1. If an amount is compounded annually so that it tripled itself in 4 years, then the annual rate of interest is (Given that $3^{1/4} = 1.316$)

(A) 13.6%

(B) 31.1%

(C) 31.6%

(D) 11.3%

2. Bank B provides loans at 15% per annum compound interest. If Mr. XYZ borrowed ₹ 3,200 for 2 years from Bank B, then how much interest must Mr. XYZ pay to his bank?

(A) ₹ 400

(B) ₹ 960

(C) ₹ 4,232

(D) ₹ 1,032

3. If a sum double itself in 8 years, then in how many years it will become four times, assuming that the simple interest is calculated.

(A) 16 years

(B) 12 years

(C) 24 years

(D) 20 years

4. Mr. XYZ is investing a certain amount at the end of each month in his account. He is supposed to get interest 12% per annum compounded monthly. If the future value of this annuity after the 10th payment is ₹ 50,000, then amount invested by Mr. XYZ in each month will be? Given $(1.01)^{10} = 1.104622$

(A) ₹ 4,779

(B) ₹ 4,735

(C) ₹ 4,375

(D) ₹ 4,977

5. If the arithmetic mean of two numbers is 13 and the geometric mean is 12, then the difference between the two numbers is:

(A) 8

(B) 10

(C) 12

(D) 14

Handwritten working:

$$\frac{a+b}{2} = 13 \rightarrow a+b = 26$$

$$\sqrt{ab} = 12 \qquad ab = 144$$

$$a-b = \sqrt{(a+b)^2 - 4ab}$$

$$\sqrt{(26)^2 - 4 \times 144}$$

$$= 10$$

6. The third term of a geometric progression is 5. Then the product of first five terms is

(A) 5^5

(B) 5^6

(C) 5^7

(D) 5^9

Handwritten working:

$$ar^2 = 5$$

$$a \cdot ar \cdot ar^2 \cdot ar^3 \cdot ar^4$$

$$a^5 \cdot r^{10}$$

$$(ar^2)^5$$

$$= (5)^5$$

7. The sum of infinity of the series $\frac{1}{2} + \frac{1}{6} + \frac{1}{18} + \frac{1}{54} + \ldots$ is:

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

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

(C) $\frac{3}{4}$

(D) 1

Handwritten working:

$$r = \frac{1/6}{1/2} = 1/3$$

$$\frac{a}{1-r}$$

$$\frac{1/2}{1 - 1/3}$$

$$\frac{\frac{1}{2}}{2/3} = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$$

8. Find the odd number in the following series: 7, 11, 13, 15, 19, 23 ...

   (A) 11   (B) 13

   (C) 15   (D) 19

9. A boy is facing East. Turning to the right, he goes 20 m, then turning to the left he goes 20 m and turning to the right, he goes 20 m, then again turning to the right, he goes to 40 m and then again he goes 40 m to the right. In which direction is he from his original position?

   (A) North   (B) West

   (C) South   (D) East

10. Which of the followings is odd one?

   (A) CEHL   (B) KMPT

   (C) OQTX   (D) NPSV

11. Mr. ABC started walking down a road in the evening while facing the sun. After walking for a distance, he turned to his left, and then he turned to his right. In which direction is he facing now?
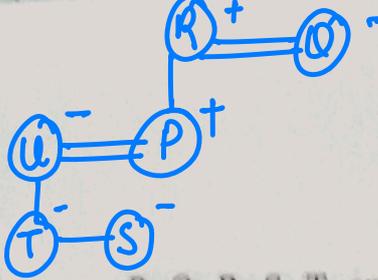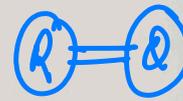
   (A) East   (B) West

   (C) North   (D) South

12. P, Q, R, S, T, and U are six members of a family. R is spouse of Q. U is mother of T and S is daughter of U. P's daughter is T and R's son is P. There are two couples in the family. Which of the following is correct?

(A) T is granddaughter of Q

(B) Q is grandfather of T

(C) R is mother of P

(D) Q is uncle of S

13. During the tabular presentation of data, _____ is the entire upper part of the table which includes columns and sub-column numbers, unit(s) of the measurement along with caption.

(A) Stub

(B) Box-head

(C) Attribute

(D) Body

14. A market researcher divides a city into 5 regions, where variation within region is little and there is a maximum variation between regions and randomly selects 100 households from each region for a survey. This sampling method is known as:

(A) Cluster Sampling

(B) Quota Sampling

(C) Stratified Sampling

(D) Systematic Sampling

15. Frequency density of a class interval may be defined as the ratio of

(A) the frequency of that class length to the corresponding class interval

(B) the frequency of that class interval to the corresponding class length

(C) the frequency of that class frequency to the corresponding class length

(D) the frequency of that class frequency to the corresponding cumulative class frequency

O

16. If mean of 5 observations $x+1$, $x+3$, $x+5$, $x+7$ and $x+9$ is given as 125, then the value of x will be.

$$\frac{x+1+x+3+x+5+x+7+x+9}{5} = 125$$

(A) 110

(B) 111

$$5x + 25 = 625$$

(C) 115
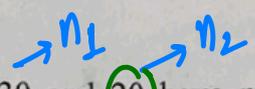
(D) 120

$$5x = 600$$

$$x = 120$$

17. If two samples of size 30 and 20 have means as 55 and 60 and standard deviation 5 and 6 respectively then what would be the standard deviation of combined sample of size 50?

$$d_1 = 57 - 55 = 2$$
$$d_2 = 57 - 60 = -3$$

$$\sigma_{12} = \sqrt{\frac{30 \times 4 + 20 \times 9 + 30 \times 25 + 20 \times 36}{50}}$$

(A) 5.95

(B) 5.90

(C) 5.85

(D) 5.80

18. If the relationship between x and y is given by $5x - 3y = 15$ and if range of x is given as 24 then the range of y is given by:

$$\left(\frac{5}{3}\right)x - \frac{15}{3} = y$$

(A) 25

(B) 20

(C) 30

(D) 40

$$R_y = \frac{6}{3} \times 24$$

$$R_y = 40$$

19. The two variables 'x' and 'y' are related by $2x - 3y - 3 = 0$. If the mode of 'x' is 15, then the mode of 'y' is :

$$2 \times 15 - 3y - 3 = 0$$

(A) 30

(B) 3

(C) 15

(D) 9

$$\text{Mode}\, y = 9$$

O

(8)

MRD

[handwritten: P(D) = 0·20]

20. A quality control inspector finds that 20% of light bulbs are defective. If a batch of 5 light bulbs is tested, what is the probability that exactly 1 bulb is defective?

(A) 0.4096

(B) 0.8026

[handwritten: $^5C_1(0.20)^1(0.80)^4$ ⇒ 0.4096]

(C) 0.2746

(D) 0.1296

21. If $b_{yx} = 1.6$ and $b_{xy} = 0.4$, then r_{xy} will be:

[handwritten: $r = \sqrt{1.6 \times 0.4} = 0.8$]

(A) 0.4

(B) 0.8

(C) 0.64

(D) −0.8

22. If the slope of the regression line is calculated to be 3.5 and the intercept 14 then the value of Y when X is 6 is

[handwritten: $y = a + bx$; $y = 14 + 3.5x$; $y = 14 + 3.5 \times 6 = 35$]

(A) 35

(B) 85

(C) 15

(D) 75

23. For the variables x and y, the regression equations are given as

$x + 2y - 5 = 0$ *[handwritten: x on y → x = −2y + 5, $b_{xy} = -2$ → $b_{yx} = -\frac{1}{2}$]*

$2x + 3y - 8 = 0$, *[handwritten: y on x, $y = -\frac{2}{3}x + \frac{8}{3}$, $b_{yx} = -\frac{2}{3}$, $b_{xy} = -\frac{3}{2}$]*

and the arithmetic means of x and y are 1 and 2 respectively. Compute the correlation coefficient between x and y.

[handwritten: $r = -\sqrt{-\frac{1}{2} \times -\frac{3}{2}} = -0.87$]

(A) −0.87

(B) 0

(C) 0.87

(D) 1

MRD

O

24. One year ago, the ratio of ages (in years) of A and B was 5 : 4. The ratio of their ages, 4 years from now, will be 6 : 5. What will be the age of A (in years) after 10 years from now?

    (A) 36

    (B) 18

    (C) 19

    (D) 26

25. Find the value of $\left(\dfrac{x^b}{x^c}\right)^{(b+c-a)} \times \left(\dfrac{x^c}{x^a}\right)^{(c+a-b)} \times \left(\dfrac{x^a}{x^b}\right)^{(a+b-c)}$.

    (A) x^{abc}

    (B) 1

    (C) 0

    (D) -1

26. If $3x \times 6^{\log x^5} = 192$, then the value of x is

    (A) 8

    (B) 4

    (C) 2

    (D) $2\sqrt{2}$

27. In India, an examination is conducted in two sessions. In the first session the ratio of boys to girls among 455 students is 8 : 5. If 50 new girls are admitted in the second session, how many new boys must be admitted so that the ratio of girls to boys becomes 3 : 4?

    (A) 20

    (B) 30

    (C) 40

    (D) 50

28. If α and β are the roots of the equation $2x^2 - 3x + 1 = 0$, then the equation whose roots are $1/\alpha$ and $1/\beta$ is:

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

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

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

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

29. Mr. Ravi allocates a corpus of ₹ 50,000 into a term deposit account which accrues interest at a nominal annual rate of 10%, compounded on a quarterly basis. What will be the effective annual rate of interest?

    (A) 10 %   (B) 10.25 %

    (C) 10.38 %   (D) 10.50 %

30. Shiva invested an amount of ₹ 12,000 at the rate of 10% pa simple interest and another amount at the rate of 20% pa simple interest. The total interest earned at the end of the year on total amount invested became 14% pa. Find the total amount invested.

    (A) ₹ 18,000   (B) ₹ 20,000

    (C) ₹ 24,000   (D) ₹ 26,000

31. Ms. Rina buys a refrigerator worth ₹ 25,000. She pays ₹ 5,000 upfront and agrees to settle the remaining amount through five equal annual installments. The unpaid balance carries an interest of 18% per annum, compounded annually. Calculate the approximate value of each annual installment. Given $P(5, 0.18) = 3.12717$.

    (A) ₹ 6,350   (B) ₹ 6,395

    (C) ₹ 6,410   (D) ₹ 4,430

32. A sum of money lent at compound interest for 2 years at 20% pa would fetch ₹ 482/- more if the interest was payable half yearly then if it was payable annually. What is the value of sum deposited?

    (A) ₹ 10,000   (B) ₹ 15,000

    (C) ₹ 17,500   (D) ₹ 20,000

33. A GP series consists of $2n$ terms. If the sum of the terms occupying the odd places is S_1 and that of the terms in even places is S_2, the common ratio of the progression is?

(A) n

(B) $2S_1$

(C) $\dfrac{S_2}{S_1}$

(D) $\dfrac{S_1}{S_2}$

34. Let $\mathbb{R}$ is the set of real numbers such that the function $f:\mathbb{R} \to \mathbb{R}$ and $g:\mathbb{R} \to \mathbb{R}$ are defined by $f(x)=x^2+3x-1$ and $g(x)=2x+3$ then $f \circ g(x)$ is:

(A) $4x^2+6x+1$

(B) $4x^2+18x+17$

(C) $4x^2-18x+17$

(D) $4x^2-6x+1$

35. If $f(x)=1+\dfrac{1}{x}$ then the value of $f\left(f\left(\dfrac{1}{x}\right)\right)$ is

(A) $\dfrac{x-2}{x+1}$

(B) $\dfrac{x+2}{x+1}$

(C) 2

(D) -1

36. The function $f(x)=\dfrac{x^2-25}{x-5}$ is undefined at $x=5$, what value must be assigned to $f(5)$ if $f(x)$ is to be continuous at $x=5$?

(A) 0

(B) 1

(C) 10

(D) 100

37. Mr. Q walks 20 km north, then walks 14 km south, and then walks 8 km east. How far is he from his starting point?

(A) 6 km   (B) 8 km

(C) 10 km   (D) 12 km
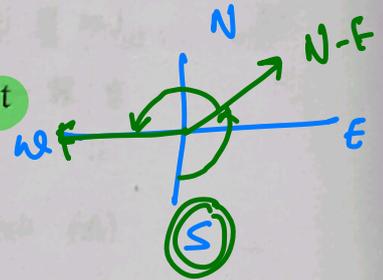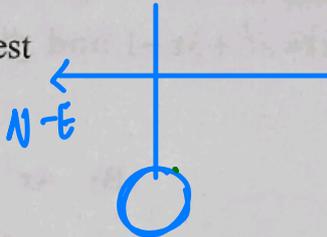
38. If west is replaced with north-east then south will be replaced by which of the following direction?

(A) South-west   (B) North-west

(C) West   (D) East

39. A man drives 10 km towards north; from there he turns towards right and drive 3 Km. then he takes right turn and drives 6 km. How far and in which direction is he with reference to starting point?

(A) 5 km North-east   (B) 3 km North-east

(C) 5 km South-east   (D) 3 km South-east

40. 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 B is sitting?
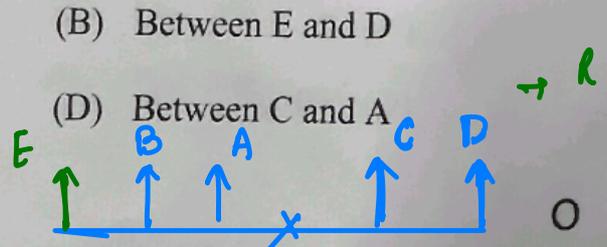
(A) Between E and C   (B) Between E and D

(C) Between E and A   (D) Between C and A

41. On _____, the frequency, starting from a rather low value, gradually reaches the maximum value, somewhere near the central part and then gradually decreases to reach its lowest value at the other extremity.

    (A) Bell-shaped curve

    (B) U-shaped curve

    (C) J-shaped curve

    (D) Mixed curve

42. In the Stratified Sampling, When the strata-variances differ significantly among themselves, we take recourse to "Neyman's allocation" where:

    (A) Sample size is proportional to the population size

    (B) Sample size is proportional to the sample SD

    (C) Sample size is proportional to the sample variance

    (D) Population size is proportional to the sample variance

43. According to the _____, if a sample of fairly large size is drawn from the population under discussion at random, then on an average the sample would possess the characteristics of that population.

    (A) Principle of Inertia

    (B) Principle of Optimization

    (C) Law of Statistical Regularity

    (D) Principle of Validity

44. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

(A) $\frac{9}{20}$

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

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

(D) $\frac{8}{15}$

45. If two dice are rolled, then the probability of getting a greater number on the first die than the one on the second, given that the sum should be equal to 7 is

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

(B) $\frac{1}{3}$

(C) $\frac{1}{6}$

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

46. If two variables 'x' and 'y' are related to $3x + 4y - 7 = 0$ and mean & mean deviation about mean of 'x' are 1.2 and 0.4 respectively then the coefficient of mean deviation of 'y' about its mean is?

(A) 34.3

(B) 32.3

(C) 35.3

(D) 36.3

47. If in a class, 50% of the student study mathematics and science and 70% of the student study mathematics, then the probability of a student studying science given that he/she is already studying mathematics is

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

(B) $\frac{6}{7}$

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

48. The coefficient of correlation between 'x' and 'y' is 0.6. If 'u' & 'v' variables are defined as $2u - x + 3 = 0$ and $3 + y - 2 = 0$ then the coefficient of correlation between 'u' & 'v' is?

   (A) 0.6

   (B) −0.6

   (C) 0.58

   (D) −0.58

49. Which index number method uses current year quantities as weights?

   (A) Fisher's Ideal Price Index

   (B) Marshall Edge Worth Index Number

   (C) Laspeyres' Index

   (D) Paasche's index

50. The coefficient of rank correlation in a beauty contest of 10 candidates by two judges A & B was found to be 0.5. If it was later discovered that the difference in rank of one candidate was wrongly taken as 3 instead of 7. The corrected coefficient of rank correlation is?

   (A) 0.26

   (B) 0.32

   (C) 0.49

   (D) 0.93

Fisher's Ideal Price Index is defined as the _____ of the Laspeyres' Index and the Paasche's Index.

   (A) Harmonic Mean

   (B) Geometric Mean

   (C) Arithmetic Mean

   (D) Simple Mean

52. The value of is $\sqrt{5+\sqrt{5+\sqrt{5+\sqrt{5}+\cdots\cdots\cdots\infty}}}$ is

(handwritten:) $x = \sqrt{5+x}$
$x^2 = 5+x$
$x^2 - x - 5 = 0$
$\dfrac{+1 \pm \sqrt{1-4(-5)}}{2}$
$\dfrac{1+\sqrt{21}}{2}$

(A) 0

(B) $\dfrac{1+\sqrt{21}}{2}$

(C) 1

(D) $\dfrac{-1+\sqrt{21}}{2}$

53. Solve the system $\dfrac{5-2x}{4} \le \dfrac{x}{8} - 5$ and $\dfrac{x+4}{3} \le 6$.

(handwritten:)
$\dfrac{5-2x}{4} \le \dfrac{x-40}{8\,2}$
$10 - 4x \le x - 40$
$50 \le 5x$
$10 \le x$
$x \ge 10$

$x + 4 \le 18$
$x \le 14$

$10 \le x \le 14$

(A) $x \le 10$

(B) $x \ge 8$

(C) $10 \le x \le 14$

(D) $x \ge 14$

54. If $2x+3y=34$ and $\dfrac{x+y}{y}=\dfrac{13}{8}$, find the value of $7x+5y$.

(handwritten:)
$8x + 8y = 13y$
$8x - 5y = 0$
$8x + 12y = 136$
$-17y = -136$, $y = 8$
$x = 5$

$7x + 5y$
$= 35 + 40$

(A) 45

(B) 53

(C) 75

(D) 35

55. The solution of the inequality $\dfrac{5-2x}{3} \le \dfrac{x}{6} - 5$ is

(handwritten:)
$\dfrac{5-2x}{6} \le \dfrac{x-30}{6\,2}$
$10 - 4x \le x - 30$
$40 \le 5x$
$8 \le x$
$x \ge 8$

(A) $x \ge 8$

(B) $x \le 8$

(C) $x \ge 6$

(D) $x \le 6$

O

56. A sinking fund is created for replacement of machine at the end of 20 years. Its present cost is ₹ 8,00,000. After 20 years cost of new machine would be ₹ 10,00,000. How much provision need to be made out of the profit each year provided sinking fund investments can earn interest at the rate of 7% pa? The scrap value of the machine at the end of 20 years would be ₹ 2,00,000. Given $1.07^{20} = 3.8697$.

800,000 Req.

(A) ₹ 15,514

(B) ₹ 13,514

(C) ₹ 19,514

(D) ₹ 17,514

57. The net asset value (NAV) of a Mutual Fund is calculated at the end of the financial year. For the last five years following values are computed.

Year	2021	2022	2023	2024	2025
NAV	100	115	150	120	200

Calculate the Compounded Annual Growth Rate of NAV.

$$\left[\left(\frac{200}{100}\right)^{1/4} - 1\right] \times 100$$

(A) 16.92%

(B) 18.92%

(C) 20.92%

(D) 22.92%

58. An investor intends to purchase a three years bond at a price of ₹ 907.125 having nominal interest rate of 10%. What is the par value of the bond if it matures at par and the investor requires returns at the rate of 14%?

(A) ₹ 1,200

(B) ₹ 1,100

(C) ₹ 900

(D) ₹ 1,000

100 100 100
                1000

VOB = 907.128
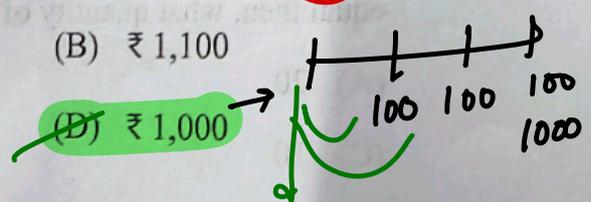
59. If $A = \{2, 3\}$, $B = \{4, 5\}$ and $C = \{5, 6\}$ then the $A \times (B \cap C)$ is

(A) $\{(3, 5), (2, 6)\}$

(B) $\{(2, 4), (5, 3)\}$

(C) $\{(5, 2), (5, 3)\}$

(D) $\{(2, 5), (3, 5)\}$

60. The cost function of a company is given by

$$C(x) = 600x - 10x^2 + \frac{x^3}{2}$$

where x denotes the output. Find the level of output (in nearest integer) at which average cost is minimum.

(A) $x = 8$

(B) $x = 9$

(C) $x = 10$

(D) $x = 11$

61. If $f(x) = 3e^{x^2}$, then $f'(x) - 2xf(x) + \frac{1}{6}f(0) - f'(0)$ is equal to

(A) 0

(B) −0.5

(C) 0.5

(D) −1

62. The cost of production of an item is given as $C = 50x - 5x^2 + \frac{x^3}{6}$ where 'x' is number of items to be produced. If the average cost and marginal cost are equal then, what quantity of items should be produced?

(A) 20

(B) 15

(C) 10

(D) 5

63. Six friends P, Q, R, S, T and U are sitting around the hexagonal table each at one corner and are facing the centre of the hexagonal. P is second to the left of U. Q is neighbour of R and S. T is second to the left of S. Which one is sitting opposite to S?

(A) R

(B) P

(C) Q

(D) T
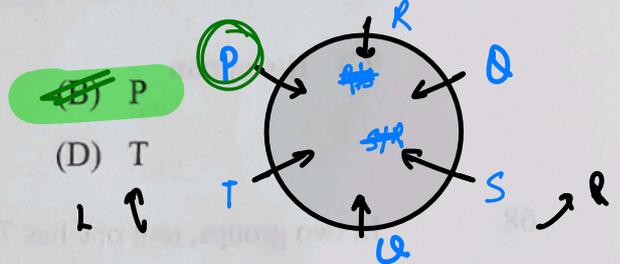
64. Five friends P, Q, R, S, and T are sitting in row facing north. S is between T & Q and Q is to the immediate left of R. P is to be the immediate left of the T. Who is sitting at extreme left end?
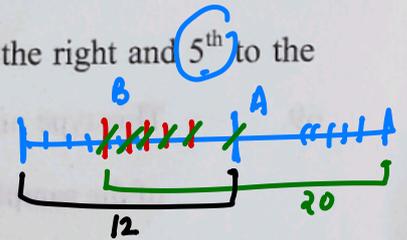
(A) S

(B) R

(C) Q

(D) P
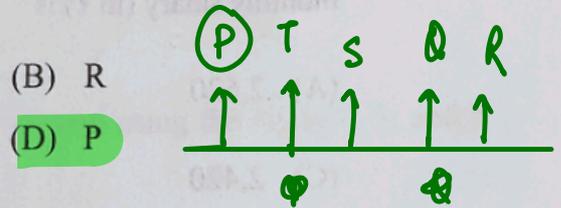
65. In line, A sits 12th from the left. B is sitting 20th from the right and 5th to the left of A. How many people are sitting in the line?

(A) 25

(B) 26

(C) 27

(D) 28

$$12 + 20 - 6 = 26$$

66. Eight persons P, Q, R, S, T, U, V, and W are sitting around a circular table facing the centre. Two persons sit between Q & W. V sits immediate left of W. Three persons sit between S & T. R sits immediate left of T. U is not the neighbour of P. One person sits between P & Q. Which of the following statement is correct?

(A) Q sits to the immediate right of U

(B) One person sits between P & S

(C) One person sits between S & U

(D) Three persons sit between Q & R
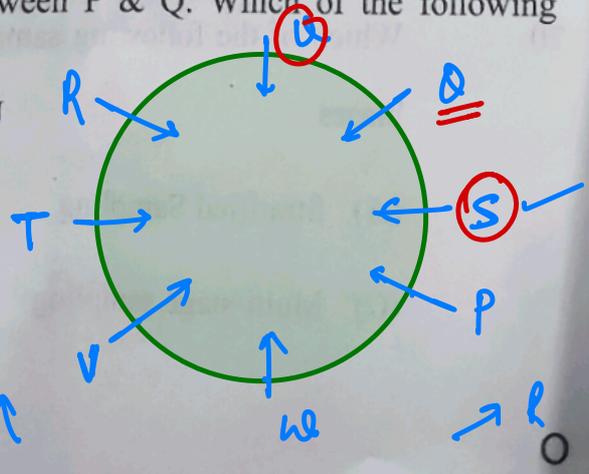
67. The diagrammatic representation of the cumulative frequency distribution is:

(A) Frequency polygon

(B) Ogive

(C) Histogram

(D) Line curve

68. In two groups, unit one has 700 people with monthly salary of ₹ 2,500, unit two has 650 with salary of ₹2,750 then approximate combined arithmetic mean with monthly salary (in ₹) is

(A) 2,620

(B) 2,520

(C) 2,420

(D) 2,720

$$\bar{X}_{1,2} = \frac{700 \times 2500 + 650 \times 2750}{1350}$$

$$= 2620$$

69. This type of sampling method depends entirely on the discretion or judgement of the sampler

(A) Systematic Sampling

(B) Simple Random Sampling

(C) Purposive Sampling

(D) Quota Sampling

70. Which of the following sampling methods is completely free from sampler's biases

(A) Stratified Sampling

(B) Random sampling

(C) Multi-stage sampling

(D) Systematic sampling

71. The odds in favour of Mr. A to solve a problem is 5:7 and odds against to Mr. B to solve the same problem is 9:6. What is the probability that if both of them try, the problem will be solved?

(A) $\frac{117}{180}$

(B) $\frac{127}{180}$

(C) $\frac{137}{180}$

(D) $\frac{147}{180}$

Handwritten annotations: $P(A) = 5/12$; $P(B) = 6/15$; $\frac{5}{12} + \frac{6}{15} - \frac{5}{12} \times \frac{6}{15}$; $\frac{75 + 72 - 30}{180} = \frac{117}{180}$

72. Find the probability that a 3-digit number formed using the digits 1, 3, and 5 (without repetition), is divisible by 3?

(A) 1

(B) 0

(C) $\frac{1}{3}$

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

Handwritten annotations: $\frac{5}{3} \cdot \frac{5}{2} \times \frac{5}{1} \to 6$; 135 = ✓ ; 153 = ✓ ; 315 = ✓ ; 351 = ✓ ; 513 ✓ ; 531 = ✓ ; $\frac{6}{6}$ ①

73. Ms. Radhika appeared in interview at three different companies. In the first company there are 5 candidates, in second company there are 12 candidates and in third company there are 15 candidates. What is probability that Ms. Radhika would be selected?

(A) $\frac{231}{375}$

(B) $\frac{321}{375}$

(C) $\frac{154}{225}$

(D) $\frac{71}{225}$

Handwritten annotations: $P(1) = 4/5$; $P(2) = 11/12$; $P(3) = 14/15$; $1 - \left[\text{कोई नहीं चुने} \right]$; $1 - \left[\frac{4}{5} \times \frac{11}{12} \times \frac{14}{15} \right]$; $1 - \frac{616}{900} = \frac{284}{900} = 0.3155$; 0.3155

74. The property of an index number that allows shifting of the base year without referring each time to the original base is tested by which of the following?

   (A) Time Reversal Test

   (B) Factor Reversal Test

   (C) Circular Test $P_{01} \times P_{10} = 1$

   (D) Unit Test

75. Which of the following index does not satisfy the time reversal test?

   (A) Edge worth Marshall's index

   (B) Paasche's index

   (C) Fisher's Ideal index

   (D) Bowely's Index

76. The test of shift ability of the base is called?

   (A) Unit test

   (B) Factor reversal test

   (C) Time reversal test

   (D) Circular test

O

77. The common region represented by inequalities: $2x + y \geq 3$, $x + y \geq 12$, $3x + 2y \leq 34$, $x \geq 0$ and $y \geq 0$ is

(A) Unbounded

(B) Feasible unbounded

(C) Infeasible bounded

(D) Feasible bounded

78. The present value (in nearest ₹) of an annuity of ₹ 90,000 for 13 years at 5.5% compounded annually is _____. (Given $1.005^{13} = 2.0058$)

(A) 9,99,996

(B) 8,20,548

(C) 9,69,996

(D) 7,22,536

79. If ₹ 80,000 grows to ₹ x in 3 years at compound interest compounded annually at 8% rate of interest per annum, then the value of x is:

(A) ₹1,00,776.96

(B) ₹1,02,985.98

(C) ₹1,03,680.64

(D) ₹99,850.50

80. The value of compound interest (in nearest ₹) if ₹30,00,000 is deposited in a bank for 1 year at the rate of 16% per annum compounded quarterly is:

(A) 5,07,575

(B) 5,78,360

(C) 5,09,576

(D) 5,72,540

81. The total numbers greater than 2000 that can be formed with the digits 1, 2, 3, 4, 5 and no digits being repeated in any number are:

   (A) 216

   (B) 96

   (C) 864

   (D) 468

82. How many 3-digit number can be formed from the digits 2, 3, 5, 6, 7 and 9 which are divisible by 5 and none of the digit is repeated?

   (A) 18

   (B) 20

   (C) 22

   (D) 24

83. If $^nC_{r-1} = 28$, $^nC_r = 56$, $^nC_{r+1} = 70$, then the value of n and r are

   (A) $n = 8, r = 3$

   (B) $n = 8, r = 4$

   (C) $n = 9, r = 4$

   (D) $n = 9, r = 3$

84. In a meeting, 5 analysts, 2 consultants, and 3 managers are to be seated in a row. If members of the same profession must sit together, in how many ways can they be seated?

   (A) 11,232

   (B) 8,640

   (C) 6,912

   (D) 9,504

85. Evaluate the integral $\int\limits_{0}^{1}(2x^2 - x^3)dx$.

   (A) $\dfrac{1}{3}$

   (B) $\dfrac{4}{3}$

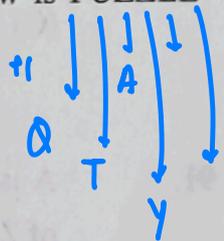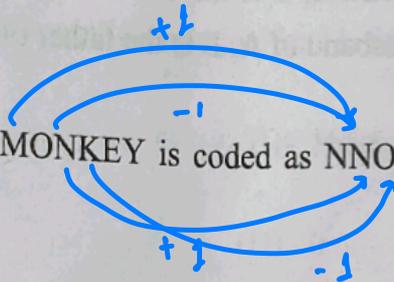   (C) $\dfrac{7}{12}$

   (D) $\dfrac{5}{12}$

86. If in a certain language, MONKEY is coded as NNOJFX, how is PUZZLE coded in that language?

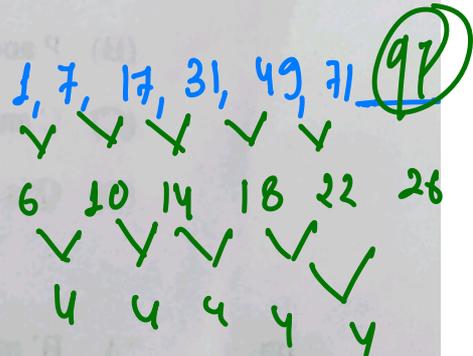   (A) QTBXMD

   (B) QTAYMD

   (C) QTAWME

   (D) PTAYMD

87. The next term of the series 1, 7, 17, 31, 49, 71, ---- is
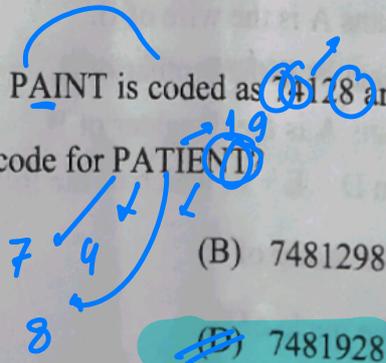
   (A) 97

   (B) 153

   (C) 89

   (D) 111

88. If in a certain code language PAINT is coded as 74128 and ACCEPT is coded as 455978, what will be the code for PATIENT?

   (A) 7419828
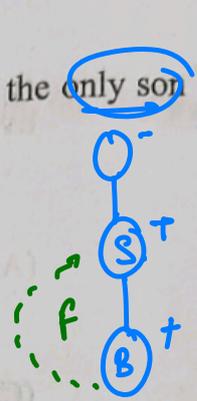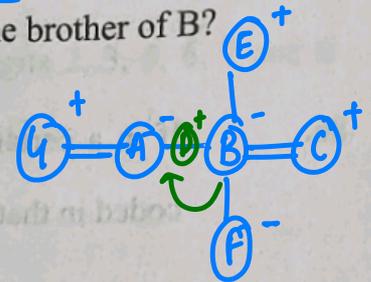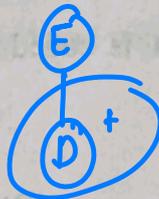
   (B) 7481298

   (C) 7491828

   (D) 7481928

89. Pointing to a photograph of a boy Suresh said, "He is the son of the only son of my mother." How is Suresh related to that boy?

(A) Brother
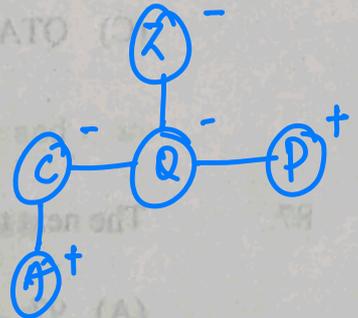
(B) Grandfather

(C) Father

(D) Son

90. A and B are sisters, B is the wife of C, D is the son of E, F is the daughter of B, G is the husband of A, E is the father of B. Who is the brother of B?
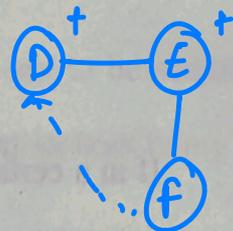
(A) C

(B) D

(C) E

(D) F

91. A is the son of C; C and Q are sisters; Z is the mother of Q and P is the son of Z. Which of the following statements is true?

(A) P is the maternal uncle of A

(B) P and A are cousins

(C) C and P are sisters

(D) Q is maternal grandfather of A

92. 'A + B' means A is the father of B.

'A – B' means A is the wife of B.

'A × B' means A is the brother of B.

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

If it is given D × E + F, which of the following is true?

(A) D is the father of F

(B) D is the grandfather of F

(C) D is the uncle of F

(D) D is the brother-in-law of F

Mode = 3med - 2mean

3×25 - 2×21

= (33)

93. If mean is 21 and median is 25 then value of mode is

(A) 33

(B) 25

(C) 31

(D) 21

94. Calculate the coefficient of quartile deviation for 11, 55, 65, 22, 33, 98, 88,

(A) 6

$\dfrac{88-22}{88+22} \times 100$

(B) 166.6

(C) 60

(D) 0.6

11, 22, 33, 55, 65, 88, 98

$Q_1 = 2^{nd}$ Oh = 22

$Q_3 = 3 \times 2^{nd}$ try = 88

6th

95. If arithmetic mean of two numbers is 64 and harmonic mean is 16 then geometric mean is

$G.M = \sqrt{64 \times 16}$

$= (32)$

(A) 64

(B) 16

(C) 32

(D) 8

96. In continuous frequency distribution, the median of the data is 32. If each observation is increased by 7, then the new median will be:

(A) 39

(B) 32

(C) 25

(D) 35

O

$$\frac{e^{-M}(M)^1}{1} = 0.3$$

$$\frac{e^{-M}(M)^2}{2} = 0.2 \quad \textcircled{1}$$

97. If X is a Poisson variate such that $P(X=1)=0.3$, $P(X=2)=0.2$, then $P(X=0)=$

(A) $e^{\frac{4}{3}}$

(B) $e^{\frac{-1}{3}}$

(D) $e^{\frac{-2}{3}}$

~~(C)~~ $e^{\frac{-4}{3}}$

98. If the first quartile (Q_1) and third quartile (Q_3) of a normal distribution are 22 and 28, what is the median of the distribution?

(A) 22

~~(B) 25~~

(C) 30

(D) 28

$$Q_2 = \frac{22+28}{2} = \textcircled{25}$$

$\downarrow$

Md

99. For a binomial distribution, if the mean is 10 and the standard deviation is 3, find n. (number of trials)

(A) 30

(B) 90

(C) 15

(D) 100

$nP = 16$

$n \cdot \frac{1}{10} = 10$

$\boxed{n = 100}$

$nP = 10$

$\sqrt{npq} = 3$

$npq = 9$

$10q = 9 \quad q = \frac{9}{10}$

$p = \frac{1}{10}$

100. If a binomial distribution has $n=25$ and $p=0.2$, what is its mean?

~~(A) 5~~

(B) 4

(C) 25

(D) 2

np

$=$

O