $x^{2}-3$
(d) x^{2}

- 17. The equation of the curve which passes through the point (1,2) and has the slope 3x-4 and the point of (x, y) is
 - (a) $2y = 3x^2 8x + 9$
 - (b) $y = 6x^2 8x + 9$
 - (c) $y=x^2-8x+9$
 - (d) $2y=3x^2-8x+c$
- 18. The slope of the tangent to the curve $y=x^2-x$ at the point where the line y=2 cuts the curve in the first quadrant is
 - (a) 2
 - (b) 3
 - (c) -3
 - (d) none of these

19.
$$\int 2^{3x} \cdot 3^{2x} \cdot 5^x \, dx =$$

(a)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(720)}$$
 + c

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(b)
$$\frac{2^{3x} \cdot 3^{2x} \cdot 5^x}{\log(360)} + c$$

(c)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(180)} + c$$

(d)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(90)} + c$$

20. Given x = 2t + 5; y = t2-2, then $\frac{dy}{dx}$ is calculate as :

- (a) t
- (b) 1/t
- (c) -1/t
- (d) None

21. If f'(x) = x - 1, the equation of the curve y = f(x) passing through the point (1,0) is given by

- (a) $y=x^2 2x + 1$
- (b) $y = x^2/2 x + 1/2$
- (c) $y = x^2/2 x + 1$
- (d) none of these
- 22. $\int x^2 e^{3x} dx$ is

(a)
$$x^2 \cdot e^{3x} - 2xe^{3x} + 2e^{3x} + C$$

(b)
$$\frac{e^{3x}}{3} - \frac{x \cdot e^{3x}}{9} + 2e^{3x} + C$$

(c)
$$\frac{x^2 \cdot e^{3x}}{3} - \frac{2x \cdot e^{3x}}{9} + \frac{2}{27}e^{3x} + C$$

(d) None of these

23.
$$\int_{1}^{2} \frac{2x}{1+x^{2}} dx:$$

(a)
$$\log_e \frac{5}{2}$$

(b) $\log_{e} 5 - \log_{e} 2 + 1$

(c)
$$\log_e \frac{2}{5}$$

- (d) None of these
- 24. The cost function for the production of x units of a commodity is given by $C(x) = 2x^3 15x^2 + 36x + 15$, The cost will we minimum when 'x' equal to:
 - (a) 3
 - (b) 2
 - (c) 1
 - (d) 4

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- 25. xe^xdx is:
 - (a) (x-1)e^x+C
 - (b) $x.e^{x}+C$
 - (c) $\log x + x \cdot e^x + C$
 - (d) None of these

26.
$$\int e^{ax} dx$$

(a) $e^x + c$

(b)
$$\frac{e^{ax}}{a} + c$$

- (c) $\log x + c$
- (d) $e^{ax} + c$
- 27. The gradient of the curve $y = 2x^3-5x^2-3x$ at x = 0 is
 - (a) 3
 - (b) -3
 - (c) 1/3
 - (d) none of these

28. Evaluate $\int_{1}^{4} (2x + 5) dx$ and the value is

- (a) 3
- (b) 10
- (c) 30
- (d) None of these.

29. If $f(x) = x^2 - 6x + 8$ then f'(5) - f'(8) is equal to

- (a) f'(2)
- (b) 3. f'(2)
- (c) 2. f'(2)
- (d) none of these.

30. if $x^y x y^x = 16$, then the value of $\frac{dy}{dx}$ at (2, 2) is :

- (a) -1
- (b) 0
- (c) 2
- (d) -2

31. If $x = t^2$ and $y = t^3$ then $\frac{d^2y}{dx^2}$ is equal to : (a) $\frac{3t}{2}$

(b) $\frac{3}{4t}$


(c)
$$\frac{3}{2t}$$

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

32. $\int \log x \, dx$ is equal to:

- (a) $x \log (ex) + c$
- (b) $x \log \left(\frac{x}{e}\right) + c$ (c) $x \log \left(\frac{e}{x}\right) + c$

(d)
$$\log\left(\frac{x}{e}\right) + c$$

33. Evaluate the following integral of
$$\int \left(\left(\frac{1}{x(x^5+1)} \right) dx \right)$$
.

(a)
$$\log\left(\frac{x^5}{x^{5+1}}\right) + c$$

(b)
$$\frac{1}{5}\log\left(\frac{x^5}{x^5+1}\right)+c$$

(c)
$$\log \frac{1}{3} \log \left(\frac{x^5}{x^5 + 1} \right) + c$$

(d) $\log \frac{1}{3} \log \left(\frac{x^5 + 1}{x^5} \right) + c$

34. $\int_{0}^{1} (e^{x} + e^{-x}) dx$ is

- (a) e e-1
- (b) e-1 e
- (c) e + e-1
- (d) None of these

35. If $f(x) = x^k$ and f'(1) = 10, then the value of k is :

- (a) 10
- (b) -10
- (c) 1/10
- (d) None of these

36. If
$$y = ae^{nx} + be^{-nx}$$
, then $\frac{d^2y}{dx^2}$ is equal to _____.

- (a) n²y
- (b) -n²y
- (c) ny
- (d) None of these



37. $\int 2^{3x} \cdot 3^{2x} \cdot 5^{x} \cdot dx =$ _____.

(a)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(720)} + c$$

(b)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)} + c$$

(c)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)}$$
+c

(d)
$$\frac{2^{3x}.3^{2x}.5^{x}}{\log(360)}$$
+c





1	С	2	С	3	С	4	С	5	b
6	а	7	b	8	b	9	а	10	С
11	С	12	а	13	b	14	b	15	b
16	а	17	а	18	b	19	b	20	а
21	С	22	С	23	а	24	а	25	а
26	b	27	b	28	С	29	b	30	а
31	b	32	b	33	b	34	а	35	а
36	а	37	b						



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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS

CHAPTER 9 - NUMBER SERIES, CODING AND DECODING AND ODD MAN OUT

1. Find out the next number in the following series 7,11, 13, 17, 19, 23, 25, 29,?

AY 2025

(a) 30

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- (b) 31
- (c) 32
- (d) 33
- 2. If MACHINE is coded as 19 7 9 14 15 20 11, how will you code DANGER?
 - (a) 11-7-20-16-11-24
 - (b) 13-7-20-9-11-25
 - (c) 10-7-20-13-11-24
 - (d) 13-7-20-10-11-25
- 3. If HEALTH is written as GSKZDG, then how will NORTH be written in that code?
 - (a) OPSUI
 - (b) GSQNM
 - (c) FRPML
 - (d) IUSPO
- 4. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?
 - (a) EJKNEGTP
 - (b) EGKNEITP
 - (c) EJKNFGTO
 - (d) EJKNFTGP
- 5. Find odd man out of the following:
 - (a) 15
 - (b) 25
 - (c) 37
 - (d) 49
- 6. Find the missing term in each of the following series : 6, 13, 25, 51, 101?
 - (a) 201
 - (b) 202
 - (c) 203
 - (d) 205







- 7. Find the missing term in each of the following series : 28, 33, 31, 36, 34, 39, ?
 - (a) 48
 - (b) 37
 - (c) 54
 - (d) 62
- 8. In a certain code, TEACHER is written as VGCEJGT, How is CHILDREN written in that code?
 - (a) EJKNEGTP
 - (b) EGKNEITP
 - (c) EJKNFGTO
 - (d) EJKNFTGP
- 9. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?
 - (a) 2
 - (b) 4
 - (c) 5
 - (d) 6
- 10. If SUMMER is coded as RUNNER, the code for WINTER will be
 - (a) SUITER
 - (b) VIOUER
 - (c) WALKER
 - (d) SUFFER
- 11. If 'GOAL' is coded as 'HPBM' and 'FROCK' is coded as 'GSPTL' then how will 'LOFAR' be coded?
 - (a) MPGZO
 - (b) MNEBS
 - (c) MPGBS
 - (d) MPEBR
- 12. If 'INSURE' is coded as 951395, then how will 'PATRIOT' be coded?
 - (a) 7129962
 - (b) 7129962
 - (c) 7129962
 - (d) 7129962
- 13. If in a certain code '493' means 'Friendship difficult challenge', '961', means, 'Struggle difficult Exam., and '178' means 'Exam believable subject', then which digit is used for 'believable'?
 - (a) 7 or 8
 - (b) 7 or 9
 - (c) 8
 - (d) 8 or 1
- 14. In the following series, which number will replace the question mark:

23, 29, 31, 37, 41, 43, ?



- (c) 47
- (d) 49
- 15. In the following letter-series some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative.

ab—abcab—abc—bca—c

- (a) abac
- (b) bcac
- (c) ccab
- (d) bbac
- 16. 4 18, 24, 21, 27, ?, 30, 27
 - (a) 33
 - (b) 30
 - (c) 24
 - (d) 21
- 17. 5, 7, 11, ?, 35, 67
 - (a) 23
 - (b) 28
 - (c) 30
 - (d) 19
- 18. If GARDEN is coded as 325764 and WATER as 92165, how can we code the word WARDEN in the same way?
 - (a) 925764
 - (b) 295764
 - (c) 952764
 - (d) 957264
- 19. If F = 6, MAT=34, then how much is CAR?
 - (a) 21
 - (b) 22
 - (c) 25
 - (d) 28
- 20. Find next term of the series, 4, 9, 16, 25, 36, 49, ?
 - (a) 1
 - (b) 9
 - (c) 20
 - (d) 64
- 21. Find odd man out of the series 16, 25, 36, 72, 144, 196, 225
 - (a) 36



- (b) 72
- (c) 196
- (d) 225

22. Find the missing value in the series: 51, 52, 60, 87, 151, _____, 492.

- (a) 195
- (b) 276
- (c) 317
- 420 (d)
- 23. Find missing term of the series ABD, DGK, HMS, MTB, SBL, ?
 - XKW (a)
 - (b) ZAB
 - (c) ZKU
 - (d) ZKW

24. In a certain code TEACHER is written as VGCEJGT, how is CHILDREN written in that code.

- EIKNEGTP (a)
- (b) EGKNFITP
- EJKNFGTO (C)
- (d) EJKNFTGP
- In a certain code INACTIVE is written as VITCANIE, how is COMPUTER written in the same code 25.
 - (a) **PMOCRETU**
 - (b) ETUPMOCR
 - (c) **UTEPMOOR**
 - MOCPETUR (d)
- 26. Choose the odd numerical pair group
 - 34-43 (a)
 - (b) 55-62
 - (c) 62-71
 - (d) 83-92
- 27. If A = 26, SUN = 27, then CAT = ?
 - (a) 24
 - (b) 27
 - 57 (c)
 - (d) 58
- In a certain code language PREMONITION is written as 68530492904, how will the word MONITOR be 28. written that code language?
 - (a) 12345567
 - (b) 3029408
 - 3049208 (c)
 - (d) 3049258



- 29. In a certain code language, '123' means 'bright little boy', '145' means 'tall big boy' and '637' means 'beautiful little flower'. Which digit in that language means 'bright'?
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
- 30. Find next term of the series 1, 3, 4, 8, 15, 27, ?
 - (a) 37
 - (b) 44
 - (c) 50
 - (d) 55
- 31. Find next term of the series 1, 5, 14, 30,55, 91,?
 - (a) 130
 - (b) 140
 - (c) 150
 - (d) 160
- 32. Find odd man out of the following:
 - (a) 295
 - (b) 381
 - (c) 552
 - (d) 729
- 33. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code ?
 - (a) EJKNEGTP
 - (b) EGKNEITP
 - (c) EJKNFGTO
 - (d) EJKNFTGP
- 34. If HEALTH is written as GSKZDG, then how will NORTH be written in that code?
 - (a) OPSUI
 - (b) GSQNM
 - (c) FRPML
 - (d) IUSPO
- 35. If HONEY is coded as JQPGA, which word is code as VCTIGVU ?
 - (a) CARPETS
 - (b) TRAPETS
 - (c) TARGETS
 - (d) UMBRELU
- 36. Which of the following is odd one?
 - (a) CEHL
 - (b) KMPT

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- (c) OQTX
- (d) NPSV
- 37. Find the wrong term of the series 121, 143, 165, 186, 209
 - (a) 143
 - (b) 165
 - (c) 186
 - (d) 209
- 38. Find missing term 7, 26, 63, 124, 215, 342?
 - (a) 391
 - (b) 421
 - (c) 481
 - (d) 511
- 39. Find odd man out of the series 145, 197, 257, 325,399
 - (a) 145
 - (b) 399
 - (c) 257
 - (d) 325
- 40. Find missing term of the alphabet series ABD, DGK, HMS, MTB, SBL?
 - (a) XKW
 - (b) ZAB
 - (c) ZKU
 - (d) ZKW
- 41. In a certain language, FLOWER is coded UOLDVI, then how is TERMINAL coded in that language?
 - (a) FLKPMROZ
 - (b) GVINRMZO
 - (c) RVNIGLKA
 - (d) MNIVGYEO
- 42. In a certain code, TELEPHONE is written as ENOHPELET. How is ALIGATOR written
 - (a) ROTAGILA
 - (b) ROTAGAIL
 - (c) ROTAGILE
 - (d) ROTEGILA
- 43. Find the next number in the series 2, 5, 11, 23, 47, ...
 - (a) 84
 - (b) 95
 - (c) 98
 - (d) 105

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- 44. If TAP is coded as SZO in a language, then how is FRIEND coded in same language? 15
 - (a) CMDHQE
 - (b) QEDHCM
 - (c) EQIENE
 - (d) EQHDMC
- 45. Find the odd man out from the following series: 7, 23, 47, 119, 171, 287
 - (a) 119
 - (b) 171
 - (c) 287
 - (d) 7
- 46. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

- (a) 318826
- (b) 318286
- (c) 618826
- (d) 338816
- 47. AZ, GT, MN,....., YB, EV. The value at blank space (.....) will be:
 - (a) JH
 - (b) SH
 - (c) SK
 - (d) TS

48. Find the missing term of the following series : 3, 15, ?, 63,99, 143

- (a) 27
- (b) 35
- (c) 45
- (d) 56

49. Find the missing term of the following series : 7,26, 63, 124,215,342,?

- (a) 391
- (b) 421
- (c) 481
- (d) 511

50. Find the missing term of the following series :3,7, 15, ?, 63, 127

- (a) 30
- (b) 31
- (c) 47
- (d) 52

51. Find odd man out of the following series 3,4, 10, 32, 136, 685,4116

- (a) 10
- (b) 32



- (c) 136
- (d) 4116
- 52. In a certain code language, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?
 - (a) 2
 - (b) 4
 - (c) 5
 - (d) 6





ANSWERS KEY

1	b	2	b	3	b	4	d	5	С
6	С	7	b	8	d	9	а	10	b
11	С	12	С	13	а	14	С	15	С
16	С	17	d	18	а	19	b	20	d
21	b	22	d	23	d	24	d	25	b
26	b	27	С	28	С	29	b	30	С
31	b	32	С	33	d	34	b	35	С
36	d	37	С	38	d	39	b	40	d
41	b	42	а	43	b	44	d	45	b
46	а	47	b	48	b	49	d	50	b
51	b	52	а						





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 10 – DIRECTION SENSE TEST

- 1. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South-West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?
 - (a) North-West
 - (b) North-East
 - (c) South-East
 - (d) South-West
- 2. Rahim started from point X and walked straight 5 km. East, then turned left and walked straight 2 km. and again turned left and walked straight 7 km. In which direction is he from the point X ?
 - (a) North-East
 - (b) South-West
 - (c) South-East
 - (d) North-West
- 3. Praveen is facing west. He turns 45° in the clockwise direction and then again another turns with 180° in the same direction i.e. clockwise direction, after that he turns 270° in the anti-clockwise direction. Which direction is he facing now ?
 - (a) North-West
 - (b) West
 - (c) South-West
 - (d) South
- 4. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?
 - (a) South
 - (b) South-West
 - (c) North-East
 - (d) North-West
- 5. In a straight line there are six persons sitting in a row. B is between F and D. E is between A and C. A does not stand next to F or D, C does not stand next to D. F is between which of the following persons?
 - (a) B and E
 - (b) B and C
 - (c) B and D
 - (d) B and A



- 6. Rashmi walked 2 km west of her house and then turned south covering 4 km. Finally, she moved 3 km towards east and then again 1 km west. How far is she from her initial position?
 - (a) 7 km
 - (b) 3 km
 - (c) 4 km
 - (d) 12 km
- 7. From home Neha goes towards North for her college and then she turns left and then turns right, and finally she turns left and reaches college. In which direction her college is situated with respect to her home ?
 - (a) South-West
 - (b) North-East
 - (c) North-West
 - (d) South-East
- 8. Y is to the East of X, which is to the North of Z. If P is to the South of Z, then P is in which direction with respect to Y.
 - (a) North
 - (b) South
 - (c) Soth-East
 - (d) South-West
- 9. Five villages P, Q, R, S, and T are situated close to each other. P is to the west of Q, R is to the south of P. T is to the north of Q and S is to the east of T. Then, R is in which direction with respect to S?
 - (a) North-West
 - (b) South-East
 - (c) South-West
 - (d) Data inadequate
- 10. If South-West becomes North, then what will North-East be?
 - (a) North
 - (b) South-East
 - (c) South
 - (d) East
- 11. In a clock at 12 : 30, hour needle is in North direction while minute needle is in South direction. In which direction would be minute needle at 12:45?
 - (a) North-West
 - (b) South-East
 - (c) West
 - (d) East
- 12. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls and finally along a diagonal order to catch a rat. How much total distance is covered by the cat?
 - (a) 10 m
 - (b) 14 m
 - (c) 38 m
 - (d) 48 m



- 13. If A x B means A is to the south of B; A + B means A is to the north of B; A % B means A is to the east of B; A B means A is to the west of B; then in P % Q + R S, S is in which direction with respect to Q?
 - (a) South-West
 - (b) South-East
 - (c) North-East
 - (d) North-West
- 14. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is to turn right at 1350 and to cover 30 m. In which direction should he go?
 - (a) West
 - (b) South
 - (c) South-West
 - (d) South-East
- 15. A man is facing north. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 45 degree in the anticlockwise direction. Find which direction he is facing now ?
 - (a) North
 - (b) East
 - (c) West
 - (d) South
- 16. A child is looking for his father. He went 90 meters in the east before turning to his right. He went 20 meters before turning to is right again to look for his father at his uncle's place 30 meters from this point. His father was not there. From there, he went 100 meters to his north before meeting his father in a street. How far did the son meet his father from starting point ?
 - (a) 80 m
 - (b) 90 m
 - (c) 100 m
 - (d) 110 m
- 17. Raju starts from point A and walks 1 km towards south, turns left and walks 1 km. Then he turns left again and walks 1 km. now he is facing?
 - (a) East
 - (b) West
 - (c) North
 - (d) South-West
- 18. Roopa starts from a point and walks 15 metre towards west, turns left and walks 12 metre, turns right again and walks. What is the direction she is now facing?
 - (a) South
 - (b) West
 - (c) East
 - (d) North
- 19. A car travelling from south to north covers a distance of 8 kms, then turns right and runs another 9 kms and again turns to the right and was stopped. Which direction does it face now?
 - (a) South



- (b) North
- (c) West
- (d) East
- 20. Shyam goes 5 km in the North from his school. Now, turning to the left, he goes to 10 km and again turns to left and goes to 5 km. How far he is from his school and in which direction?
 - (a) 10 km, South from school
 - (b) 10 km, North from school
 - (c) 10 km, West from school
 - (d) 10 km, East from school
- 21. Rasik walked 20 m towards north. Then he turned right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally, he turns left and walks 15 m. In which direction and how many metres is he from the starting position?
 - (a) 15 m West
 - (b) 30 m East
 - (c) 30 m West
 - (d) 45 m East
- 22. Gopal started from the house towards West. After walking a distance of 30 metres, he turned towards right and walked 20 metres. He then turned left and moving a distance of 10 metres, turned to his left again and walked 40 metres. He now turned to the left and walked 5 metres. Finally, he turned to his left. In which direction was he walking now?
 - (a) North
 - (b) South
 - (c) East
 - (d) South-West
- 23. Namita walks 40 metres towards west Namita walks 14 metres towards west, then turns to her right and walks 14 metres and then turns to her left and walks 10 metres. Again turning to her left she walks 14 metres. What is the shortest distance (in metres) between her starting point and the present position?
 - (a) 38
 - (b) 28
 - (c) 10
 - (d) 24
- 24. The door of Aditya's house faces the East. From the back side of his house, he walks straight 50 m, then turns to the right and walks 50 m again. Finally, he turns towards left and stops after walking 25 m. Now, Aditya is in which direction form the starting point?
 - (a) South-East
 - (b) North-East
 - (c) South-West
 - (d) North -East
- 25. Maya starts at point T, walks straight to point U which is 4 ft. away. She turns left, at 90° and walks to W which is 4 ft. away. turns 90° right and goes 3 ft. to P. turns 90° right and walks 1 ft. to Q, turns left at 90° and goes to V, which is 1 ft. away and once again turns 90° right and goes to R. 3 ft. away. What is the distance between T and R?
 - (a) 4 feet



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- (b) 5 feet
- (c) 7 feet
- (d) 8 feet
- 26. There are four towns P, Q, R and T.Q is to the South-west of P, R is to the east of Q and South-east of P and T is to the north of R in line with QP. In which direction of P is T located?
 - (a) East
 - (b) South-east
 - (c) North
 - (d) North-east
- 27. The length and breadth of a room are 8 metre and 6 metre respectively. A cat runs along all four walls and finally along diagonal order to catch a rat. How much total distance covered by the cat?
 - (a) 10
 - (b) 14
 - (c) 38
 - (d) 48
- 28. Ravi left home and cycled 10 km towards South, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight?
 - (a) 10Km
 - (b) 15km
 - (c) 12 km
 - (d) 17 km



- 29. Distance between E and I is _____.
 - (a) 4 km
 - (b) 2 km
 - (c) 1 km
 - (d) 3 km
- 30. Distance between E and G is _____.
 - (a) 1 km
 - (b) 1.5 km
 - (c) 2 km
 - (d) 5 km
- 31. Distance between A and F is_____
 - (a) 1 km
 - (b) 1.41 km
 - (c) 2 km
 - (d) 3 km





32. Seven villages A, B, C, D E, F and G are situated as follows:

E is 2 km to the west of B

- F is 2 km to the north of A $\,$
- C is 1 km to the west of A

D is 2 km to the south of G

G is 2 km to the east of C

D is exactly in the middle of B and E.

Which two villages are the farthest from one another?

- (a) F and E
- (b) D and C
- (c) F and B
- (d) G and E
- 33. If 'South-east' is called 'East', 'North-west' is called 'West', 'South-west' is called 'South' and so on, what will 'North' be called?
 - (a) East
 - (b) North-east
 - (c) North-west
 - (d) South
- 34. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?
 - (a) South
 - (b) South-West
 - (c) North-East
 - (d) North-West
- 35. A man is facing East, then he turns left and goes to 10 metres then turns right and goes 5 metres then goes 5 metres to the South and from there 5 metres to West. In which direction is he from his original place?
 - (a) East
 - (b) West
 - (c) North
 - (d) South
- 36. Rahim started from point X and walked straight 5 km. East, then turned left and walked straight 2 km. and again turned left and walked straight 7 km. In which direction is he from the point X ?
 - (a) North-East
 - (b) South-West
 - (c) South-East
 - (d) North-West
- 37. Sangeeta leaves from her home. She first walk 30 metres in North-West direction, and then 30m in South West direction, next she walks 30 metres in South-East direction. Finally she turns towards her house. In which direction is she moving?
 - (a) North-West

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- (b) North-East
- (c) South-East
- (d) South-West
- 38. A person is facing towards North. He moves 70° clock-wise direction. Again he is moving 300° clock-wise direction. Now, in which direction is he presently facing ?
 - (a) North-West
 - (b) South-East
 - (c) North-East
 - (d) South-West
- 39. A man is facing towards East and turns through 45° clockwise again 180° clock wise and then turns through 270° anti-clock wise. In which direction is he facing now?
 - (a) West
 - (b) North-East
 - (c) South
 - (d) South-West
- 40. Facing towards North, Ravi walks 35 m. He then turns left and walks 55 m. He again turns left and walks 35 m. How far is from original position and towards which direction.
 - (a) 30 m, North
 - (b) 20 m, East
 - (c) 55 m, West
 - (d) 20 m, South



- (a) 20 m
- (b) 50 m
- (c) 15 m
- (d) 25 m
- 42. 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?
 - (a) B
 - (b) C
 - (c) D
 - (d) F
- 43. 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 Jalendra'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 the south-east direction from Girdhari's house. Then where is the position of Ritik's house in relation to Balkrishna's?
 - (a) South-East



- (b) South-West
- (c) North
- (d) North-East
- 44. If Ajay stands on his head with his face towards North, in which direction will his left-hand point?
 - (a) North-East
 - (b) North
 - (c) East
 - (d) North-West
- 45. 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?
 - (a) East
 - (b) West
 - (c) North
 - (d) South
- 46. 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 ?
 - (a) South -East
 - (b) North-West
 - (c) East
 - (d) West

- 47. Neha walked 2 km west of her house and then turned south covering 4 km. Finally, she moved 3 km towards east and then again 1 km west. How far is she from her initial position?
 - (a) 7 km
 - (b) 3 km
 - (c) 4 km
 - (d) 12 km
- 48. Shweta moved a distance of 75 metres towards the north. She then turned to the left and walking for about 25 metres, turned left again and walked 80 metres. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?
 - (a) South
 - (b) South-West
 - (c) North-East
 - (d) North-West
- 49. Varun faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally he turns to the right and moves 40 metres. In which direction is he now from his starting point?
 - (a) South-East
 - (b) South-West
 - (c) South
 - (d) North-West



- 50. Pankaj is facing west. He turns 45° in the clockwise direction and then again another turns with 180° in the same direction i.e. clockwise direction, after that he turns 270° in the anticlockwise direction. Which direction is he facing now?
 - (a) North-West
 - (b) West
 - (c) South-West
 - (d) South
- 51. A man is facing north. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 45 degree in the anticlockwise direction. Find which direction he is facing now?
 - (a) North
 - (b) East
 - (c) West
 - (d) South





ANSWERS KEY

1	b	2	d	3	С	4	b	5	b
6	С	7	С	8	d	9	С	10	С
11	С	12	С	13	b	14	С	15	d
16	С	17	С	18	b	19	а	20	С
21	d	22	а	23	d	24	d	25	d
26	d	27	С	28	b	29	С	30	С
31	а	32	С	33	d	34	b	35	С
36	d	37	b	38	С	39	b	40	С
41	b	42	b	43	а	44	С	45	С
46	С	47	С	48	b	49	а	50	С
51	d								





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 11 – SEATING ARRANGEMENTS

- 1. A, B, C, D, E and F are sitting around a round table. A is between E and F, E is opposite to D, and C is not in either of the neighbouring seats of E. Who is opposite to B?
 - (a) C
 - (b) D
 - (c) F
 - (d) None of these
- 2. Five boys A, B, C, D and E are sitting in a row. A is to the right of B, and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?
 - (a) D
 - (b) A
 - (c) E
 - (d) B

- 3. Eight leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.
 - (i) T is fourth to the left of P
 - (ii) S is fourth to the right of W
 - (iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.
 - (iv) P is next to the right of W and but left of Q. Who are sitting at the extreme ends?
 - (a) T and S
 - (b) P and Q
 - (c) U and R
 - (d) None
- 4. Five students are standing in a circle. Abhinav is between Alok and Ankur. Apurva is on the left of Abhishek. Alok is on the left of Apurva. Who is sitting next to Abhinav on his right?
 - (a) Apurva
 - (b) Ankur
 - (c) Abhishek
 - (d) Alok
- 5. Six persons M, N, O, P, Q and R are sitting in two rows with three persons in each row. Both the rows are in front of each other. Q is not at the end of any row. P is second the left of R. O is the neighbour of Q and diagonally opposite to P. N is the neighbour of R. Who is in fronts of N ?
 - (a) M
 - (b) R
 - (c) Q
 - (d) P

VIDHYODAY

VIDHYA KA UDAY



- 6. A, P, R, X, S and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of P?
 - (a) A
 - (b) X
 - (c) S
 - (d) Z
- 7. Five friends A, B, C, D and E are standing in a row facing South but not necessarily in the same order. Only B is between A and E, C is immediate right to E and D is immediate left to A, On the basis of above information, which of the following statements is definitely true ?
 - (a) B is to the left of A.
 - (b) D is third to the left of E.
 - (c) B is to the right of E.
 - (d) A is second to the left of C.
- 8. There are four children P,Q, R, S sitting in a row. P occupies seat next to Q but not next to R. If R is not sitting next to S? Who is occupying seat next to adjacent to S.
 - (a) Q
 - (b) P
 - $(c) \quad P \ and \ Q$
 - (d) None

(9-10) A, B, C, D, E, F and G arc sitting in a straight line facing north, but not necessarily in the same order. There is only one person between F and C. E sits between A and D. There are only two persons between E and G. F sits on the immediate left of A, who sits in the middle of the row.

- 9. How many persons are there between E and F
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
- 10. Who among the following sit at the extreme ends on the row ?
 - (a) D, F
 - (b) G,C
 - (c) B, C
 - (d) None of these
- 11. Who among the following sits to the immediate right of D
 - (a) G
 - (b) E
 - (c) F
 - (d) B
- 12. In a line, P is sitting 13th from left. Q is sitting 24th from the right and 3rd left from P. How many people are sitting in the line?
 - (a) 34
 - (b) 31



- (c) 32
- (d) 33
- 13. Four ladies A, B, C and D and four gentlemen E, F, G and H are sitting in a circle round a table facing each other.

Directions:

- (1) No two ladies or two gentlemen are sitting side by side.
- (2) C, who is sitting between G and E is facing D.
- (3) F is between D and A and is facing G.
- (4) H is to the right of B.

Who are immediate neighbours of B?

- (a) G and H
- (b) F and H
- (c) E and F
- (d) E and H
- 14. There are five houses P, Q, R, S and T. P is right of Q and T is left of R and right of P. Q is right of S. Which house is in the middle?
 - (a) P
 - (b) Q
 - (c) T
 - (d) R

- 15. Six friends A, B, C, D, E and F are sitting in a row facing towards North, C is sitting between A and E, D is not at the end, B is sitting at immediate right of E, F is not at the right end, but D is sitting at 3rd left of E. Which of the following is sitting to the left of D?
 - (a) A
 - (b) F
 - (c) E
 - (d) C
- 16. Six girls are standing in such a way that they form a circle, facing the centre. Subbu is to the left of Pappu, Revathi is between Subbu and Nisha, Aruna is between Pappu and Keerthna. Who is to the right of Nisha?
 - (a) Ravathi
 - (b) Aruna
 - (c) Subbu
 - (d) Keerthana
- (17-19) A, B, C, D, E, F and G are sitting in a row facing North.
 - (i) F is to the immediate left of G
 - (ii) E is 4th to the right of G
 - (iii) C is the neighbour of B and D
 - (iv) Person who is third to the left of D is at one of the ends.
- 17. Who are the neighbours of B?
 - (a) C and D
 - (b) C and G



- (c) G and F
- (d) C and E
- 18. What is the position of A?
 - (a) Between E and D
 - (b) Extreme left
 - (c) centre
 - (d) Extreme right
- 19. who are the left of C
 - (a) only B
 - (b) G, B and D
 - (c) G and B
 - (d) D, E, F and A

(20-21) 8 persons E, F, G, H, I, J, K and L are seated around a square table two on each side. There are 3 ladies who are not seated next to each other.

J is between L and F and G is between I and F.

H, a lady member is second to the left of J.

F, a male member is seated opposite to E, a lady member.

There is a lady member between F and I.

- 20. Who among the following is to the immediate left of F?
 - (a) G
 - (b) I
 - (c) J
 - (d) H
- 21. How many persons are seated between K and F
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
- 22. 8 leaders P, Q, R, S, T, U, V and W are sitting on a bench facing towards North.
 - (i) T is fourth to the left of P
 - (ii) S is fourth to the right of W
 - (iii) U and R are not sitting at the ends, but they are neighbours of T and Q respectively.
 - (iv) P is next to the right of W and but left of Q.

Who are sitting at the extreme ends?

- (a) T&S
- (b) P&Q
- (c) U&R
- (d) None



Directions (23-24): Read the following informations carefully to answer these questions:

- (i) Six flats on a floor in two rows facing North and South are allotted to P, Q, R, S, T and U.
- (ii) Q gets a North facing flat and is not next to S.
- (iii) S and U get diagonally opposite flats.
- (iv) R, next to U, gets a South facing flat and T gets a North facing flat.
- 23. The flats of which of the other pairs than SU, are diagonally opposite to each other ?
 - (a) QP
 - (b) PT
 - (c) QR
 - (d) TS
- 24. Which of the following combinations gets South facing flats ?
 - (a) UPT
 - (b) URP
 - (c) QTS
 - (d) Data inadequate
- 25. A, B, C, D, E and F are sitting around a round table. A is between E and F, E is opposite to D, and C is not in either of the neighbouring seats of E. Who is opposite to B?
 - (a) C
 - (b) D
 - (c) F
 - (d) None of these



- 26. Five boys A, B, C, D and E are sitting in a row. A is to the right of B and E is to the left of B but to the right of C. A is to the left of D. Who is second from the left end ?
 - (a) D
 - (b) A
 - (c) E
 - (d) B

27-29. Read the following information carefully and then answer the questions 53,54 and 55.

Six friends A, B, C, D, E and F are sitting on a bench, facing towards North.

- I. A is sitting next to B.
- II. C is sitting left to D.
- III. D is not sitting with E.
- IV. E is on the left end of the bench.
- V. C is third position from right.
- VI. A is on the right side of B and to the right side of E.
- VII. A and C are sitting together.
- VIII. F is sitting Right of D.
- 27. At what position A is sitting?
 - (a) Between B and C
 - (b) Between D and C



- (c) Between E and D
- (d) Between C and E
- 28. What is position of B?
 - (a) Second from right
 - (b) Centre
 - (c) Extreme left
 - (d) Second from left
- 29. What is position of D?
 - (a) Extreme from left
 - (b) Extreme right
 - (c) Third from left
 - (d) Second from right.
- 30. Six Children A, B, C, D, E and F are sitting in a row facing towards North. C is sitting between A and E, D is not at the end. B is sitting immediate right of E, F is not at the right of end, but D is sitting 3rd left of E. Which of the following is right of D.
 - (a) A
 - (b) F
 - (c) E
 - (d) C
- 31. Five Friends are sitting on a bench. A is to the left of B but on the right of C, D is to the right of B but one the left of E. Who are at the extremes?
 - (a) A, B
 - (b) A, D
 - (c) C, E
 - (d) B, D
- 32. Six persons A. B. C. D. E and Pare 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
 - (b) B & C
 - (c) B & D
 - (d) B & A
- 33. 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
- (b) Bindu



- (c) Gautam
- (d) Harendra

Note: Read the following information carefully and answer the questions (34 to 35) 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.

- 34. Who is to the immediate left of B?
 - (a) M
 - (b) J
 - (c) D
 - (d) K
- 35. Which of the following persons are in the same row?
 - (a) BDC
 - (b) BMJ
 - (c) MJK
 - (d) MJD
- 36. 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:
 - (a) Chandresh
 - (b) Diksha
 - (c) Gayatri
 - (d) Priyanka
- 37. A, P, R, X, S and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of P?
 - (a) A
 - (b) X
 - (c) S
 - (d) Z
- 38. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting?
 - (a) Between B and D
 - (b) Between B and C
 - (c) Between E and D
 - (d) Between C and E
- 39. There are four children P, Q, R, S sitting in a row. P occupies seat next to Q but not next to R. If R is not sitting next to S? Who is occupying seat next to adjacent to S.
 - (a) Q
 - (b) P
 - (c) P and Q
 - (d) None of these





- 40. Six persons A,B,C,D,E and F are standing in a circle. B is between D and C.A is between E and C.F is to the right of D.Who is between A and F?
 - (a) B
 - (b) C
 - (c) D
 - (d) E
- 41. Five persons are standing in a line. One of the two persons at the extreme ends is a professor and the other a businessman. An advocate is standing to the right of a student. An author is to the left of the businessman. The student is standing between the professor and the advocate. Counting from the left, the advocate is at which place ?
 - (a) 1st
 - (b) 2nd
 - (c) 3rd
 - (d) 5th





1	С	2	С	3	а	4	d	5	С
6	С	7	b	8	С	9	а	10	С
11	d	12	d	13	а	14	а	15	b
16	а	17	b	18	d	19	С	20	С
21	С	22	а	23	а	24	b	25	С
26	С	27	а	28	d	29	d	30	а
31	С	32	b	33	d	34	а	35	b
36	b	37	b	38	b	39	b	40	d
41	С								



CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 12 – BLOOD RELATIONS

India's Only Institute That Gives 100% Fees Refund If You Fail VIDHYA KA UDAY

- 1. Pointing to a photograph, a man said to a woman "His mother is the only daughter of your father " How is the woman related to that person
 - (a) Daughter
 - (b) Sister

VIDHYODAY

- (c) Mother
- (d) Wife

(2-3) Read the following information and answer the given below it :

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- (i) A is the father of C, But C is not his son,
- (ii) E is the daughter of C. F is the spouse of A.
- (iii) B is the brother of C. D is the son of B.
- (v) G is the spouse of B. H is the father of G
- 2. Who is the grand mother of D?
 - (a) A
 - (b) C
 - (c) F
 - (d) H
- 3. Who is son of F
 - (a) B
 - (b) C
 - (c) D
 - (d) E
- 4. A is the father of C and D is the son of B. E is the brother of A. If C is the sister of D, how is B is related to E?
 - (a) Daugher
 - (b) Brother-in-law
 - (c) Husband
 - (d) Sister-in-law
- 5. If 'P+Q' means 'P is the father of Q', 'P×Q' means 'P is the brother of Q', 'P-Q' means 'P is the mother of Q', then which of the following is definitely true about 'C-A+B'?
 - (a) B is the son of A
 - (b) A is the son of C
 - (c) B is the father of C
 - (d) C is the mother of B





- 6. B is the brother of A whose only sister is mother of C, D is maternal grandmother of C How is A related to D?
 - (a) Aunt
 - (b) Daughter-in-law
 - (c) Daughter
 - (d) Nephew
- 7. If X+Y means X is the mother of Y; X-Y means X is the brother of Y; X%Y means X is the father of Y and X×Y means X is the sister of Y, Which of the following shows that A is the materanal uncle of B?
 - (a) $B+D\times C-A$
 - (b) B-D%A
 - (c) $A-C+D\times B$
 - (d) $A+C\times D-B$

Directions (Questions 8-10) Read the following information and answer the questions given below.

Anita is the niece of Prateek's mother. Anita's mother is Prateek's aunt. Rohan is Anita's mother's brother. Rohan's mother is Anita's grandmother. From this information. deduce the relationship between.

- 8. Rohan's mother is _____to Anita's mother.
 - (a) Aunt
 - (b) Mother
 - (c) No relation
 - (d) Sister
- 9. Prateek's and Anita's mother are VIDHYODAY
 - (a) Cousin sister
 - (b) Sister-in-law
 - (c) Friends
 - (d) Sisters
- 10. Rohan is Prateek's _____
 - (a) Brother
 - (b) Brother-in-law
 - (c) Uncle
 - (d) Cousin brothers
- 11. A and B both are children of C. If C is the mother of A, A is the son of C but B is not the daughter of C, then how are A and B mutually related?
 - (a) A is the brother of B
 - (b) A is the nephew of B
 - (c) A is the sister of B
 - (d) A is the cousin of B
- 12. A husband and wife had five married sons and each of these had four children. How many members are there in the family?
 - (a) 50
 - (b) 40



- (c) 32
- (d) 36
- 13. Pointing to the lady in the photograph , Seema said, "Her son's father is the son-in-law of my mother." How is Seema related to the lady?
 - (a) Sister
 - (b) Mother
 - (c) Cousin
 - (d) Aunt

(14-15). Each of these questions is based on the following information:

P % Q means P is the father of Q.

P @ Q means P is the sister of Q.

- P \$ Q means P is the brother of Q.
- P * Q means P is the wife of Q.
- 14. In the expression F D % K @ H * R, how is D related to R?
 - (a) Father
 - (b) Mother
 - (c) Sister
 - (d) Father in law
- 15. In the expression A % B @ K * H % P, how is B related to P?
 - (a) Aunt
 - (b) Cousin
 - (c) Uncle
 - (d) Daughter
- 16. A is B's brother. C is D'S father. E is B's mother. A and D are brothers. How is E related to C?
 - (a) Sister
 - (b) Sister-in- law
 - (c) Niece
 - (d) Wife
- 17. A is B's brother, C is A's mother, D is C's father, E is B's son, How is B related to D?
 - (a) Son
 - (b) Granddaughter
 - (c) Grandfather
 - (d) Great Grandfather
- 18. A is the mother of D and sister of B. B has a daughter C who is married to F. G is the husband of A. How is G related to D?
 - (a) Uncle
 - (b) Husband
 - (c) Son
 - (d) Father

VIDHYODAY



- 19. P and Q are brothers. R and S are sister. P's son is S's brother. How is Q related to R?
 - (a) Uncle
 - (b) Brother
 - (c) Father
 - (d) Grandfather
- 20. Pointing out to a photograph, a man tells his friend, "She is the daughter of the only son of my father's wife." How is the girl in the photograph related to the man?
 - (a) Daughter
 - (b) Mother
 - (c) Cousin
 - (d) Sister
- 21. A party consists of grandmother, father, mother, four sons and their wives and one son and two daughters to each of the sons. How many females are there is all?
 - (a) 13
 - (b) 16
 - (c) 18
 - (d) 24
- 22. All the six members of a family A, B, C, D, E and F are travelling together. 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 of B. How many male members are there in the family?
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
- 23. T, S and R are three brothers. T's son Q is married to K and they have one child Rahul blessed to them. M the son of S is married to H and this couple is blessed with a daughter Madhvi. R has daughter N who is married to P. This couple has one daughter Karuna born to them. How is Madhvi related to S?
 - (a) Daughter
 - (b) Niece
 - (c) Granddaughter
 - (d) None of these
- 24. Six persons M, N, O, P, Q and R are sitting in two rows with three persons in each row. Both the row are in front of each other. Q is not at the end of any row. P is second the left of R. O is the neighbour of Q and diagonally opposite to P. N is the neighbour of R. Who is in front N?
 - (a) R
 - (b) Q
 - (c) P
 - (d) M
- 25. If A+B means B is the brother of A; $A \times B$ means B is the husband of A;

A–B means A is the mother of B and A% B means A is the father of B, which of the following relations shows that Q is the grandmother of T?

(a) Q-P+R % T



- (b) $P \times Q \% R T$
- (c) $P \times Q \% R + T$
- (d) P+Q % R-T
- 26. Read the following instructions:

P \$ Q means P is the brother of Q;

P # Q means P is the mother of Q;

P * Q means P is the daughter of Q

If the code of family is A # B \$ C * D, who is the father in them?

- (a) D
- (b) B
- (c) C
- (d) A

(27-28.) There are seven members A, C, D, E, F, G and H in a family. There are two fathers, one mother two sisters and four brothers. E is the sister-in-law of D. G is a daughter of C. F is the brother of E. A is a grandfather of G. E is a mother of H?

- 27. How is H related to A?
 - (a) Grandson
 - (b) Granddaughter
 - (c) Son
 - (d) Cannot be determined
- 28. How many male members in the family? VIDHYODAY
 - (a) 4
 - (b) 5
 - (c) 3
 - (d) Data Inadequate
- 29. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how A is related to D.
 - (a) Grandfather
 - (b) Grandmother
 - (c) Daughter
 - (d) Granddaughter

30. Q's mother is sister of P and daughter of M. S is daughter of P and sister of T. How is M related to T?

- (a) Father
- (b) Grandmother
- (c) Grandfather or Grandmother
- (d) Grandfather
- 31. E is the son of A. D is the son of B. E is married to C. C is B's daughter. How is D related to E?
 - (a) Brother
 - (b) Uncle
 - (c) Father-in-Law
 - (d) Brother-in-law


(32-34) There are six persons A, B, C, D, E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group.

- 32. Which of the following is a group of brothers?
 - (a) ABF
 - (b) BFC
 - (c) BDF
 - (d) ABD
- 33. How many male members are there in the group?
 - (a) One
 - (b) Two
 - (c) Three
 - (d) Four
- 34. How F is related to E
 - (a) Uncle
 - (b) Husband
 - (c) Son
 - (d) Daughter
- 35. A prisoner introduced a boy who came to visit him to the jailor as "Brothers and sisters, I have none, he is my father's son's son". Who is the boy ?
 - (a) Nephew
 - (b) Son
 - (c) Cousin
 - (d) Uncle
- 36. Pointing to a man in a photograph, a woman said, "the father of his brother is the only son of my grandfather", how is the woman related to the man in the photograph?
 - (a) Mother
 - (b) Aunty
 - (c) Daughter
 - (d) Sister

(Directions 37-38) R is the father of P, who is son in law of M and S is the mother of G. S is a sister of K, who is a brother in law of P and H is the daughter of T, Who is a grandmother of G?

- 37. How is G is related to P?
 - (a) Son
 - (b) Daughter
 - (c) Grand daughter
 - (d) Cannot be determined
- 38. If M is a Female, then How is H is related to M?
 - (a) Son-in-Law
 - (b) Daughter-in-law
 - (c) Mother-in-law
 - (d) Father-in-law





- 39. There are two couples in a family. K has two children. M is wife of O, who is brother of B. F is daughter of K. U is sister of S, who is son of O. T is son of B, who is a male How is U related to T?
 - (a) Mother
 - (b) Brother
 - (c) Sister
 - (d) Cousin
- 40. Pointing to a lady, a man said, "The son of her only brother is the brother of my wife". How is lady is related to man?
 - (a) Mother's sister
 - (b) Grandmother
 - (c) Sister of father-in-law
 - (d) Maternal Aunt
- 41. A family has a man, his wife, their four sons and their wives. The family of every son also 3 sons and one daughter. Find out the total number of male members in the whole family?
 - (a) 4
 - (b) 8
 - (c) 12
 - (d) 17
- 42. Given that

A is mother of B.

C is son of A.

D is brother of E.

E is daughter of B.

The grandmother of D is

- (a) A
- (b) B
- (c) C
- (d) E

43. Read the following information and answer the question

'A+B' means 'A is the daughter of B'.

'A \times B' means 'A is the son of B'.

'A – B' means 'A is the wife of B'.

If $P \times Q$ -S, which of the following is true

- (a) S is wife of B
- (b) S is father of P
- (c) P is daughter of Q
- (d) Q is father of P





Read the following information. (44-45)

- I. In a family six members A,B,C, D, E and F , there are two married couples.
- II. D is the Grand mother of A and mother B.
- III. C is wife of B and mother of F
- IV. F is grand daughter of E
- 44. Who is C to A
 - (a) Daughter
 - (b) Grandmother
 - (c) Mother
 - (d) Cannot be determined
- 45. How many male members are in the family
 - (a) Two
 - (b) Three
 - (c) Four
 - (d) Cannot be determined
- 46. 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
 - (b) Grandson
 - (c) Granddaughter
 - (d) Father
- 47. Pointing to 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?

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- (a) Daughter
- (b) Sister
- (c) Mother
- (d) Aunty
- 48. 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
 - (b) S
 - (c) R
 - (d) Q
- 49. 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?
 - (a) Brother
 - (b) Cousin
 - (c) Maternal uncle
 - (d) Nephew

the man in photograph:



- 50. 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
 - (b) Aunty
 - (c) Cousin
 - (d) Wife
- 51. P is Q's daughter, Q is R's mother, S is R's brother. How is S related to P?
 - (a) Father
 - (b) Grandfather
 - (c) Brother
 - (d) Son
- 52. If X is brother of son of Y's son, then how is X related to Y?
 - (a) Brother
 - (b) Cousin
 - (c) Grandson
 - (d) Son
- 53. If P is the husband of Q and R is the mother of S and Q. What is R to P?
 - (a) Mother
 - (b) Sister
 - (c) Aunt
 - (d) Mother-in-law



- 54. B is the brother of A. Whose only sister is mother of C. D is maternal grandmother of C. How is A related to D?
 - (a) Aunt
 - (b) Daughter-in-law
 - (c) Daughter
 - (d) Nephew
- 55. X and Y are the children of A. A is the father of X but Y is not his son. How is Y related to A?
 - (a) Son
 - (b) Daughter
 - (c) Sister
 - (d) Brother



1	С	2	С	3	а	4	d	5	b
6	С	7	С	8	b	9	d	10	С
11	а	12	С	13	а	14	d	15	а
16	d	17	b	18	d	19	а	20	b
21	а	22	d	23	С	24	b	25	а
26	а	27	а	28	b	29	d	30	С
31	d	32	а	33	d	34	а	35	b
36	d	37	d	38	b	39	d	40	С
41	d	42	а	43	b	44	С	45	d
46	d	47	b	48	d	49	С	50	d
51	С	52	С	53	d	54	С	55	b





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CAFOUNDATION **CHAPTER-WISE MODEL TEST PAPERS CHAPTER 13 – STATISTICAL DESCRIPTION OF DATA & SAMPLING**

- 1. Which of the following statement is true?
 - Statistics is derived from the French word 'Statistik' (a)
 - (b) Statistics is derived from the Italian word 'Statista'
 - Statistics is derived from the Latin word 'Statistique'. (c)
 - None of these (d)
- 2. In tabulation, source of data, if any is shown in the :
 - (a) Stub
 - (b) Body
 - (c) Caption
 - (d) Footnote
- From the following data 73, 72, 65, 41, 54, 80, 50, 46, 49, 53, find the number of class intervals if class 3. length is given as 5, VIDHYODAY
 - (a) 6
 - 5 (b)
 - 7 (c)
 - (d) 8
- 4. The number of observations between 150 and 200 based on the following data is:

Value	More than 100	More than 150	More than 200	More than 250
No. of Observations	70	63	28	05

- (a) 46
- (b) 35
- (c) 28
- (d) 23
- 5. Data collected on religion from the census reports are:
 - Primary data (a)
 - Secondary data (b)
 - Sample data (c)
 - (d) (a) or (b)
- Parameter is a characteristic of: 6.
 - Population (a)



- (b) Sample
- (c) Probability distribution
- (d) Both (a) & (b)
- 7. The distribution of profits of a company follows:
 - (a) J-shaped frequency curve
 - (b) U-shaped frequency curve
 - (c) Bell-shaped frequency curve
 - (d) Any of these
- 8. Median of a distribution can be obtained from:
 - (a) Histogram
 - (b) Frequency Polygon
 - (c) Less than type ogives
 - (d) none of these
- 9. Frequency density corresponding to a class interval is the ratio of
 - (a) Class Frequency to the Total Frequency
 - (b) Class Frequency to the class Length
 - (c) Class frequency to the class Frequency
 - (d) Class Frequency to the Cumulative Frequency.
- 10. Standard Error can be described as
 - (a) The error committed in ksampling VIDHYA KA UDAY

 - (b) The error committed in sample survey
 - (c) The error committed in estimating parameter
 - (d) Standard deviation of Statistic
- 11. Data are said to be ______ if the investigator himself is responsible for the collection of data.
 - (a) Primary Data
 - (b) Secondary Data
 - (c) Mixed of Primary and Secondary Data
 - (d) None
- 12. A suitable graph for representing the portioning of total into sub parts in statistics is:
 - (a) A Pictograph
 - (b) A Pie Chart
 - (c) An Ogive
 - (d) A Histogram
- 13. If from a population with 25 members, a random sample without replacement of 2 members is taken, the number of all such samples is
 - (a) 300
 - (b) 625
 - (c) 50
 - (d) 600



- The number of times a particular item occurs in a given data is called its 14.
 - (a) Variation
 - (b) Frequency
 - **Cumulative frequency** (c)
 - None of these (d)
- 15. If the width of each of ten classes in a frequency distribution is 2.5 and the lower class boundary is 5.1, then the upper class boundary of the highest class is
 - 30.1 (a)
 - (b) 31.1
 - 30 (c)
 - (d) 27.6
- Let L be the lower class boundary of a class in a frequency distribution and m be the mid point of the 16. class. Which one of the following is the higher class boundary of the class?
 - $m+\frac{m+2}{2}$ (a)
 - $L + \frac{m+L}{2}$ (b)
 - (c) 2m-L
 - (d) m – 2L
- An Ogive can be prepared in _____ different ways. 17. VIDHYODAY
 - 2 (a)
 - 3 (b)
 - (c) 4
 - (d) 5
- ____ is the entire upper part of the table which includes columns and sub–column numbers, unit(s) 18. measurement.
 - Sub (a)
 - (b) Box-head
 - (c) Body
 - (d) Caption
- 19. Statistics is concerned with
 - (a) Qualitative information
 - Quantitative information (b)
 - (c) (a) or (b)
 - Both (a) and (b). (d)
- 20. The difference between the upper and lower limit of a class is called
 - **Class Interval** (a)
 - (b) Mid Value
 - **Class Boundary** (c)
 - (d) Frequency



- 21. What is exclusive Series
 - (a) In which both upper and lower limit are not included in class frequency
 - (b) In which lower limit is not included class frequency
 - (c) In which upper limit is not included in class frequency
 - (d) None of the above
- 22. The following set of data cannot be presented in a table
 - (a) The heights of students described in centimetres
 - (b) The weights of candidates expressed in kilograms
 - (c) The amount of rainfall opined as "medium", "average", "heavy", etc.
 - (d) The number of bills per day cleared by an auditor in a month
- 23. According to the empirical rule, if the data form a "bell-shaped "distribution, then the maximum and minimum frequencies occur at ______ and _____ respectively.
 - (a) Middle, left end
 - (b) Middle, right end
 - (c) End, middle
 - (d) Middle, ends
- 24. 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
 - (a) 45
 - (b) 5
 - (c) 20
 - (d) 7.5
- 25. Histogram is used for finding
 - (a) Mode
 - (b) Mean
 - (c) First Quartile
 - (d) None
- 26. Which of the following is not a type of sampling?
 - (a) Probability
 - (b) Non- Probability
 - (c) Stand-alone
 - (d) Mixed
- 27. Data are said to be _____if the investigator if the investigator himself responsible for collection of data
 - (a) Primary data
 - (b) Secondary data
 - (c) Mixed primary and Secondary data
 - (d) none of these





- 28. Which of the following is suitable for cumulative frequency distribution?
 - (a) Ogive
 - (b) Histogram
 - (c) GM
 - (d) AM

29. The left part of the table providing the description of row is called.

- (a) Caption
- (b) Box-head
- (c) Stub
- (d) Body
- 30. The following data relate to the marks of 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?

- (a) 65
- (b) 50
- (c) 35
- (d) 43
- 31. The probability of a blue-chip company is showed by
 - (a) Bell Shape Curve
 - (b) U shape Curve
 - (c) J shape Curve
 - (d) Mixed curve
- 32. The graphical representation of a cumulative frequency distribution is called.
 - (a) Histogram
 - (b) Ogive
 - (c) Both
 - (d) None of these
- 33. A table has ____ parts:
 - (a) Four
 - (b) Two
 - (c) Five
 - (d) None
- 34. The column headings of a table are known as:
 - (a) Body
 - (b) Stub
 - (c) Box-head
 - (d) Caption



- 35. Arrange the dimensions of Bar diagram, Cube diagram, Pie diagram in sequence
 - (a) 1, 2, 3
 - (b) 2, 1, 3
 - (c) 2, 3, 2
 - (d) 3, 2, 1
- 36. Out of these, which is not a probability sampling?
 - (a) cluster sampling
 - (b) stratified sampling
 - (c) quota sampling
 - (d) simple random sampling
- 37. With the increase in sample size, the error also_____
 - (a) decreases
 - (b) increases
 - (c) remains same
 - (d) all of the above
- 38. Find the number of observations between 250 and 300 from the following data:

	Value:		More	than 200	More than	250	More than 30	0 More that	n 350
	No. c	of observatio	ns:	56	38		15	0	
	(a)	56			VIDHY	ODAY			
	(b)	23							
	(c)	15							
	(d)	8							
39.	The	difference be	etween Uppe	er limit and l	ower limit o	f a class is c	alled		
	(a)	Class Interv	val						
	(b)	Class boun	daries						
	(c)	Mid-Value							
	(d)	Frequency							
40.	The	following dat	ta relate to t	he marks of	a group of s	tudents:			
	Marl	KS:	Below 10	Below 20	Below 30	Below 40	Below 50		
	No. c	of students:	15	38	65	84	100		
	How	many stude	nts got mark	s more thar	n 30?				
	(a)	65							
	(b)	50							
	(c)	35							
	(d)	43							
41.	Med	ian of a distr	ibution can l	oe obtained	from				
	(a)	Frequency	polygon						
	(b)	Histogram							



- (c) Less than type ogives
- (d) None of these.
- 42. For open-end classification, which of the following is the best measure of central tendency?
 - (a) AM
 - (b) GM
 - (c) Median
 - (d) Mode
- 43. The Secondary data is collected by:
 - (a) International source like World Bank.
 - (b) Observation method.
 - (c) Interview method.
 - (d) Mailed questionnaire method.
- 44. Exit polls are an example of which method of collecting data?
 - (a) Random sampling
 - (b) Investigation
 - (c) Census
 - (d) Quota sampling
- 45. The distribution of commuters coming to a Metro station from early morning hours to peak morning hours follows which type of frequency curve?
 - (a) Bell shaped curve
 - (b) J-shaped curve
 - (c) U-shaped curve
 - (d) Mixed curve
- 46. What is the range of a data set?
 - (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
- 47. Series in which frequencies are continuously added corresponding to each class interval in the series:
 - (a) Frequency
 - (b) Cumulative frequency series
 - (c) Deviation
 - (d) Mid value
- 48. The Ogive can be used for making
 - (a) short term projection
 - (b) medium term projection
 - (c) long term projection
 - (d) group frequency distribution





- 49. Numerical data presented in descriptive form are called:
 - (a) Classified presentation
 - (b) Tabular presentation
 - (c) Textual presentation
 - (d) Graphical presentation
- 50. What type of data is most appropriate for representing using a Pie chart?
 - (a) Continuous data
 - (b) Categorical data
 - (c) Ordinal data
 - (d) Interval data
- 51. If the class intervals of certain data are 10-14, 15-19, 20-24, then the first class boundaries is
 - (a) 9.5-14.5
 - (b) 10-14
 - (c) 10-15
 - (d) 10.5-15.5
- 52. What is the purpose of stratified random sampling?
 - (a) To ensure that every individual in the population has an equal chance of being selected.
 - (b) To divide the population into subgroups and then randomly sample from each subgroup.
 - (c) To select individuals based on their availability and convenience.
 - (d) To select a fixed percentage of the population without any specific criteria.
- 53. The number of times a particular items occurs in a class interval is called its:
 - (a) Mean
 - (b) Cumulative Frequency
 - (c) Frequency
 - (d) None of the above
- 54. An Ogive is a graphical representation of:
 - (a) Cumulative Frequency distribution
 - (b) Ungrouped Data
 - (c) A frequency distribution
 - (d) None of the above
- 55. From the following data, cumulative frequency for the class 20 30 is

	Class	Frequency
0	-10	4
10	- 20	6
20	- 30	20
30	- 40	8
40	- 50	3



Histogram can be shown as:

- _____ series is continuous.
 - **Unequal Class Intervals**
- Ogive graph is used for finding:
 - (c) Median
 - (d) All of these

Histogram is useful to determine graphically the value of: 59.

- Arithmetic Mean (a)
- (b) Mode
- (c) Median
- (d) None of these
- 60. Data are said to be ______ if the investigator himself is responsible for the collection of data.
 - **Primary Data** (a)
 - Secondary Data (b)
 - Mixed of Primary and Secondary Data (c)
 - None of these (d)
- 61. A suitable graph for representing the portioning of total into sub parts in statistics is:
 - (a) A Pictograph
 - (b) A Pie Chart
 - (c) An Ogive
 - (d) A Histogram
- 62. Standard Error can be described as
 - (a) The error committed in sampling
 - The error committed in a sample survey (b)
 - The error committed in estimating parameter. (c)
 - (d) Standard deviation of statistic.



1	b	2	d	3	d	4	b	5	b
6	а	7	С	8	С	9	b	10	d
11	а	12	b	13	а	14	b	15	а
16	С	17	а	18	b	19	d	20	а
21	С	22	С	23	d	24	b	25	а
26	С	27	а	28	а	29	С	30	С
31	а	32	b	33	С	34	d	35	С
36	С	37	а	38	b	39	а	40	С
41	С	42	С	43	а	44	а	45	b
46	а	47	b	48	a & d	49	С	50	b
51	а	52	b	53	С	54	а	55	d
56	b	57	b	58	d	59	b	60	а
61	b	62	d						







CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS

CHAPTER 14 – MEASURES OF CENTRAL TENDENCY AND DISPERSION

- 1. If two variables x and y are related by 2X + 3Y 7 = 0 and the mean and mean deviation about mean of X are 1 and 0.3 respectively, then the co-efficient of mean deviation of Y about mean is .
 - (a) -5

VIDHYODAY

- (b) 4
- (c) 12
- (d) 50
- 2. 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 :
 - (a) 14
 - (b) 15
 - (c) 16
 - (d) 9

VIDHYODAY

- - (a) 9/4
 - (b) 1
 - (c) 4/9
 - (d) 2/3
- 4. The rate of returns from three different shares are 100%, 200% and 300% respectively. The average rate of return will be.
 - (a) 350%
 - (b) 233.33%
 - (c) 200%
 - (d) 300%
- 5. If variance of x is 5, then find the variance of (2 3x)
 - (a) 10
 - (b) 45
 - (c) 5
 - (d) -13
- 6. The sum of the squares of deviations of a set of observations has the smallest value, when the deviations are taken from their
 - (a) A. M.



- (b) H. M.
- (c) G. M.
- (d) None
- 7. For a moderately skewed distribution, which of the following relationship holds?
 - (a) Mean Median = 3 (Median Mode)
 - (b) Median Mode = 3 (Mean Median)
 - (c) Mean Mode = 3 (Mean Median)
 - (d) Mean Median 3 (Mean Mode)
- 8. The mean salary for a group of 40 female workers is ₹ 5200 per month and that for a group of 60 male workers is ₹ 6800 per month. What is the combined salary ?
 - (a) ₹6160
 - (b) ₹6280
 - (c) ₹6890
 - (d) ₹6920
- 9. The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and that of another five students is 125 kg., then the mean weight of the remaining students is:
 - (a) 120
 - (b) 105
 - (c) 115
 - (d) None of these

- 10. If the difference between mean and mode is 69, then the difference between Mean and Median will be
 - (a) 63
 - (b) 31.5
 - (c) 23
 - (d) None of the above
- 11. 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) 11 years
 - (b) 14 years
 - (c) 15 years
 - (d) None of these
- 12. In a group of persons, average weight is 60 kg. If the average of males and females taken separately is 80 kg and 50 kg respectively, find the ratio of the number of males to that of females.
 - (a) 2:3
 - (b) 3:2
 - (c) 2:1
 - (d) 1:2
- 13. A train covered the first 5 km of its journey at a speed of 30km/hr and next 15 km at a speed of 45 km/hr. The average speed of the train was :



- (a) 38 km/hr
- (b) 40 km/hr
- (c) 36 km/hr
- (d) 42 km/hr
- 14. If 2x + 3y + 4 = 0 and v(x) = 6 then v(y) is:
 - (a) 8/3
 - (b) 9
 - (c) -9
 - (d) 6
- 15. If the standard deviation of 1, 2, 3, 4,, 10 is σ , then the standard deviation of 11, 12, 13, 14,, 20 is:
 - (a) 10 σ
 - (b) $10 + \sigma$
 - (C) σ
 - (d) None of these
- 16. What is the standard deviation of the following series :

Measurements	0-10	10-20	20-30	30-40
Frequency :	1	3	4	2

- (a) 81
- (b) 7.6
- (c) 9
- (d) 2.26
- 17. If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____:
 - (a) 63
 - (b) 31.5
 - (c) 23
 - (d) None of these

18. If all observations in a distribution are increased by 6, then the variance of the series will be _____

- (a) Increased
- (b) Decreased
- (c) Unchanged
- (d) None of these.
- 19. Which measure of dispersion is base on the absolute deviation only?
 - (a) Range

Page| 124

- (b) Standard Deviation
- (c) Mean Deviation
- (d) Quartile Deviation

VIDHYODAY VIDHYA KA UDAY



- 20. Calculate the value of 3rd quartile from the following data 40, 35, 51, 21, 25, 16, 29, 27, 32
 - (a) 36.25
 - (b) 30.25
 - (c) 25
 - (d) 35
- 21. The mean of 100 students was 45 . Later on, it was discovered that the marks of two students were misread as 85 and 54 instead of 58 and 45. Find correct mean.
 - (a) 68
 - (b) 36
 - (c) 44.64
 - (d) 52
- 22. The arithmetic mean and coefficient of variation of data set x are respectively, 10 and 30. The variance of 30-2x is
 - (a) 28
 - (b) 32
 - (c) 34
 - (d) 36
- 23. The approximate ratio of SD, MD, QD is
 - (a) 2:3:4
 - (b) 3:4:5
 - (c) 15:12:10
 - (d) 5:6:7
- 24. The geometric mean of three numbers 40, 50 and x is 10, the value of x is
 - (a) 5
 - (b) 4
 - (c) 2
 - (d) ½
- 25. Diffrence between upper limit and lower limit of classs is known as
 - (a) Range
 - (b) Class Mark
 - (c) Class Size
 - (d) Class Boundary
- 26. The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is :
 - (a) a + b + 2
 - (b) 6 a + b
 - (c) 4 + a b
 - (d) a + b + 4
- 27. The average of marks obtained by 120 students in a certain examination is 135. If the average marks of passed students is 39 and that of the failed students is 15; what is the number of students who passed in
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the examination?

- (a) 100
- (b) 150
- (c) 200
- (d) None of these

28. The mean of the values of 1, 2, 3, n with respective frequencies x, 2x, 3x, nx is

- (a) $\frac{n+1}{2}$
- (b) $\frac{n}{2}$
- (c) $\frac{2n+1}{3}$
- (d) $\frac{2n+1}{6}$
- 29. _____ is an absolute measure of dispersion.
 - (a) Range
 - (b) Mean Deviation
 - (c) Standard Deviation
 - (d) All the above
- 30. The wages of 8 workers expressed in rupees are 42, 45,49,38,56,54,55,47.
 - Find median wage?
 - (a) 47
 - (b) 48
 - (c) 49
 - (d) 50
- 31. If the Standard Deviation of 10 observations is 4 and if each item is divided by 2 then Standard Deviation of new series is
 - (a) 2
 - (b) -2
 - (c) 4
 - (d) None of these
- 32. If the relationship between x and y is given by 4x-6y = 13 and if the median of x is 16. Find median of y.
 - (a) 7.50
 - (b) 8
 - (c) 8.50
 - (d) none of these
- 33. Two variables x and y are related by 5x + 2y + 5 = 0 and $\overline{x} = 5$, then \overline{y} is
 - (a) 10
 - (b) -10



- (c) 15
- (d) -15
- 34. Find Q₁ for the following observations: 7,9,5,4,10,15,14,18,6,20
 - (a) 4.75
 - (b) 5.25
 - (c) 5.75
 - (d) 6.25
- 35. The relation between two variables is 2x-3y+12=0. If mean deviation of y is 6 then mean deviation of x is
 - (a) 9
 - (b) 6
 - (c) 3
 - (d) None of these
- 36. If two variables x and y are related by 2x and 3y 7 = 0 and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the co- efficient of mean deviation of y about mean is:
 - (a) -5
 - (b) 4
 - (c) 12
 - (d) 50
- 37. Which of the following result hold for a set of distinct positive observations?
 - (a) A.M. > G.M. > H.M.
 - (b) G.M. > A.M. > H.M.
 - (c) G.M. > A.M. > H.M.
 - $(d) \quad G.M. > A.M. > H.M.$
- 38. For a set of 100 observations, taking assumed mean as 4, the sum of the deviations is -11 cm, and the sum of the squares of these deviations is 257 cm2. The coefficient of variation is:
 - (a) 41.13%
 - (b) 42.13%
 - (c) 40.13%
 - (d) None
- 39. ____ & ____ are called ratio averages:
 - (a) H.M & G.M
 - (b) H.M. & A.M.
 - (c) A.M. & G.M.
 - (d) None
- 40. If X and Y are two random variables then v(x+y) is:
 - (a) v(x) + v(y)
 - (b) v(x) + v(y) 2v(x,y)
 - (c) v(x) + v(y) + 2v(x,y)
 - (d) v(x) v(y)



- 41. Mean and S.D. of x is so and 5 respectively, Find mean and S.D. of $\frac{x-50}{5}$
 - (a) (1,0)
 - (b) (0,1)
 - (c) (1,-1)
 - (d) (0, -1)

42. The standard deviation of 25, 32, 43, 53, 62, 59, 48, 31, 24, 33 is

- (a) 13.23
- (b) 12.33
- (c) 11.33
- (d) none of these
- 43. If the range of x is 2, what would be the range of -3x + 50?
 - (a) 2
 - (b) 6
 - (c) -6
 - (d) 44
- 44. If the quartile deviation of a normal curve is 4.05, then its mean deviation is
 - (a) 5.26
 - (b) 6.24
 - (c) 4.24
 - (d) 4.80

45. The mean of first 3 terms is 14 and the mean of next 2 terms is 18. The mean of 5 numbers is –

- (a) 14.5
- (b) 15
- (c) 14
- (d) 15.6
- 46. The Standard deviation is independent of change of
 - (a) Origin
 - (b) Scale
 - (c) Both
 - (d) none
- 47. A man travels from Delhi to Agra at an average speed of 30km per hour and back at an average speed of 60 km per hour. What's the average Speed.
 - (a) 48 Km/hr
 - (b) 40 km/hr
 - (c) 45 km/hr
 - (d) 35 km/hr
- 48. If the mean of frequency distribution is 100 and coefficient of variation is 45% then standard deviation is.
 - (a) 45

VIDHYODAY VIDHYA KA UDAY



- (b) 0.45
- (c) 4.5
- (d) 450

49. if the mean and SD of X are a and b respectively, then the S.D of $\frac{x-a}{b}$ is

- (a) a/b
- (b) -1
- (c) 1
- (d) ab
- 50. If the arithmetic mean between two numbers is 64 and the Geometric Mean between them is 16. The Harmonic mean between them is _____
 - (a) 64
 - (b) 4
 - (c) 16
 - (d) 40
- 51. When the mean is 3.57 and mode is 2.13, then the value of median is _____
 - (a) 3.09
 - (b) 5.01
 - (c) 5.01
 - (d) none of these.

52. The Mean of a set of 20 observations on 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

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- (a) 17.6
- (b) 18.0
- (c) 5.7
- (d) 24.6
- 53. The median following numbers, which are given in ascending order is 25. Find the value of x
 - 11, 13, 15, 19, (x+2), (x+4), 30, 35, 39, 46
 - (a) 22
 - (b) 20
 - (c) 15
 - (d) 30
- 54. The mean salary of a group of 50 persons is ₹ 5850. Later on it is discovered that the salary of one has been wrongly taken as ₹8000 instead of RS. 7800. The corrected mean salary is
 - (a) ₹5854
 - (b) ₹5846
 - (c) ₹5640
 - (d) None



- 55. If the mode of a data is 18 and mean is 24, then median is
 - (a) 18
 - (b) 24
 - (c) 22
 - (d) 21

56. If the first Quartile is 142 and semi-inter quartile range is 18, then the value of median is:

- (a) 151
- (b) 160
- (c) 178
- (d) none of these
- 57. Orgin is shifted by 5, what will happen
 - (a) SD will increase by 5
 - (b) QD will increase by 5
 - (c) MD will increase by 5
 - (d) There will be no change in SD
- 58. The third decile for the numbers 15, 10, ,25, 18, 111, 9 and 12 is
 - (a) 13
 - (b) 10.70
 - (c) 11
 - (d) 11.50
- 59. The Harmonic mean H of two numbers is 4 and their arithmetic means A and the geometric mean G satisfy the equation $2A+G^2 = =27$, the numbers are:
 - (a) (1,3)
 - (b) (9,5)
 - (c) (6,3)
 - (d) (12,7)
- 60. If mean and coefficient of variation of the marks of 10 students is 20 and 80 respectively. What will be the variance of them?
 - (a) 256
 - (b) 16
 - (c) 25
 - (d) none of these
- 61. If the same amount is added or subtracted from all the of an individual series then the standard deviation and variance both shall be ____
 - (a) Changed
 - (b) Unchanged
 - (c) Same
 - (d) none of these



- 62. The algebraic sum of the deviations of set of values from their arithmetic mean is:
 - (a) >0
 - (b) <0
 - (c) 0
 - (d) None of these
- 63. The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is
 - (a) 11
 - (b) 6
 - (c) 5
 - (d) 9
- 64. For a moderately skewed distribution, quartile deviation and the standard deviation are related by:
 - (a) S.D. = $\frac{2}{3}$ Q.D
 - (b) S.D. = $\frac{3}{4}$ Q.D

(c) S.D.
$$=\frac{4}{3}$$
 Q.D

(d) S.D. =
$$\frac{3}{2}$$
 Q.D

VIDHYODAY

65. if all the observations are increased by 6, then the variance of the series will be

- (a) Increased
- (b) Decreased
- (c) Unchanged
- (d) None of these

66. if the mode of the data is 18 and mean is24, then median is,

- (a) 18
- (b) 24
- (c) 22
- (d) 21

67. If the first Quartile is 142 and semi-Inter quartile range is 18, then the value of median is

- (a) 151
- (b) 160
- (c) 178
- (d) None of these
- 68. Which measures of dispersions is not affected by the presence of extreme observations?
 - (a) Range
 - (b) Mean deviation
 - (c) Standard deviation
 - (d) Quartile deviation



- 69. If the SD of x is 3, what us the variance of (5-2x)?
 - (a) 36
 - (b) 6
 - (c) 1
 - (d) 9
- 70. If x and y are related by y = 2x + 5 and the SD and AM of x are known to be 5 and 10 respectively, then the coefficient of variation is:
 - (a) 25
 - (b) 30
 - (c) 40
 - (d) 20.
- 71. If the relationship between two variables u and v are given by 2u + v + 7 = 0 and if the AM of u is 10, then the AM of v is
 - (a) 17
 - (b) -17
 - (c) -27
 - (d) 27.
- 72. If x and y are related by x-y-10 = 0 and mode of x is known to be 23, then the mode of y is
 - (a) 20
 - (b) 13
 - (c) 3
 - (d) 23.
- 73. If two random variables x and y are related by y = 2 3x, then the SD of y is given by
 - (a) $-3 \times SD$ of x
 - (b) 3 x SD of x.
 - (c) $9 \times SD \text{ of } x$
 - (d) 2 x SD of x.
- 74. In a class of 11 students, 3 students were failed in a test. 8 students who passed secured 10,11,20,15,12,14,26 and 24 marks respectively. What will be the median marks of the students
 - (a) 12
 - (b) 15
 - (c) 13
 - (d) 13.5
- 75. Suppose a population A has 100 observations 101,102,103,200 and another population B has 100 observations 151, 152, 153, 250. If VA and VB represents the variance of the two populations respectively, then $V_A/V_B = :$
 - (a) 9/4
 - (b) 1
 - (c) 4/9
 - (d) 2/3

Page| 132

VIDHYODAY VIDHYA KA UDAY



- 76. For a moderately skewed distribution, which of the following relationship holds?
 - (a) Mean Median = 3 (Median Mode)
 - (b) Median Mode = 3 (Mean Median)
 - (c) Mean Mode 3 (Mean Median)
 - (d) Mean Median 3 (Mean Mode)
- 77. If mean and coefficient of variation of the marks of n students is 20 and 80 respectively. What will be variance of them
 - (a) 256
 - (b) 16
 - (c) 25
 - (d) None of these
- 78. A company's past 10 years average earnings is ₹ 40 crores. To have the same average earning for 11 years including theses 10 years, how much earning must be made by the company in the eleventh year?
 - (a) ₹40 crores
 - (b) $\mathbf{\xi} \frac{40 \times 10}{11}$ crores
 - (c) More than Rs. 40 crores
 - (d) None of these
- 79. Origin is shifted by 5, then
 - (a) SD will increase by 5
 - (b) QD will increase by 5
 - (c) MD will increase by 5
 - (d) There will be no change in SD



- (a) 8%
- (b) 7.5%
- (c) 4%
- (d) None of these
- 81. If the difference between mean and mode is 63, then the difference between Mean and Median will be
 - (a) 63
 - (b) 31.5
 - (c) 21
 - (d) None of the above
- 82. A lady travel at a speed of 20km/h and returned at quicker speed. If her average speed of the whole journey is 24km/h, find the speed of return journey (in km/h)
 - (a) 25
 - (b) 30
 - (c) 35
 - (d) 38





- 83. In case of an even number of observations which of the following is median?
 - (a) Any of the two middle-most value
 - (b) The simple average of these two middle values
 - (c) The weighted average of these two middle values
 - (d) Any of these
- 84. Two variables x and y are given by y = 2x 3. If the median of x is 20, what is the median of y?
 - (a) 20
 - (b) 40
 - (c) 37
 - (d) 35
- 85. If the relationship between two variables u and v are given by 2u + v + 7 = 0 and if the AM of u is 10, then the AM of v is
 - (a) 17
 - (b) -17
 - (c) -27
 - (d) 27
- 86. The appropriate measure of dispersion for open-end classification is
 - (a) Standard deviation
 - (b) Mean deviation
 - (c) Quartile deviation
 - (d) All these measures



- 87. If Rx and Ry denote ranges of x and y respectively where x and y are related by 3x+2y+10=0, what would be the relation between x and y?
 - (a) Rx = Ry
 - (b) 2 Rx = 3 Ry
 - (c) 3 Rx = 2 Ry
 - (d) Rx = 2 Ry

88. If x and y are related by 2x+3y+4 = 0 and SD of x is 9, then SD of y is

- (a) 22
- (b) 6
- (c) 5
- (d) 24
- 89. The quartiles of a variable are 45, 52 and 75 respectively. Its quartile deviation is
 - (a) 15
 - (b) 20
 - (c) 25
 - (d) 8.30
- 90. If x and y are related as 3x+4y = 20 and the quartile deviation of x is 16, then the quartile deviation of y is
 (a) 16



- (b) 14
- (c) 10
- (d) 12
- 91. If x and y are related by y = 2x + 5 and the SD and AM of x are known to be 5 and 10 respectively, then the coefficient of variation of y is
 - (a) 25
 - (b) 30
 - (c) 40
 - (d) 20
- 92. 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
 - (b) 80
 - (c) 77.5
 - (d) 82.5
- 93. The Median of the following frequency distribution is:

х	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
- 94. If the mean and median of a moderately asymmetrical series are 70.8 and 68.6 respectively, then the most probable mode is:
 - (a) 64.2
 - (b) 75.2
 - (c) 63.4
 - (d) 72.5
- 95. For a moderately-skewed distribution which of the following relationship holds?
 - (a) Mean-Mode = 3 (Mean Median)
 - (b) Median-Mode = 3 (Mean Median)
 - (c) Mean-Median= 3 (Mean Mode)
 - (d) Mean-Median= 3 (Median Mode)
- 96. What is the coefficient of range for the observations 20, 28, 32, 41, 48, 60?
 - (a) 50
 - (b) 20
 - (c) 40
 - (d) 200



- 97. In which of the following there is no impact of presence of extreme observations?
 - (a) Quartile deviation
 - (b) Range
 - (c) Standard deviation
 - (d) Variance

98. If each observation of a set is divided by 10, then the Standard Deviation of the new observation is:

- (a) $\frac{1^{\text{th}}}{10}$ of Standard Deviation of original observation.
- (b) $\frac{1^{\text{th}}}{100}$ of Standard Deviation of original observation.
- (c) 100 times of Standard Deviation of original observation.
- (d) 10 times of Standard Deviation of original observation
- 99. The Standard Deviation of the series 3, 6, 9, 12, 15 is:
 - (a) 4.24
 - (b) 6.36
 - (c) 4.12
 - (d) 3.28

100. The quartile deviation of the distribution of the following data is:

	х	2	3	4	5	6	
	F(x)	2	4	8 🚄			
~	0						

- (a) 0
- (b) 1
- (c) 1/4
- (d) 1/2
- 101. The quartile deviation of a normal distribution with Mean of 10 and Standard Deviation of 4 is:
 - (a) 2.70
 - (b) 3.20
 - (c) 0.675
 - (d) 6.75
- 102. 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:
 - (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
- 103. The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is:
 - (a) 11
 - (b) 6



- (c) 5
- (d) 9
- 104. In a moderately skewed distribution the values of mean and median are 12 and 8 respectively. The value of mode is:
 - (a) 0
 - (b) 12
 - (c) 15
 - (d) 30
- 105. Which of the following is positional average?
 - (a) Median
 - (b) GM
 - (c) HM
 - (d) AM
- 106. For a symmetric distribution:
 - (a) Mean = Median = Mode
 - (b) Mode = 3 Median 2 Mean
 - (c) Mode = 1/3 Median = 1/2 Mean
 - (d) None
- 107. For the distribution

х	f
1	6
2	9
3	10
4	14
5	12
6	8

The value of median is:

- (a) 3.5
- (b) 3
- (c) 4
- (d) 5

108. The QD of six numbers 15, 8, 36, 40, 38, 41 is equal to:

- (a) 12.5
- (b) 25
- (c) 13.5
- (d) 37
- 109. SD of first five consecutive natural numbers is:
 - (a) $\sqrt{10}$





- -
- (d) $\sqrt{2}$
- 110. If the profit of a company remain same for the last 10 months then the SD of profit of the company would be:
 - (a) Positive
 - (b) Negative
 - (c) Zero
 - (d) either (a) or (c)
- 111. Coefficient of Quartile Deviation is 1/4 then $Q_3/Q_1 = ?$
 - (a) 5/3
 - (b) 4/3
 - (c) 3/4
 - (d) 3/5
- 112. The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is :
 - (a) a + b + 2
 - (b) 6 a + b
 - (c) 4 + a b
 - (d) a + b + 4
- 113. If mean and variance are 5 and 3 respectively then relation between p and q is :
 - (a) p > q
 - (b) p < q
 - (c) p = q
 - (d) p is symmetric





ANSWERS KEY

1	С	2	d	3	b	4	С	5	b
6	а	7	С	8	а	9	b	10	С
11	а	12	d	13	b	14	а	15	С
16	С	17	С	18	С	19	С	20	а
21	С	22	d	23	С	24	d	25	С
26	а	27	а	28	С	29	d	30	b
31	а	32	С	33	d	34	С	35	а
36	С	37	d	38	а	39	а	40	а
41	b	42	а	43	b	44	d	45	d
46	а	47	b	48	а	49	С	50	b
51	а	52	С	53	а	54	b	55	С
56	b	57	d	58	b	59	С	60	а
61	b	62	С	63	а	64	d	65	С
66	С	67	b	≪ ⁶⁸ DI	IYC ^d DA	y 69	а	70	С
71	С	72	b 🦷	73DHY	а кљ ира	Y 74	а	75	b
76	С	77	а	78	а	79	d	80	b
81	С	82	b	83	b	84	С	85	С
86	С	87	С	88	b	89	а	90	d
91	С	92	d	93	С	94	а	95	а
96	а	97	а	98	а	99	а	100	b
101	а	102	С	103	b	104	а	105	а
106	а	107	С	108	С	109	d	110	С
111	а	112	а	113	b				



VIDHYODAY

VIDHYA KA UDA



- 1. The theory of compound probability states that for any two events A and B:
 - (a) $P(A \cap B) = P(A) \times P(B)$
 - (b) $P(A \cap B) = P(A) \times P(B/A)$
 - (c) $P(A \cup B) = P(A) \times P(B/A)$
 - (d) $P(A \cup B) = P(A) + P(B) P(A \cap B)$

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- 2. Three identical dice are rolled. The probability that the same number will appear on each of them is:
 - (a) 1/6

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- (b) 1/12
- (c) 1/36
- (d) 1
- 3. If 10 men, among whom are A and B, stand in a row, what is the probability that there will be exactly 3 men between A and B?
 - (a) 11/15
 - (b) 4/15
 - (c) 1/15
 - (d) 2/15
- 4. P(A) = 2/3; P(B) = 3/5; $P(A \cup B) = 5/6$. Find P(B/A)
 - (a) 11/20
 - (b) 13/20
 - (c) 13/18
 - (d) 15/20
- 5. The odds in favour of A solving a problem is 5:7 and Odds against B solving the same problem is 9:6. What is the probability that if both of them try, the problem will be solved?
 - (a) 117/180
 - (b) 181/200
 - (c) 147/180
 - (d) 119/180
- 6. 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:
 - (a) 0.30
 - (b) 0.70
 - (c) 0.25
 - (d) 0.20



- 7. Let P be a probability function on $S = \{X_1, X_2, X_3\}$ if $P(X_1) = 1/4$ and $P(X_3) = 1/3$ then $P(X_2)$ is equal to:
 - (a) 5/12
 - (b) 7/12
 - (c) 3/4
 - (d) none of these
- 8. A speaks truth in 60% of the cases and B in 90% of the cases. In what percentage of cases are they likely to contradict each other in stating the same fact:
 - (a) 36%
 - (b) 42%
 - (c) 54%
 - (d) none of these.
- 9. A candidate is selected for interview for 3 posts. For the first there are 3 candidates, for the second there are 4 and for the third there are 2. What are the chances of his getting at least one post?
 - (a) 3/4
 - (b) 2/3
 - (c) 1/10
 - (d) 1
- 10. A card is drawn from a pack of playing cards and then another card is drawn without the first being replaced. What is the probability of getting two kings:
 - (a) 7/52
 - (b) 1/221
 - (c) 3/221
 - (d) none of these.
- 11. In a non-leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is:
 - (a) $\frac{4}{7}$
 - (b) $\frac{2}{7}$
 - (c) $\frac{3}{7}$
 - (d) $\frac{1}{7}$
- 12. Thirty balls are serially numbered and placed in bag. Find chance that the first ball drawn is a multiple of 3 or 5
 - (a) 8/15
 - (b) 2/15
 - (c) 1/2
 - (d) 7/15
- 13. The odds in favour of event A in a trail is 3:1. In a three independent trails, the probability of non occurrence of the event A is
 - (a) 1/64





- (c) 1/27
- (d) 1/8

14. Two events A and B are such that they do not occur simultaneously then they are called ______ events.

- (a) Mutually exhaustive
- (b) Mutually Exclusive
- (c) Mutually Independent
- (d) Equally Likely
- 15. Ram is known to hit a target in 2 out of 3 shots whereas Shyam is known to hit the same target in 5 out of 11 shots. What is the probability that the target would be hit if they both try?
 - (a) $\frac{9}{11}$ (b) $\frac{6}{11}$ (c) $\frac{1}{33}$

(d)
$$\frac{3}{11}$$

16. If
$$P(A) = \frac{1}{2}$$
; $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$ then the value of $P(\overline{A} \cap \overline{B})$ is
(a) $\frac{5}{12}$
(b) $\frac{7}{12}$
(c) $\frac{1}{2}$

- (d) None of these
- 17. From the following probability distribution table, find E(x).



- 18. In a box carrying one dozen of oranges, one third has become bad. If 3 oranges are taken out from the box at random, what is the probability that at least one orange out of the three oranges picked up is good?
 - (a) $\frac{54}{55}$


- (b) $\frac{1}{55}$
- (c) $\frac{45}{10}$
- 50
- (d) None of these
- 19. A letter is taken out at random from the word RANGE and another is taken out from the word PAGE. The probability that they are the same letters is
 - (a) 1/20
 - (b) 3/20
 - (c) 3/5
 - (d) ¾
- 20. A bag contains 8 red and 5 white balls. Two successive draws of 3 balls are made without replacement. The probability that the first draw will produce 3 white ball and second 3 red balls is
 - (a) 6/255
 - (b) 5/548
 - (c) 7/429
 - (d) 3/233
- 21. Daily demand for calculators is having the following probability distribution:

Demand	1	2	3	4	5	6
Probability:	0.10	0.15	0.20	0.25	0.18	0.12

Determine the variance of the demand. VIDHYA KA UDAY

- (a) 2.54
- (b) 2.93
- (c) 2.22
- (d) 2.19
- 22. One Card is drawn from pack of 52, what is the probability that it is a king or a queen?
 - (a) 11/13
 - (b) 2/13
 - (c) 1/13
 - (d) None of these
- 23. If two events A and B are independent, the probability that both will occur is given by

(a) $P(A) \times P(B)$

- (b) P(A) + P(B)
- (c) $P(A) + P(B) P(A \cup B)$
- (d) $P(A) + P(B) P(A \cap B)$

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- 24. If p: q is the odds in favor of an event, then the probability of that event is -
 - (a) p/q
 - (b) $\frac{q}{p+q}$



- (c) $\frac{p}{p+q}$
- (d) none of these
- 25. If P (A) = 4/9; then the odd against the event 'A' is
 - (a) 4:9
 - (b) 4:5
 - (c) 5:4
 - (d) 4:14
- 26. If two letters are taken at random from the word HOME, what is the Probability that none of the letters would be vowels?
 - (a) 1/6
 - (b) 1/2
 - (c) 1/3
 - (d) ¼

27. In connection with random experiment, it is found that P(A) = 2/3, P(B) = 3/5 and P(AUB) = 5/6Find P(A'/B)

- (a) 13/18
- (b) ½
- (c) 13/20
- (d) 5/18

28. If a card is drawn at random from a pack of 52 cards, what is the chance of getting spade or an ace?

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- (a) 4/13
- (b) 5/13
- (c) 0.25
- (d) 0.20
- 29. The chance of getting a sum of 10 in a simple single throw is
 - (a) 10/36
 - (b) 1/12
 - (c) 1/36
 - (d) none of these
- 30. A random variable has the following probability distribution:

Х	2	3	5
Р	К	2K	2K

Find K

- (a) 1/3
- (b) 2/5
- (c) 1/5
- (d) 2/3

Page| 144



- 31. A number is selected at random from the set {1, 2,....,99}. The probability that it is divisible by 9 or 11 is
 - (a) 19/100
 - (b) 19/99
 - (c) 10/100
 - (d) 10/99

32. A random variable X follows Binomial Distribution With E(X) = 2 and V(x) = 1.2, then the value of n is

- (a) 8
- (b) 2
- (c) 5
- (d) none of these
- 33. There are two boxes containing 5 white and 6 blue balls and 3 white and 7 blue balls respectively. If one of the boxes is selected at random and a ball is drawn from it, then the probability that the ball is blue is
 - (a) 115/227
 - (b) 83/250
 - (c) 137/220
 - (d) 127/250
- 34. A box contains 5 white and 7 black balls. Two successive drawn of 3 balls are made (i) with replacement (ii) without replacement. The probability that the first draw would produce white balls and the second draw would produce black balls are respectively.
 - (a) 6/321 and 3/926
 - (b) 1/20 and 1/30
 - (c) 35/144 and 35/108
 - (d) 7/968 and 5/264

35. If P (A) = 1/2, P(B) = 1/3 and P(A \cap B) = 1/4, , what is P $\left(\frac{A'}{B'}\right)$?

- (a) 1/2
- (b) 7/8
- (c) 5/8
- (d) 2/3
- 36. X and y are stand in a line with 6 people. What is the probability that there are three persons between them ?
 - (a) 1/5
 - (b) 1/6
 - (c) 1/7
 - (d) 1/3
- 37. For two events A and B, $P(A \cup B) = P(A) + P(B)$ only when
 - (a) A and B are equally likely events
 - (b) A and B are exhaustive events
 - (c) A and B are mutually independent
 - (d) A and B are mutually exclusive.



- 38. Probability of getting a head when two unbiased coins are tossed simultaneously is
 - (a) 0.25
 - (b) 0.50
 - (c) 0.20
 - (d) 0.75
- 39. If x and y are random variables having expected values as 4.5 and 2.5 respectively, then the expected value of (x-y) is
 - (a) 2
 - (b) 7
 - (c) 6
 - (d) 0
- 40. Two unbiased dice are thrown. The expected value of sum of numbers on the upper side is
 - (a) 3.5
 - (b) 7
 - (c) 12
 - (d) 6
- 41. A bag contains 3 white and 5 black balls and second bag contains 4 white and 2 black balls. If one ball is taken from each bag, the probability that both balls are white is _____

- (a) 1/3
- (b) ¹/₄
- (d) None of these

42. Three identical dice are rolled. The probability that the same number will appear on each of them is:

- (a) 1/6
- (b) 1/12
- (c) 1/36
- (d) 1
- 43. The theory of compound probability states that for any two events A and B:
 - (a) $P(A \cap B) = P(A) X P(B)$
 - (b) $P(A \cap B) = P(A) X P(B/A)$
 - (c) $P(A u B) = P(A) \times P(B/A)$
 - (d) $P(A u B) = P(A) + P(B) P(A \cap B)$
- 44. In a non-leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is :
 - (a) 4/7
 - (b) 2/7
 - (c) 3/7
 - (d) 1/7
- 45. A card is drawn from a well shuffled pack of 52 cards. Let E, "a king or a queen is drawn" & E₂: "a queen or a jack is drawn", then:
 - (a) E_1 and E_2 are not independent



- (b) E_1 and E_2 are mutually exclusive
- (c) E_1 and E_2 are independent
- (d) None of these
- 46. The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?
 - (a) 0.74
 - (b) 0.71
 - (c) 0.59
 - (d) 0.67
- 47. Three events A, B and C are mutually exclusive, exhaustive and equally likely.

What is the probably of the complementary event of A?

- (a) 1/3
- (b) 2/3
- (c) 3/7
- (d) 1
- 48. What is the chance of picking a spade or an ace not of spade from a pack of 52cards?
 - (a) 4/13
 - (b) 2/13
 - (c) 3/26
 - (d) 3/18

49. Find the probability that a four-digit number comprising the digits 2, 5, 6 and 7 would be divisible by 4.

- (a) 1/4
- (b) 1/3
- (c) 1/2
- (d) 1
- 50. The probability that an Accountant's job applicant has a B. Com. Degree is 0.85, that he is a CA is 0.30 and that he is both B. Com. and CA is 0.25 out of 500 applicants, how many would be B. Com. or CA?
 - (a) 0.25
 - (b) 0.30
 - (c) 0.10
 - (d) 0.90
- 51. Rupesh is known to hit a target in 5 out of 9 shots whereas David is known to hit the same target in 6 out of 11 shots. What is the probability that the target would be hit once they both try?
 - (a) 79/99
 - (b) 10/13
 - (c) 14/26
 - (d) 13/18
- 52. In connection with a random experiment, it is found that

P(A) = 2/3, P(B) = 3/5 and P(AUB) = 5/6, find P(A/B)



- (c) 5/18
- (d) 13/18
- 53. In a business venture, a man can make a profit of ₹ 50,000 or incur a loss of ₹ 20,000. The probabilities of making profit or incurring loss, from the past experience, are known to be 0.75 and 0.25 respectively. What is his expected profit?
 - (a) ₹33,500
 - (b) ₹34,500
 - (c) ₹35,500
 - (d) ₹32,500
- 54. Which of the following pairs of events are mutually exclusive?
 - (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 B:
 - He is a voter of Delhi.
- 55. Which one holds correct for any two events A and B?
 - (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) $P(A-B) = P(B) + P(A \cap B)$
- 56. 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?

- (a) 0.625
- (b) 0.375
- (c) 0.500
- (d) 0.450
- 57. 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?
 - (a) 0.33
 - (b) 0.25
 - (c) 9.20
 - (d) 0.375
- 58. 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:



- (a) 0.2488
- (b) 0.4288
- (c) 0.8248
- (d) 0.8428
- 59. 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.
 - (a) 2/5
 - (b) 3/4
 - (c) 1/6
 - (d) 1/5
- 60. If P(A)=0.65 and P(B) = 0.15, then P(A) + P(B) is:
 - (a) 1.5
 - (b) 1.2
 - (c) 0.8
 - (d) 0.35
- 61. Two events A and B are such that they do not occur simultaneously then they are called ______ events.

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- (a) Mutually exhaustive
- (b) Mutually Exclusive
- (c) Mutually Independent
- (d) Equally Likely
- 62. If a coin is tossed 5 times then the probability of getting Tail and Head occurs alternatively is:
 - (a) $\frac{1}{8}$
 - (b) $\frac{1}{16}$
 - (c) $\frac{1}{32}$
 - (d) $\frac{1}{64}$
- 63. When 2 dice are thrown simultaneously then the probability of getting at least one 5 is:
 - (a) $\frac{11}{36}$
 - (b) $\frac{5}{36}$
 - (c) $\frac{8}{15}$
 - (d) $\frac{1}{7}$



- 64. The probability that a leap year has 53 Wednesday is:
 - (a) $\frac{2}{7}$ (b) $\frac{3}{5}$ (c) $\frac{1}{7}$ (d) $\frac{2}{3}$
- 65. Ram is known to hit a target in 2 out of 3 shots whereas Shyam is known to hit the same target in 5 out of 11 shots. What is the probability that the target would be hit if they both try?
 - (a) $\frac{9}{11}$
 - (b) $\frac{6}{11}$
 - (c) $\frac{10}{33}$
 - (d) $\frac{3}{11}$





1	b	2	С	3	d	4	b	5	а
6	b	7	а	8	b	9	а	10	b
11	С	12	d	13	а	14	b	15	d
16	а	17	С	18	а	19	b	20	С
21	С	22	b	23	а	24	С	25	С
26	а	27	d	28	а	29	b	30	d
31	b	32	С	33	С	34	d	35	С
36	С	37	d	38	b	39	b	40	b
41	b	42	С	43	b	44	С	45	а
46	а	47	b	48	а	49	b	50	d
51	а	52	d	53	d	54	d	55	b
56	С	57	а	58	а	59	С	60	b
61	b	62	b	63	а	64	а	65	а





CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 16 – THEORETICAL DISTRIBUTIONS

- 1. The Interval $(\mu 3\sigma, \mu + 3\sigma)$ covers
 - (a) 95% area of normal distribution
 - (b) 96% area of normal distribution
 - (c) 99% area of normal distribution
 - (d) All but not 0.27% area of a normal distribution
- 2. The overall percentage of failure in a certain examination is 0.30. What is the probability that out of a group of 6 candidates at least 4 passed the examination?
 - (a) 0.74
 - (b) 0.71
 - (c) 0.59
 - (d) 0.67
- 3. In a certain manufacturing process, 5% of the tools produced turn out to be defective. Find the probability that in a sample of 40 tools, at most 2 will be defective: [Given: $e^{-2} = 0.135$]
 - (a) 0.555
 - (b) 0.932
 - (c) 0.785
 - (d) 0.675
- 4. For binomial distribution E(x) = 2, V(x) = 4/3. Find the value of n.
 - (a) 3
 - (b) 4
 - (c) 5
 - (d) 6
- 5. If standard deviation of a poisson distribution is 2, then its Mode
 - (a) 2
 - (b) 4
 - (c) 3 and 4
 - (d) 5
- 6. The probability of a man hitting the target is 1/4. If he fires 7 times, the probability of hitting the target at least twice is :
 - $(a) \quad 1 \left(\frac{5}{2}\right) \left(\frac{3}{4}\right)^6$



- (b) $1 \frac{15}{2} \left(\frac{3}{4}\right)^6$
- (c) $1-\frac{5}{6}, 3^5$
- $(d) \quad 1 \left(\frac{3}{4}\right)^6$
- 7. If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs, 5 bulbs will be defective. [Given : $e^{-5} = 0.007$]
 - (a) 0.1823
 - (b) 0.1723
 - (c) 0.1623
 - (d) 0.1923
- 8. Examine the validity of the following : Mean and standard deviation of a binomial distribution are 10 and 4 respective:
 - (a) Not valid
 - (b) Valid
 - (c) Both [a] and [b]
 - (d) Neither [a] nor [b]
- 9. For a Poisson variate X, P(x=1) = P(x=2), what is the mean of x?
 - (a) 1
 - (b) 3/2
 - (c) 2
 - (d) 5/2
- 10. For a normal distribution, the first and third quartile are given to be 37 and 49, the mode of the distribution is.
 - (a) 37
 - (b) 49
 - (c) 43
 - (d) 45
- 11. If mean and variance are 5 and 3 respectively then relation between p and q is :
 - (a) P > q
 - (b) p < q
 - (c) p = q
 - (d) p is symmetric
- 12. What is the mean of X having the following density function?

$$f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{-(x-10)^2}{32}} \text{ for } -\infty < x < \infty$$
(a) 4



- (b) 10
- (c) 40
- (d) None of these
- 13. In a Poisson distribution if P(x=4) = P(x=5) then the parameter of Poisson distribution is:
 - (a) $\frac{4}{5}$
 - (b) $\frac{5}{4}$
 - Z
 - (c) 4
 - (d) 5
- 14. If the mean deviation of a normal variable is 16, what is its quartile deviation?
 - (a) 10
 - (b) 13.50
 - (c) 15
 - (d) 12.50
- 15. Find the variance of binomial distribution with n = 10, p = 0.3
 - (a) 2.1
 - (b) 3
 - (c) 7
 - (d) None of these
- 16. The quartile deviation of a normal distribution with mean 10 and standard deviation 4 is
 - (a) 0.675.
 - (b) 67.50.
 - (c) 2.70
 - (d) 3.20
- 17. When 'p' = 0.5, the
 - (a) Asymmetrical.
 - (b) Symmetrical.
 - (c) Both of above.
 - (d) None of above
- 18. In a normal distribution skewness is ____
 - (a) 0
 - (b) >3
 - (c) <3
 - (d) <1

19. If mean and standard deviation of a binomial distribution is 10 and 2 respectively; q will be ____

- (a) 1
- (b) 0.8
- (c) 0.6
- (d) 0.4



- 20. Which one is not a condition of Poisson model
 - (a) the probability of having failures in a small time interval is constant
 - (b) the probability of having success more than one in a small time interval is very small
 - (c) the probability of having success in this time interval is independent of time 't' as well as earlier success
 - (d) the probability of having success in a small time interval (t, t+td) is Kt for a positive constant k.
- 21. In _____ distribution, mean = variance.
 - (a) Normal
 - (b) Binomial
 - (c) Poisson
 - (d) none of these

22. The points of inflexion of the normal curve $f(t) = \frac{1}{4\sqrt{2\pi}}e^{\frac{-(t-10)^2}{32}}$ are

- (a) 6, 14
- (b) 5,15
- (c) 4,16
- (d) None of these
- 23. The mean of Poisson distribution is 4. The probability of two-successes in
 - (a) 8/e⁴
 - (b) 4/e⁴
 - (c) 16/e⁴
 - (d) 8/e²
- 24. The mean deviation abut median of standard normal variate is
 - (a) 0.675
 - (b) 0.675
 - (c) 0.80
 - (d) 0.80
- 25. If the Quartile Deviation of a normal distribution with mean 10 and SD 4 is
 - (a) 0.675
 - (b) 67.50
 - (c) 2.70
 - (d) 3.20
- 26. If the two Quartiles $N(\mu, \sigma^2)$ are 14.6 and 25.4 respectively. What is the standard deviation of the distribution?
 - (a) 9
 - (b) 6
 - (c) 10
 - (d) 8
- 27. When 'p' is large than 0.5, the Binomial Distribution is:
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- (a) Asymmetrical
- (b) Symmetrical
- (c) Both
- (d) None
- 28. A die is thrown 100 times if getting an even number is considered a success then the variance number of success.
 - (a) 50
 - (b) 25
 - (c) 10
 - (d) 100
- 29. If x is a binomial variable with parameters n and p, then x can assume
 - (a) any value between 0 and n.
 - (b) any value between 0 and n, both inclusive.
 - (c) any whole number between 0 and n, both inclusive.
 - (d) any number between 0 and infinity.
- 30. The probability density function of a normal variable x is given by

(a)
$$f(x) = \frac{1}{\sqrt{2\pi}} e^{\frac{1}{2} \left(\frac{x-\mu}{\sigma}\right)} for - \mu < x < \mu$$

(b)
$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{\frac{-(x-\mu)^2}{2\sigma^2}} \text{ for } 0 < x < \mu$$
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(c)
$$f(x) = \frac{1}{\sqrt{2\pi}} e^{\frac{(x-\mu)^2}{2\sigma^2}} \text{ for } -\mu < x < \mu$$

31. What is the first quartile of X having the following probability density function?

$$f(X) = \frac{1}{\sqrt{72\pi}} e^{-(x-10)^2/72} \qquad \text{for } -\mu < x < \mu$$

- (a) 4
- (b) 5
- (c) 5.95
- (d) 6.75
- 32. The average weekly food expenditure of a group of families has a normal distribution with mean \gtrless 1,800 and standard deviation \gtrless 300. What is the probability that out of 5 families belonging to this group, at least one family has weekly food expenditure in excess of \gtrless 2,100? Given f (1) = 0.84.
 - (a) 0.418
 - (b) 0.582
 - (c) 0.386
 - (d) 0.614
- 33. X is a binomial variable such that 2 P(X = 2) = P(X = 3) and mean of X is known to be 10/3. What would be the probability that X assumes at most the value 2?
 - (a) 16/81

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- (b) 17/81
- (c) 47/243
- (d) 46/243
- 34. For a standard normal distribution, the points of inflexion are given by
 - (a) m s and m + s.
 - (b) s and s.
 - (c) -1 and 1.
 - (d) 0 and 1.
- 35. The interval (m 3s, m + 3s) covers
 - (a) 95% area of a normal distribution.
 - (b) 96% area of a normal distribution.
 - (c) 99% area of a normal distribution.
 - (d) all but 0.27% area of a normal distribution
- 36. An example of bi-parametric continuous probability distribution.
 - (a) Binomial
 - (b) Poisson
 - (c) Normal
 - (d) (a) and (b)
- 37. A manufacturer, who produces medicine bottles, finds that 0.1 % of the bottles are defective. The bottles are packed in boxes containing 500 bottles. A drug manufacturer buys 100 boxes from the producer of bottles. Using Poisson distribution, find how many boxes will contains at least two defectives: [Given: $e^{-05} = 0.6065$]
 - (a) 7
 - (b) 13
 - (c) 9
 - (d) 11
- 38. The probability than a man aged 45 years will die within a year is 0.012. What is the probability that of 10 men, at Least 9 will reach their 46th birthday? [Given: $e^{-0.12} = 0.88692$]
 - (a) 0.0935
 - (b) 0.9934
 - (c) 0.9335
 - (d) 0.9555
- 39. Shape of Normal Distribution Curve:
 - (a) Depends on its parameters
 - (b) Does not depend on its parameters
 - (c) Either (a) or (b)
 - (d) Neither (a) nor (b)
- 40. The mean of Binomial distribution is 20 and Standard deviation is 4 then;
 - (a) n = 100, p = 1/5, q = 4/5
 - (b) n = 50, p = 2/5, q = 2/5



- (c) n = 100, p = 2/5, q = 4/5
- (d) n = 100, p = 1/5, q = 3/5
- 41. In a Poisson distribution if P(x = 4) = P(x = 5) then the parameter of Poisson distribution is :
 - (a) 45
 - (b) 54
 - (c) 4
 - (d) 5
- 42. Find the probability of a success for the binomial distribution satisfying the following relation 4 P (x = 4) = P (x = 2) and having the parameter n as six.
 - (a) 1/3
 - (b) 1/2
 - (c) 1/5
 - (d) 1/8
- 43. An experiment succeeds thrice as after it fails. If the experiment is repeated 5times, what is the probability of having no success at all?
 - (a) 1/1023
 - (b) 1/1024
 - (c) 1/1005
 - (d) 1/1008
- 44. If the two quartiles of a normal distribution are 47.30 and 52.70 respectively, what is the mode of the distribution? Also find the mean deviation about median of this distribution.
 - (a) 3.80
 - (b) 3.40
 - (c) 3.20
 - (d) 4.20
- 45. X follows normal distribution with mean as 50 and variance as 100. What is $P(x \ge 60)$? [Given $\phi(1) = 0.8413$]
 - (a) 0.20
 - (b) 0.40
 - (c) 0.16
 - (d) 0.30
- 46. Number of misprints per page of a thick book follows:
 - (a) Normal distribution
 - (b) Poisson distribution
 - (c) Binomial distribution
 - (d) Standard normal distribution

47. If for a Poisson variable X, f(2) = 3 f(4), what is the variance of X?

- (a) 2
- (b) 4



- (c) $\sqrt{2}$
- (d) 3
- 48. If the points of inflexion of a normal curve are 40 and 60 respectively, then its mean deviation is:
 - (a) 40
 - (b) 45
 - (c) 50
 - (d) 60
- 49. 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
 - (b) 180
 - (c) 201
 - (d) 190
- 50. 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].
 - (a) 10
 - (b) 9
 - (c) 8
 - (d) 7
- 51. If a random variable X follows Poisson distribution such that P(X = 1) = P(X = 2), then the mean of the distribution is:
 - (a) 2
 - (b) 1
 - (c) 0
 - (d) 1/2
- 52. What is the mean of X having the following density function?

$$f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{(x-10)^2}{32}} \text{ for } -\infty < x < \infty$$

- (a) 4
- (b) 10
- (c) 40
- (d) None of these
- 53. In a Poisson distribution if P(x=4) = P(x=5) then the parameter of Poisson distribution is:
 - (a) $\frac{4}{5}$ (b) $\frac{5}{4}$
 - 4
 - (c) 4 (d) 5



- 54. Area between -1.96 to +1.96 in a normal distribution is :
 - (a) 95.45%
 - (b) 95%
 - (c) 96%
 - (d) 99%
- 55. The probability that a student is not a swimmer is $\frac{1}{5}$, then the probability that out of five students four are swimmers is :
 - (a) $\left(\frac{4}{5}\right)^4 \left(\frac{1}{5}\right)$
 - (b) ${}^{5}C_{1}\left(\frac{1}{5}\right)^{4}\left(\frac{4}{5}\right)$
 - (c) ${}^{5}C_{4}\left(\frac{4}{5}\right)^{4}\left(\frac{1}{5}\right)$
 - (d) None of these





1	d	2	а	3	d	4	d	5	С
6	а	7	а	8	а	9	С	10	С
11	b	12	b	13	d	14	b	15	а
16	С	17	b	18	а	19	d	20	а
21	С	22	а	23	а	24	d	25	С
26	С	27	b	28	b	29	С	30	b
31	С	32	b	33	b	34	а	35	d
36	С	37	С	38	b	39	а	40	а
41	d	42	а	43	b	44	С	45	С
46	b	47	а	48	а	49	а	50	b
51	а	52	а	53	d	54	b	55	С





CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 17 – CORRELATION AND REGRESSION

- 1. 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 between them.
 - (a) 0.82
 - (b) 0.28
 - (c) 0.01
 - (d) 0.09
- 2. If r is the karl pearson's coefficient of correlation in a bivariate distribution the two regression lines are at right angles when _____
 - (a) $r = \pm 1$
 - (b) r = 0
 - (c) $r = \pm \infty$
 - (d) None
- 3. If r = 0.6 then the coefficient of non-determination is _____
 - (a) 0.4
 - (b) -0.6
 - (c) 0.36
 - (d) 0.64
- 4. The correlation coefficient between x and y is -1/2. The value of $b_{xy} = -1/8$. Find b_{yx} .
 - (a) -2
 - (b) -4
 - (c) 0
 - (d) 2
- 5. Out of the following which one affects the regression co-efficient:
 - (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
- 6. 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 co-relation between X and Y is 0.8. Find the Regression co-efficient of Y on X
 - (a) 0.78
 - (b) 1.28



- (c) 6.8
- (d) 0.32
- 7. If 4y 5x = 15 is the regression line of y on x and the coefficient of correlation between x and y is 0.75, what is the value of the regression coefficient of x on y?
 - (a) 0.45
 - (b) 0.9375
 - (c) 0.6
 - (d) none of these
- 8. If the regression line of y on x and of x on y are given by 2x+3y = -1 and 5x + 6y = -1 then the arithmetic means of x and y are given by.
 - (a) (1,-1)
 - (b) (-1,1)
 - (c) (-1, -1)
 - (d) (2,3)
- 9. If correlation co-efficient between x and y is 0.5 then byx=0.5 then bxy=?
 - (a) 1
 - (b) 0.5
 - (c) -0.5
 - (d) 0
- 10. For a positive and perfectly correlated random varaiables , one of the regression coefficeint is 1.4 and the standard devation of X is 2, the variance of Y is HYA KA UDAY
 - (a) 2.38
 - (b) 6.76
 - (c) 6.56
 - (d) 3.16
- 11. For n pairs of of observations, the coefficient of concurrent deviation is calculated as $\frac{1}{\sqrt{3}}$. If there are six concurrent deviations, n=
 - (a) 11
 - (b) 10
 - (c) 9
 - (d) 8
- 12. The correlation between two variables x and y is found to be 0.4. What is the correlation between 2x and (-y) ?
 - (a) 0.4
 - (b) -0.4
 - (c) 0.6
 - (d) None of these
- 13. Correlation Co-efficient is _____ of the units of measurements
 - (a) Dependent



- (b) Independent
- (c) both
- (d) none of these
- 14. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 256 respectively, what is the value of the correlation coefficient?
 - (a) 0.01
 - (b) 0.625
 - (c) 0.4
 - (d) 0.5
- 15. The coefficient of rank correlation of marks obtained by 10 students in English and Economics was found to be 0.5, it was later discovered that the difference in ranks in the two subjects obtained by one student was wrongly taken as 3 instead of 7. Find correct coefficient of rank correlation.
 - (a) 0.514
 - (b) 0.364
 - (c) 0.15
 - (d) 0.260

16. If r = 0.5, $\sum xy = 120$, $\sigma y = 8$, $\sum x^2 = 90$, then value of n is equal to _____

- (a) 5
- (b) 10
- (c) 15
- (d) 20

17. For a $(m \times n)$ classification of bivariate data, the maximum number of conditional distributions is

- (a) p
- (b) p+q
- (c) pq
- (d) p
- 18. Correlation Co-efficient is _____ of the units of measurements
 - (a) Independent
 - (b) Dependent
 - (c) Both
 - (d) none of these
- 19. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 256 respectively, what is the value of the correlation coefficient?
 - (a) 0.01
 - (b) 0.625
 - (c) 0.4
 - (d) 0.5
- 20. If two variables are uncorrelated then regression lines are
 - (a) Parallel



- (b) Perpendicular
- (c) Coincident
- (d) Inclined at 45^o
- 21. If one regression coefficient is greater than one, then other will be:
 - (a) More than one
 - (b) Equal to one
 - (c) Less than one
 - (d) Equal to minus one
- 22. The maximum value of correlation coefficient is
 - (a) 0
 - (b) 1
 - (c) -1
 - (d) none of these
- 23. Two regression lines are perpendicular each other of r =
 - (a) 0
 - (b) +1
 - (c) -1
 - (d) none of these
- 24. if r = 0.6, then the coefficient of non -determination is:
 - (a) 0.4
 - (b) -0.6
 - (c) 0.36
 - (d) 0.64
- 25. The sum of the squares of differences in ranks of marks obtained in Physics and Chemistry by 10 students in a test is 150, then the coefficient of rank correlation by:
 - (a) 0.849
 - (b) 0.091
 - (c) 0.909
 - (d) None of these
- 26. If one regression coefficient is ____ unity, the other must be ____Unity
 - (a) more than, more than
 - (b) less than, less than
 - (c) more than, less than
 - (d) Positive, Negative
- 27. For lines of regression 4x-2y=3 and 2x-3y=5, find bxy
 - (a) 1/8
 - (b) 1/2
 - (c) 1/12
 - (d) none of these



- 28. if the coefficient of correlation between x and y is 0.5, the covariance is 16 and if the standard deviation of x is 4 then Standard deviation of y is:
 - (a) 4
 - (b) 8
 - (c) 16
 - (d) 64
- 29. What is spurious correlation?
 - (a) It is a bad relation between two variables.
 - (b) It is very low correlation between two variables.
 - (c) It is the correlation between two variables having no causal relation.
 - (d) It is a negative correlation.
- 30. The two lines of regression become identical when
 - (a) r = 1
 - (b) r = -1
 - (c) r = 0
 - (d) (a) or (b).
- 31. The two lines of regression are given by 8x + 10y = 25 and 16x + 5y = 12 respectively. If the variance of x is 25, what is the standard deviation of y?
 - (a) 16
 - (b) 8
 - (c) 64
 - (d) 4
- 32. If the regression line of y on x and of x on y are given by 2x + 3y = -1 and 5x + 6y = -1 then the arithmetic means of x and y are given by
 - (a) (1, -1)
 - (b) (-1, 1)
 - (c) (-1, -1)
 - (d) (2,3)
- 33. If y = 3x + 4 is the regression line of y on x and the arithmetic mean of x is 1, what is the arithmetic mean of y?
 - (a) 1
 - (b) -1
 - (c) 7
 - (d) none of these
- 34. If the rank correlation co-efficient between marks in Management and Mathematics for a group of students is 0.6 and the sum of the squares of the difference in rank is 66. Then what is the number of students in the group ?
 - (a) 9
 - (b) 10
 - (c) 11
 - (d) 12





- 35. Correlation coefficient between X and Y will be negative when
 - (a) X and Y are decreasing
 - (b) X is increasing, Y is decreasing
 - (c) X and Y are increasing
 - (d) None of these

36. Two variables X and Y are related as 4x + 3y = 7 then correlation between x and y is _____

- (a) Perfect positive
- (b) Perfect negative
- (c) Zero
- (d) None of these
- 37. Given the regression equations as 3x + y = 13 and 2x + 5y = 20. Find regression equation of y on x.
 - (a) 3x + y = 13
 - (b) 2x + Y = 20
 - (c) 3x + 5y = 13
 - (d) 2x + 5y = 20
- 38. Regression coefficient are _____
 - (a) dependent of change of origin and of scale.
 - (b) independent of both change of origin and of scale.
 - (c) dependent of change of origin but not of scale.
 - (d) independent of change of origin but not of scale
- 39. If one of regression coefficient is ____ unity, the other must be ____ unity.
 - (a) more than, more than
 - (b) Less than, Less than
 - (c) more than, less than
 - (d) Positive, Negative
- 40. What is spurious correlation?
 - (a) It is a bad relation between two variables.
 - (b) It is very low correlation between two variables.
 - (c) It is the correlation between two variables having no causal relation.
 - (d) It is a negative correlation.
- 41. When r = 1, all the points in a scatter diagram would lie
 - (a) On a straight line directed from lower left to upper right
 - (b) On a straight line directed from upper left to lower right
 - (c) On a straight line
 - (d) Both (a) and (b).
- 42. If the coefficient of correlation between two variables is 0.8 then the percentage of variation unaccounted for is
 - (a) 70%
 - (b) 30%



- (c) 51%
- (d) 36%
- 43. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 256 respectively, what is the value of the correlation coefficient?
 - (a) 0.01
 - (b) 0.625
 - (c) 0.4
 - (d) 0.5
- 44. If the relation between x and u is 3x + 4u + 7 = 0 and the correlation coefficient between x and y is -0.6, then what is the correlation coefficient between u and y?
 - (a) -0.6
 - (b) 0.8
 - (c) 0.6
 - (d) -0.8
- 45. If r = 0.6 then coefficient of non-determination is:
 - (a) 0.4
 - (b) -0.6
 - (c) 0.36
 - (d) 0.64

46. Which one of the following statement is correct regarding limit of the two regression coefficients?

- (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.
- 47. In case of "Insurance companies' profits" and "The number of claims they have to pay", there exists a:
 - (a) Positive correlation
 - (b) Negative correlation
 - (c) No correlation
 - (d) It cannot be predicted
- 48. 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:
 - (a) 0.85
 - (b) 0.875
 - (c) 0.90
 - (d) 0.925
- 49. Which of the following statement is correct?
 - (a) If one of the regression coefficients is greater than unity (1), the other must 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.

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- 50. If the two lines of regression are x + 2y 5 = 0 and 2x + 3y 8 = 0, then the regression line of y on x is:
 - (a) x + 2y 5 = 0
 - (b) x + 2y = 0
 - (c) 2x + 3y 8 = 0
 - $(d) \quad 2x + 3y = 0$

51. If the two regression lines are 3X = Y and 8Y = 6X then the value of correlation coefficient is:

- (a) -0.5
- (b) 0.5
- (c) 0.75
- (d) -0.80
- 52. AM of regression coefficient is:
 - (a) Equal to r
 - (b) Greater than or equal to r
 - (c) half of r
 - (d) None of these
- 53. 9 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 $\frac{\sigma^2}{\sigma_x^2} = \underline{\qquad}$.
 - (a) 3
 - (b) 2
 - (c) 4
 - (d) None of these
- 54. The coviraiance between two variables is
 - (a) Strictly positive
 - (b) Strictly negative
 - (c) Always zero
 - (d) Either positive or negative or zero
- 55. When two lines of regression become identical when
 - (a) r = 1
 - (b) r = -1
 - (c) r = 0
 - (d) (a) or (b)





ANSWERS KEY

1	b	2	b	3	d	4	а	5	b
6	b	7	а	8	а	9	b	10	а
11	b	12	b	13	b	14	b	15	d
16	b	17	С	18	а	19	b	20	b
21	С	22	b	23	а	24	d	25	b
26	С	27	b	28	b	29	С	30	d
31	а	32	а	33	а	34	b	35	b
36	b	37	d	38	d	39	С	40	С
41	а	42	d	43	b	44	С	45	d
46	d	47	b	48	d	49	а	50	а
51	b	52	b	53	С	54	d	55	d





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CAFOUNDATION CHAPTER-WISE MODEL TEST PAPERS CHAPTER 18 – INDEX NUMBERS

- 1. The number of test of Adequacy in Index numbers:
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
- 2. Circular Test is satisfied by:
 - (a) Paasche's Index Number
 - (b) The simple geometric mean of price relatives and the weighted aggregative with fixed weights
 - (c) Laspeyre's Index Number
 - (d) None of these
- 3. In the data group Bowley's and Laspeyre's index number is as follows. Bowley's index number = 150, Laspeyre's index number = 180 then Paasche's index number is:
 - (a) 120 **VIDHYA KA UDAY**
 - (b) 30
 - (c) 165
 - (d) None of these
- 4. If Fisher's index = 150 and Paasche's Index = 144, then Laspeyre's index is _____
 - (a) 147
 - (b) 156.25
 - (c) 104.17
 - (d) 138
- 5. Monthly salary of an employee was ₹ 10,000 in the year 2010 and it was increased to ₹ 20,000 in the year 2023 while the consumer price index number is 240 in year 2023 with the base year 2010, what should be his salary in comparison of consumer price index in the year 2023 ?
 - (a) 2,000
 - (b) 16,000
 - (c) 24,000
 - (d) None of these
- 6. Consumer price index is commonly known as
 - (a) Chain Based index
 - (b) Ideal index
 - (c) Wholesale price index
 - (d) Cost of living index.

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- 7. Consumer Price Index Number goes up from 100 to 200 and salary of a worker is also raised from 300 to 500, then Real Wage is
 - (a) 300
 - (b) 250
 - (c) 600
 - (d) 350
- 8. The Circular Test is known as:
 - (a) $P_{01} \times P_{12} \times P_{20} = 1$
 - (b) $P_{12} \times P_{01} \times P_{20} = 1$
 - (c) $P_{20} \times P_{12} \times P_{01} = 1$
 - (d) $P_{02} \times P_{21} \times P_{12} = 1$
- 9. In the data group Bowley's and Laspyre's index number is as follows. Bowley's index number =150, Laspyre's index number = 180 then Paasche's index number is
 - (a) 120
 - (b) 30
 - (c) 165
 - (d) None of these
- 10. Laspyres index number is aweighted aggregate method by taking ______ as weights.
 - (a) Quantity consumed in the base year
 - (b) Quantity consumed in the current year IDHYODAY
 - (c) Value of items consumed in base year VIDHYA KA UDAY
 - (d) Value of items consumed in the current year
- 11. Find the Paasche's Index number for prices from the following

Commodity	Base year	Curre	ent year	
	Price	Commodity	Price	Commodity
А	5	25	6	30
В	3	8	4	10
С	2	10	3	8
D	10	4	3	45

- (a) 151.21
- (b) 165.28
- (c) 157.26
- (d) 160.21
- 12. _____ is an extension of time reversal test.
 - (a) Factor reversal test
 - (b) Circular test
 - (c) Unit test
 - (d) None of these



- 13. Fisher's method for construction of Index Numbers uses_____
 - (a) Geometric Mean
 - (b) Harmonic Mean.
 - (c) Median
 - (d) HM

14. The consumer price index in 1990 increases by 80- per cent as compared to the base 1980. A person in 1980 getting ₹ 60,000 per annum should now get

- (a) ₹ 1,08,000 per annum
- (b) ₹82,000 per annum
- (c) ₹ 64,000 per annum
- (d) None of these
- 15. The _____ is satisfied when $P_{ab} \times P_{bc} \times P_{ca} = 1$
 - (a) Time reversal test
 - (b) Factor reversal test
 - (c) Circular Test
 - (d) none of these
- 16. The index number of prices at a place in 2008 is 355 with 2003 as base. This means -
 - (a) There has been on the average a 255% increase in prices.
 - (b) There has been on the average a 355% increase in price.
 - (c) There has been on the average a 250% increase in price.
 - (d) None of these.
- 17. The number of tests of Adequacy
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5

18. If $\sum p_0 Q_0 = 1360$, $\sum p_n Q_0 = 1900$, then the Laspyres Index number is

- (a) 71
- (b) 139.70
- (c) 175
- (d) 180
- 19. Fisher index number is _____ of Laspyres and Paasches Index Number
 - (a) A.M
 - (b) G.M
 - (c) H.M
 - (d) None of these
- 20. Circular test is satisfied by which of the following index?
 - (a) Laspeyres index



- (b) Paasche's index
- (c) Fisher's index
- (d) Simple geometric mean of price relatives
- 21. $\Sigma P_0 Q_0 = 1360$, $\Sigma P_n Q_0 = 2000$, then the Laspyres Index number is:
 - (a) 71
 - (b) 147.50
 - (c) 175
 - (d) none of these
- 22. If Laspyres Index number is 250 and Paasches Index number is 160, then Fishers Index number is:
 - (a) 200
 - (b) 400
 - 250 (c)
 - (d) 196
- 23. 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:
 - 200 (a)
 - 50 (b)
 - (c) 400
 - 25 (d)
- When the product of price index and the quantity index is equal to the corresponding value index 24. then the test that holds is
 - (a) Unit Test
 - **Time Reversal Test** (b)
 - (c) Factor Reversal Test
 - none holds (d)
- 25. The formula for conversion to current value
 - $Deflated value = \frac{PriceIndex of the current year}{previous value}$
 - (a)
 - $Deflated value = \frac{Current Value}{PriceIndex of the current year}$ (b)
 - $Deflated value = \frac{Price Index of the previous year}{previous value}$ (c)
 - $Deflated value = \frac{PriceIndex of the previous year}{previous value}$ (d)
- If the index number of prices at a place in 2018 is 280 with 2008 as base year, then the prices have 26. increased on average by
 - 280% (a)
 - 180% (b)
 - (c) 380%
 - (d) None of these.



- 27. In 1980, the net monthly income of the employee was ₹ 800/- p. m. The consumer price index number was 160 in 1980. It rises to 200 in 1984. If he has to be rightly compensated. The additional D. A. to be paid to the employee is
 - (a) ₹175/-
 - (b) ₹185/-
 - (c) ₹200/-
 - (d) ₹125.
- 28. Consumer price index number goes up from 110 to 200 and the Salary of a worker is also raised from ₹ 325 to ₹ 500. Therefore, in real terms, to maintain his previous standard of living he should get an additional amount of :
 - (a) ₹85
 - (b) ₹90.91
 - (c) ₹ 98.25
 - (d) None of these.
- 29. The prices of a commodity in the year 1975 and 1980 were 25 and 30 respectively taking 1980 as base year the price relative is :
 - (a) 109.78
 - (b) 110.25
 - (c) 113.25
 - (d) 83.33
- 30. Circular test is satisfied by which index number?
 - (a) Laspeyre's
 - (b) Paasche's
 - (c) Fisher's
 - (d) Simple Geometric mean of price Relatives and the aggregative with Fixed weights.
- 31. Which of the following statement is true ?
 - (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 means constructing one continuous series from two different indices on the basis of common base.

- 32. Monthly salary of an employee was ₹ 10,000 in the year 2000 and it was increased to ₹ 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) 2,000
 - (b) 16,000
 - (c) 24,000
 - (d) None of these
- 33. Purchasing power of money is _____
 - (a) Reciprocal of price index number
 - (b) Equal to price index number



- (c) Unequal to price index number
- (d) None of these
- 34. In the year 2010 the monthly salary was ₹ 24,000. The consumer price index number 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 to be paid to him
 - (a) ₹14,400
 - (b) ₹38,400
 - (c) ₹7,200
 - (d) None of these
- 35. Fisher's index number satisfies the _____ tests
 - (a) Time Reversal Test
 - (b) Factor Reversal Test
 - (c) both
 - (d) none
- 36. Fisher's ideal index number is:
 - (a) The Median of Laspeyre's and Paasche's index numbers
 - (b) The Arithmetic Mean of Laspeyre's and Paasche's index numbers
 - (c) The Geometric Mean of Laspeyre's and Paasche's index numbers
 - (d) None of these
- 37. The Cost-of-Living Index (CLI) is always VIDHYODAY
 - (a) Weighted Index
 - (b) Price Index
 - (c) Quantity Index
 - (d) None of these
- 38. The Paasches and Fishers index numbers are 169 and 156 respectively, then Laspyre's Index number is:
 - (a) 144
 - (b) 152
 - (c) 148
 - (d) 151.5
- 39. The whole sale price index number or agricultural commodities in a given region at a given date is 280. The percentage increase in prices of agricultural commodities over the base year is:
 - (a) 380
 - (b) 280
 - (c) 180
 - (d) 80
- 40. The value index is equal to
 - (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.

VIDHYODAY - CA | CS | CUET | IPM | 11th | 12th Call - 8181815951



- 41. 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-
 - (a) Gain by ₹ 50
 - (b) Gain by ₹75
 - (c) Loss by $\gtrless 90$
 - (d) Loss by ₹50
- 42. 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?
 - (a) Unit test
 - (b) Time Reversal test
 - (c) Circular test
 - (d) Factor Reversal test
- 43. 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
- 44. Time Reversal test is satisfied by:
 - (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
- 45. Which is not satisfied by Fisher's Ideal Index Number?
 - (a) Factor Reversal Test
 - (b) Time Reversal Test
 - (c) Circular Test
 - (d) None of the above
- 46. The prices and quantities of 3 commodities in base and current years are as follows:

P ₀	P ₁	Q_0	Q_1
12	14	10	20
10	8	20	30
8	10	30	10

The Laspyre's Price Index Number is:

- (a) 118.13
- (b) 107.14
- (c) 120.10
- (d) None of these
- 47. The cost of living index number in year 2015 and 2018 were 97.5 and 115 respectively. The salary of a



worker in 2015 was 19500. How much additional salary was required for him in 2018 to maintain the same standard of living as in 2015?

- (a) 3000
- (b) 4000
- (c) 3500
- (d) 4500
- 48. The number of test adequacy is
 - (a) 2
 - (b) 5
 - (c) 3
 - (d) 4
- 49. Laspyers method and Paasches method do not satisfy
 - (a) Unit Test
 - (b) Time Reversal Test
 - (c) Factor Reversal Test
 - (d) b and c




1	С	2	b	3	а	4	b	5	С
6	d	7	С	8	а	9	а	10	а
11	С	12	b	13	а	14	а	15	С
16	а	17	С	18	b	19	b	20	d
21	b	22	а	23	b	24	С	25	b
26	b	27	С	28	b	29	d	30	d
31	d	32	С	33	а	34	а	35	С
36	С	37	а	38	а	39	С	40	С
41	d	42	С	43	b	44	С	45	С
46	b	47	С	48	d	49	d		





