SECTION –A

MATHS **(40 MARKS)**

1. Show that $\left[\dfrac{x^a}{x^{-b}}\right]^{a^2-ab+b^2} \times \left[\dfrac{x^b}{x^{-c}}\right]^{b^2-bc+c^2} \times \left[\dfrac{x^c}{x^{-a}}\right]^{c^2-ca+a^2}$ is reduces to

   (a) 1

   (b) $x^{-2(a^2+b^2+c^2)}$

   (c) $x^{2(a^3+b^3+c^3)}$

   (d) $x^{-2(a^3+b^3+c^3)}$

2. If $(5.678)^x = (0.5678)^y = 10^z$ then

   (a) $\dfrac{1}{x} - \dfrac{1}{y} + \dfrac{1}{z} = 1$

   (b) $\dfrac{1}{x} - \dfrac{1}{y} - \dfrac{1}{z} = 0$

   (c) $\dfrac{1}{x} - \dfrac{1}{y} + \dfrac{1}{z} = -1$

   (d) None

3. Solving equation $\sqrt{y^2 + 4y - 21} + \sqrt{y^2 - y - 6} = \sqrt{6y^2 - 5y - 39}$ following roots are obtained

   (a) 2, 3, 5/3

   (b) 2, 3, -5/3

   (c) -2, -3, 5/3

   (d) -2, -3, -5/3

4. Solving x+2y+2z= 0, 3x -4y+z= 0 and x^2 +3y^2 +z^2 =11 following roots are obtained

   (a) 2, 1, -2 and -2, -1, 2

   (b) 2, 1, 2 and -2, -1, -2

   (c) only 2, 1, -2

   (d) only -2, -1, 2

5. Johnson left Rs. 1,00,000 with the direction that it should be divided in such a way that his minor sons Tom , Dick and Harry aged 9,12 and 15 years should each receive equally after attaining the age 25 years. The rate of interest being 3.5% , how much each son receive after getting 25 years old?

   (a) 50,000

   (b) 51,994

   (c) 52,000

   (d) 51,946

6. A sinking fund is created for redeeming debentures worth Rs. 5 lakhs at the end of 25 years. How much provision needs to be made out of profits each year provided sinking fund investments can earn interest at 4% p.a.?

   (a) 12,006

   (b) 12,040

   (c) 12,039

   (d) 12,035

7. The number of arrangements that can be made with the word 'ASSASSINATION' is

   (a) $13! \div [3! \times 4! \times (2!)^2]$

   (b) $13! \div [3! \times 4! \times 2!]$

   (c) $13!$

   (d) None

8. If $^{n+3}P_6 \div {^{n+2}P_4} = 14$ the value of n is

   (a) 8

   (b) 4

   (c) 5

   (d) 2

9. In a ration shop queue 2 boys, 2 girls, and 2 men are standing in such a way that the boys the girls and the men are together each. The total number of ways of arranging the queue is _____.

   (a) 42

   (b) 48

   (c) 24

   (d) None

10. Divide 12.50 into five parts in A.P. such that the first part and the last part are in the ratio of 2:3

    (a) 2, 2.25, 2.5, 2.75, 3

    (b) –2, –2.25, –2.5, –2.75, –3

    (c) 4, 4.5, 5, 5.5, 6

    (d) –4, –4.5, –5, –5.5, –6

11. The sum of n terms of the series $1.3^2 + 4.4^2 + 7.5^2 + 10.6^2 + \ldots$ is

    (a) $(n/12)(n+1)(9n^2+49n+44)-8n$

    (b) $(n/12)(n+1)(9n^2+49n+44)+8n$

    (c) $(n/6)(2n+1)(9n^2+49n+44)-8n$

    (d) None

12. If the first term of a G.P. exceeds the second term by 2 and the sum to infinity is 50 the series is _____.

    (a) 10, 8, 32/5 …

    (b) 10, 8, 5/2 …

    (c) 10, 10/3, 10/9 ….

    (d) None

13. If A = {a, b, c, d} list the element of power set P (a)

    (a) {Ø {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) All the above elements are in P (a)

14. Let P = (1, 2, x), Q = (a x y), R = (x, y, z) then the set Q × R is

    (a) {(1, a) (1, x) (1, y); (2, a) (2, x) (2, y); (x, a) (x, x) (x, y)}

    (b) {(1, x); (1, y); (1, z); (2, x); (2, y); (2, z); (x, x) (x, y) (x, z)}

    (c) {(a, x) (a, y) (a, z); (x, x) (x, y) (x, z); (y, x) (y, y) (y, z)}

    (d) {(1, x) (1, y) (2, x) (2, y) (x, x) (x, y)}

15. In a market survey you have obtained the following data which you like to examine regarding its correctness:

Did not use the brand	April	May	June	April& May	May &June	April &June	April,May& June
Percentage answering 'Yes'	59	62	62	35	33	31	22

(a) Inconsistent since $59 + 62 + 62 - 35 - 33 - 31 + 22 \neq 100$

(b) Consistent

(c) cannot determine due to data insufficiency

(d) None

16. If $y=(x+a)(x+b)(x+c)(x+d)/(x-a)(x-b)(x-c)(x-d)$ then the value of dy/dx is

(a) $(x+a)^{-1}+(x+b)^{-1}+(x+c)^{-1}+(x+d)^{-1} -(x-a)^{-1} -(x-b)^{-1}-(x-c)^{-1} -(x-d)^{-1}$

(b) $(x+a)^{-1} -(x+b)^{-1}+(x+c)^{-1} -(x+d)^{-1}+(x-a)^{-1} -(x-b)^{-1}+(x-c)^{-1} -(x-d)^{-1}$

(c) $(x-a)^{-1}+(x-b)^{-1}+(x-c)^{-1}+(x-d)^{-1} -(x+a)^{-1} -(x+b)^{-1} -(x+c)^{-1} -(x+d)^{-1}$

(d) None

17. If $y=x^{\log(\log x)}$ then the value of [dy/dx]/y is given by

(a) $x^{-1}[1+\log(\log x)]$

(b) $x^{-1}[1-\log(\log x)]$

(c) $x[1+\log(\log x)]$

(d) $x[1-\log(\log x)]$

18. Integrate w.r.t x, $(x+1)(5x^2+8x-4)^{-1/2}$

(a) $(1/5)(5x^2+8x-4)^{1/2}+[1/(5\sqrt{5})]\log[5\{x+4/5+(x^2+8x/5-4/5)^{1/2} (1/6)\}] +c$

(b) $(1/5)(5x^2+8x-4)^{1/2}+[1/(5\sqrt{5})]\log[5\{x+4/5+(x^2+8x/5-4/5)^{-1/2} (1/6)\}]+c$

(c) $(1/5)(5x^2+8x-4)^{1/2}+[1/(5\sqrt{5})]\log[5\{x+4/5+(x^2+8x/5-4/5)^{1/2} \}]+c$

(d) None

19. The square root of $x + \sqrt{x^2 - y^2}$ is given by

(a) $\frac{1}{\sqrt{2}}\left[\sqrt{x+y} + \sqrt{x-y}\right]$

(b) $\frac{1}{2}\left[\sqrt{x+y} - \sqrt{x-y}\right]$

(c) $\left[\sqrt{x+y} + \sqrt{x-y}\right]$

(d) $\left[\sqrt{x+y} - \sqrt{x-y}\right]$

20. If $(4.8)^x (0.48)^y = 1,000$ then the value of $\frac{1}{x} - \frac{1}{y}$ is

(a) 3

(b) –3

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

(d) $-\frac{1}{3}$

21. If α, β are the roots of equation $x^2 - 5x + 6 = 0$ and $\alpha > \beta$ then the equation with roots $(\alpha\beta + \alpha + \beta)$ and $(\alpha\beta - \alpha - \beta)$ is

(a) $x^2 - 12x + 11 = 0$

(b) $2x^2 - 6x + 12 = 0$

(c) $x^2 - 12x + 12 = 0$

(d) None

22. Solving equations $(2x + 3)(2x + 5)(x - 1)(x - 2) = 30$ the roots available are

(a) $0, \frac{1}{2}, -\frac{11}{4}, \frac{9}{4}$

(b) $0, -\frac{1}{2}, \frac{-1 \pm \sqrt{105}}{4}$

(c) $0, -\frac{1}{2}, -\frac{11}{4}, -\frac{9}{4}$

(d) None

23. A committee is to be formed of 2 teachers and 3 students out of 10 teachers and 20 students. The numbers of ways in which this can be done is _____.

(a) $^{10}C_2 \times {}^{20}C_3$

(b) $^{9}C_1 \times {}^{20}C_3$

(c) $^{10}C_2 \times {}^{19}C_3$

(d) None

24. In how many ways can the word 'STRANGE' be arranged so that the vowels occupy only the odd places?

(a) $^{5}P_5$

(b) $^{5}P_5 \times {}^{4}P_4$

(c) $^{5}P_5 \times {}^{4}P_2$

(d) None

25. The sum of n terms of the series 0.5 + 0.55 + 0.555 + ………. is

    (a) $(5/9)n-(5/81)(1-10^{-n})$

    (b) $(5/9)n+(5/81)(1-10^{-n})$

    (c) $(5/9)n+(5/81)(1+10^{-n})$

    (d) None

26. The five numbers in A.P. with the sum 20 and product of the first and last 15 are
    _____.

    (a) 3, 4, 5, 6, 7

    (b) 3, 3.5, 4, 4.5, 5

    (c) −3, −4, −5, −6, −7

    (d) −3, −3.5, −4, −4.5, −5

27. Integrate w.r.t x, $x(x-1)^{-1}(2x+1)^{-1}$

    (a) $(1/3)[\log(x-1)+(1/2)\log(2x+1)]+k$

    (b) $(1/3)[\log(x-1)+\log(2x+1)]+k$

    (c) $(1/3)[\log(x-1)-(1/2)\log(2x+1)]+k$

    (d) None

28. If the third term of a G.P. is the square of the first and the fifth term is 64 the series
    would be _____.

    (a) 4 + 8 + 16 + 32 + ….

    (b) 4 − 8 + 16 − 32 + …….

    (c) both

    (d) None

29. How many terms of the G.P. 1, 4, 16 …. are to be taken to have their sum 341?

    (a) 8

    (b) 5

    (c) 3

    (d) None

30. There are 6 routes for journey from station A to station B. In how many ways you may go from A to B and return if for returning you make a choice of any of the routes?

    (a) 6

    (b) 12

    (c) 36

    (d) 30

31. The number which when subtracted from each of the terms of the ratio 19:31 reducing it to 1:4 is

    (a) 45

    (b) 5

    (c) 1

    (d) None of these

32. If log x + log y = log (x + y) , y can be expressed as

    (a) x − 1

    (b) x

    (c) x/ x-1

    (d) None of these

33. The cubic equation $x^3 + 2x^2 - x - 2 = 0$ has 3 roots namely

    (a) (1,-1,2)

    (b) (-1,1,-2)

    (c) (-1,2,-2)

    (d) (1,2,2)

34. The sum of two numbers is 45 and the mean proportional between them is 18. The numbers are

    (a) (15,30)

    (b) (32,13)

    (c) (36,9)

    (d) (25,20)

35. A loan of Rs. 10000 is to be paid back in 30 equal installments . The amount of each installment to cover the principal and at 4% p.a. CI is

(a) Rs. 587.87

(b) Rs. 587

(c) Rs. 578.87

(d) None of these

36. Out of 7 gents and 4 ladies a committee of 5 is to be formed. The number of committees such that each committee includes atleast one lady is

(a) 400

(b) 440

(c) 441

(d) None of these

37. The last term of the series 1,-3,9,-27 upto 7 terms is

(a) 297

(b) 729

(c) 927

(d) None of these

38. The sum of all natural numbers between 500 and 1000 which are divisible by 13, is

(a) 28,405

(b) 24,805

(c) 28,540

(d) None of these

39. The domain of {(1,7) , (2,6) } is

(a) (1,6)

(b) (7,6)

(c) (1,2)

(d) (6,7)

40. "Is the square of " over n set of real numbers is

(a) R

(b) S

(c) T

(d) None of these

41.   Find the missing term of the number series 48, 24, 96 , ? 192

(a) 48

(b) 47

(c) 44

(d) 54

42.   Find the missing term of the number series 120, 99, ?, 63, 48, 35

(a) 80

(b) 36

(c) 45

(d) 40

43.   A starts from a point and walks 5 kms north, then turns left and walks 3 kms. Then again turns left and walks 5 km. Point out the direction in which he is going now.

(a) North

(b) South

(c) East

(d) West

44.   Babu is Rahim's neighbour and his house is 200 meters away in the north-west direction. Joseph is Rahim's neighbour and his house is located 200 meter away in the south-west direction. Gopal is Joseph's neighbour and he stays 200 meters away in the south-east direction. Roy is Gopal's neighbour and his house is located 200 meters away in the north-east direction. Then where is the position of Roys' house in relation to Babu's ?

(a) South-east

(b) south-west

(c) North

(d) North-east

45.   A starts walking towards North turns left, again turns left, turns right, again turns right once again turns left. In which direction is A walking now?

(a) East

(b) South

(c) West

(d) South-East

Directions (No: 46-47):Study the following information carefully to answer the given questions.

A to H are seated in straight line facing North. C sits fourth left of G. D sits second to right of G. Only two people sit between D and A. B and F are immediate neighbours of each other. B is not an immediate neighbour of A. H is not neighbour of D.

46.   What is the position of H with respect to F?

(a) Third to the left

(b) Immediate right

(c) Second to right

(d) Fourth to left

47.   How many persons are seated between A and E?

(a) One

(b) Two

(c) Three

(d) Four

48.   Six persons M, N, O, P, Q and R are sitting in two row 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

49.   There are five different houses, A to E, in a row. A is to the right of B and E is to the left of C and right of A, B is to the right of D. Which of the houses is in the middle?

(a) A

(b) B

(c) C

(d) D

50. A and B are brother and sister respectively. C is A's father. D is C's sister and E is D's mother. How is B related to E?

(a) Grand-daughter

(b) Great grand-daughter

(c) Aunt

(d) Daughter

51. Rahul and Robin are brothers. Promod is Rohin's father. Sheela is Pramod's sister. Prema is Promod's niece. Shubha is Sheela's grand-daughter. How is Rahul related to Shubha?

(a) Brother

(b) Cousin

(c) Uncle

(d) Nephew

Directions (Qs. 52 - 56): Each of the following questions contains two statements followed by two conclusions numbered I and II. You have to consider the two statements to be true, even if they seen to be at variance at the commonly known facts. You have to decide which of the given conclusions definitely follows from the given statements.

Give answer (a) if only I follows; (b) if only conclusion II follows; (c) If either conclusion I or conclusion II follows (d) if neither I nor II follows

52. **Statement:**   All pens are dogs.

     Some pens are lights.

     Conclusions: I. Some dogs are lights.

     II. Some lights are not dogs

53. **Statement:**   Some animals are clouds.

     Horse is a animal.

     Conclusions: I. Some clouds are animal.

     II. Horse is not a cloud.

54. **Statement:**   All tables are rats.

     Some Rats are chairs.

     Conclusions: I. All rats are tables

     II. Some chairs are not rats.

55. **Statement:** Some files are rats.

    All animals are rats.

    Conclusions: I. All files are rats.

    II. Some rats are animals.

56. **Statement:** All cricketers are tall.

    Rajesh is tall.

    Conclusions: I. Rajesh is a cricketer.

    II. Rajesh is not cricketer.

57. If in a certain code language NAME is written as 4258 then what is coded as MEAN ?

    (a) 2458

    (b) 5842

    (c) 8524

    (d) 5824

58. If PALAM could be given the code number 43, what code number can be given to SANTACRUZ?

    (a) 123

    (b) 85

    (c) 120

    (d) 125

59. A man starts his journey facing the sun early morning. He then turns right and walks 2 km. He then walks 3 km after turning right again. Which is the direction he is facing now?

    (a) North-East

    (b) North

    (c) West

    (d) South

60. A is B's brother. C is A's father. D is C's sister and E is D's mother. How is B related to E?

    (a) Grand-daughter

    (b) Great grands daughter

    (c) Grandaunt

    (d) Daughter

61. A binomial distribution with parameters n and p can be approximated by a Poisson distribution with parameter m = np is

(a) n $\rightarrow \infty$

(b) p $\rightarrow$ 0

(c) n $\rightarrow \infty$ and p $\rightarrow$ 0

(d) n $\rightarrow \infty$ and p $\rightarrow$ 0 so that np remains finite.

62. What is the coefficient of variation of x, characterised by the following probability density function:

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

(a) 50.

(b) 60.

(c) 40.

(d) 30.

63. The salary of workers of a factory is known to follow normal distribution with an average salary of Rs. 10,000 and standard deviation of salary as Rs. 2,000. If 50 workers receive salary more than Rs. 14,000, then the total no. of workers in the factory is

(a) 2,193

(b) 2,000

(c) 2,200

(d) 2,500

64. If u = 2x + 5 and v = − 3y − 6 and regression coefficient of y on x is 2.4, what is the regression coefficient of v on u?

(a) 3.6

(b) –3.6

(c) 2.4

(d) –2.4

65. For y = 25, what is the estimated value of x, from the following data:

X:	11	12	15	16	18	19	21
Y:	21	15	13	12	11	10	9

(a) 15

(b) 13.926

(c) 13.588

(d) 14.986

66. What are the limits of the correlation coefficient?

(a) No limit

(b) –1 and 1

(c) 0 and 1, including the limits

(d) –1 and 1, including the limits

67. If u + 5x = 6 and 3y – 7v = 20 and the correlation coefficient between x and y is 0.58 then what would be the correlation coefficient between u and v?

(a) 0.58

(b) –0.58

(c) –0.84

(d) 0.84

68. The following results relate to bivariate data on (x, y): $\sum xy$ = 414, $\sum x$ = 120, $\sum y$ = 90, $\sum x^2$ = 600, $\sum y^2$ = 300, n = 30. Later or, it was known thattwo pairs of observations (12, 11) and (6, 8) were wrongly taken, the correct pairs ofobservations being (10, 9) and (8, 10). The corrected value of the correlation coefficient is

(a) 0.752

(b) 0.768

(c) 0.846

(d) 0.953

69. If $\sum P_n q_n$ = 249, $\sum p_o q_o$ = 150, Paasche's Index Number = 150 and Drobiseh and Bowely's Index number = 145, then the Fisher's Ideal Index Number is

(a) 75

(b) 60

(c) 145.97

(d) None of these

70. If now the prices of all the commodities in a place have been decreased by 35% over the base period prices, then the index number of prices for the place is now (index number of prices of base period = 100)

(a) 100

(b) 135

(c) 65

(d) None of these.

71. From the following data

Commodities		A	B	C	D
1992 Base	Price	3	5	4	1
	Quantity	18	6	20	14
1993 Current Year	Price	4	5	6	3
	Quantity	15	9	26	15

The Passche price Index number is :

(a) 146.41

(b) 148.25

(c) 144.25

(d) None of these.

72. If the variables x & z are so related that z = ax + b for each x = x_i where a & b are constants, then $\bar{z}$ = a $\bar{x}$ + b

(a) true

(b) false

(c) both

(d) none

73. (3rd quartile —— 1st quartile)/2 is

(a) skewness

(b) median

(c) quartile deviation

(d) none

74. For 333, 999, 888, 777, 1000, 321, 133. Rank of 3rd quartile is:

(a) 7

(b) 4

(c) 5

(d) 6

75. If two events cannot occur simultaneously in the same trial then they are

   (a) mutually exclusive events

   (b) simple events

   (c) favourable events

   (d) none

76. If the probability of a horse A winning a race is 1/6 and the probability of a horse B winning the same race is 1/4 , What is the probability that none of them will win

   (a) 5/12

   (b) 7/12

   (c) 1/12

   (d) none

77. Which of the following set of function define a probability space on S = {a₁, a₂, a₃}

   (a) $P(a_1) = \frac{1}{3}$, $P(a_2) = \frac{1}{2}$, $P(a_3) = \frac{1}{4}$

   (b) $P(a_1) = \frac{1}{3}$, $P(a_2) = \frac{1}{6}$, $P(a_3) = \frac{1}{2}$

   (c) $P(a_1) = P(a_2) = \frac{2}{3}$, $P(a_3) = \frac{1}{4}$

   (d) None

78. Let P be a probability function on S = {X₁ , X₂ , X₃} if $P(X_1) = \frac{1}{4}$ and $P(X_3) = \frac{1}{3}$ then $P(X_2)$ is equal to

   (a) 5/12

   (b) 7/12

   (c) 3/4

   (d) none

79. The chance of getting a sum of 10 in a single throw with two dice is

   (a) 10/36

   (b) 1/12

   (c) 5/36

   (d) none

80. The probability density function of a normal variable x is given by

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

(b) $f(x) = f(x) = \frac{1}{\sigma\sqrt{2\pi}} . e^{\left(\frac{-(x-\mu)^2}{2\sigma^2}\right)}$　　　　for $0 < x < \infty$

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

(d) none

81. If the area of standard normal curve between z = 0 to z = 1 is 0.3413, then the value of Ø (1) is

(a) 0.5000.

(b) 0.8413.

(c) –0.5000.

(d) 1.

82. The average weekly food expenditure of a group of families has a normal distribution with mean Rs. 1,800 and standard deviation Rs. 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 Rs. 1,800? Given Ø (1) = 0.84.

(a) 0.418

(b) 0.582

(c) 0.386

(d) 0.614

83. If X ~ P (m) and its coefficient of variation is 50, what is the probability that X would assume only non-zero values?

(a) 0.018.

(b) 0.982.

(c) 0.989.

(d) 0.976.

84. A car hire firm has 2 cars which is hired out everyday. The number of demands per day for a car follows Poisson distribution with mean 1.20. What is the proportion of days on which some demand is refused?

(Given $e^{1.20} = 3.32$).

(a) 0.25

(b) 0.3012

(c) 0.12

(d) 0.03

85. 50% of actual values will be below & 50% of will be above —————

(a) mode

(b) median

(c) mean

(d) none

86. For purposes of comparison between two or more series with varying size or no. of items, varying central values or units of calculation, only —————— measures can be used.

(a) absolute

(b) relative

(c) both

(d) none

87. Group index number is represented by

(a) $\dfrac{\text{Price Relative for the year}}{\text{Price Relative for the previous year}}$ x 100

(b) $\dfrac{\sum(\text{Price Relative} \times \text{w})}{\sum \text{w}}$

(c) $\dfrac{\sum(\text{Price Relative} \times \text{w})}{\sum \text{w}}$ x 100

(d) None of these

88. 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.

89. The Probability of the occurrence of a number greater then 2 in a throw of a die if it is known that only even numbers can occur is

(a) 1/3

(b) 1/2

(c) 2/3

(d) none

90. The classical definition of probability is based on the feasibility at subdividing the possible outcomes of the experiments into

(a) mutually exclusive and exhaustive

(b) mutually exclusive and equally likely

(c) exhaustive and equally likely

(d) mutually exclusive, exhaustive and equally likely cases.

91. The probability of occurrence of at least one of the 2 events A and B (which may not be mutually exclusive) is given by

(a) $P(A+B) = P(A) - P(B)$

(b) $P(A+B) = P(A) + P(B) - P(AB)$

(c) $P(A+B) = P(A) - P(B) + P(AB)$

(d) $P(A+B) = P(A) + P(B)$

92. In Standard Normal distribution

(a) mean=1, S.D=0

(b) mean=1, S.D=1

(c) mean = 0, S.D = 1

(d) mean=0, S.D=0

93. The Number of methods for fitting the normal curve is

(a) 1

(b) 2

(c) 3

(d) 4

94. A continuous random variable x follows uniform distribution with probability density function.

$f(x) = \frac{1}{2}$, $(4 \leq x \leq 6)$. Then $P(4 \leq x \leq 5)$

(a) 0.1

(b) 0.5

(c) 0

(d) none

95. In the regression equation x on y, X = 35/8 – 2Y /5, b_{xy} is equal to

(a) –2/5

(b) 35/8

(c) 2/5

(d) 5/2

96. The regression equation of Y on X is, 2x + 3Y + 50 = 0. The value of b_{YX} is

(a) 2/3

(b) – 2/3

(c) –3/2

(d) none

97. In case 'Speed of an automobile and the distance required to stop the car often applying brakes' – correlation is

(a) positive

(b) negative

(c) zero

(d) none

98. 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.

99. In continuous probability distribution P $(x \leq t)$ means

(a) Area under the probability curve to the left of the vertical line at t.

(b) Area under the probability curve to the right of the vertical line at t.

(c) both

(d) none

100. An unbiased die is tossed 500 times. The Standard deviation of the number of 'sixes' in these 500 tossed is

(a) 50/6

(b) 500/6

(c) 5/6

(d) none