ALL INDIA OPEN MOCK
BY CA WALLAH

GENERAL INSTRUCTIONS TO CANDIDATES

1. Please do not open this Booklet till you are told to do so.
2. If the Question Paper Booklet does not contain 100 questions or if it is not of the medium opted or Answer Sheet is not in good condition, ask for change immediately.
3. Duration of the test is 2 hours.
4. Before commencement of the exam, please fill up the necessary information in the space provided below and also in the answer sheet.
5. Use HB pencil only to darken the circles for answers in the answer sheet.
6. After each question, four alternative answers are given. Choose one of the answers and darken the appropriate circle against the question number in the OMR Answer Sheet, completely, as shown below, with HB Pencil.

Marking the Answers	
Example	**Not as shown below (Wrong method)**
For Question No. 12, if the candidate considers, the correct answer to be C, he is to mark as shown below (Correct Method)	12 (A) (B) (C) (D) 12 (A) (B) (C) (D) 12 (A) (B) (C) (D) 12 (A) (B) (C) (D) 12 (A) (B) (C) (D)
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7. Any answer marked in the question booklet will not be considered and no marks will be awarded.
8. If a candidate wants to change the answer already darkened, he should erase it completely, with good quality eraser and ensure that no mark is visible after erasing.
9. For each correct answer, one mark will be awarded. For each wrong answer, 1/4th of the mark earmarked for each question will be deducted. If more than one circle is darkened for a question, it will be treated as wrong answer. For questions not answered i.e. blanks, a zero will be given.
10. Rough work, if any, must be done on the pages, specified as SPACE FOR ROUGH WORK only and nowhere else in the question paper booklet or in the answer sheet.
11. When you have completed, even before time, please remain in your seat. The Invigilator will come to you and collect your Answer Sheet against acknowledgement on the admit card. No candidate can leave the examination hall till the end of the test.
12. Candidate found copying or receiving or giving any help or defying instructions of the Invigilators or having/using mobile phone or smart watch will be expelled from the examination and will also be liable for further punitive action.
13. This booklet is the property of the Examination Body. Any unauthorized and illegal circulation of its contents in part or in full in any manner whatsoever is strictly prohibited. Candidates involved in such unauthorized and illegal acts are liable to be prosecuted besides being disqualified to appear in any further examinations of the Examination Body.

Time allowed : 2 hours **Maximum Marks : 100**

Total No. of Printed Pages : 21

Question Paper Booklet Code

F	0	3

Roll No | | | | | | | |

Name of the Candidate	

OMR Answer Sheet No. | | | | | | |

Signature of the Candidate

(2)
F03
Space For Rough Work

1. If $4x^3 + 8x^2 - x - 2 = 0$, then the value of $(2x + 3)$ is given by

(A) $(4, 2, -1)$ (B) $(-4, 2, 1)$

(C) $(2, -4, -1)$ (D) None

2. The square root of is $11 - \sqrt{120}$ given by

(A) $\sqrt{6} + \sqrt{5}$ (B) $\sqrt{6} - \sqrt{5}$

(C) $2\sqrt{3} + 3\sqrt{2}$ (D) $2\sqrt{3} - 3\sqrt{2}$

3. Solve the double inequality:

$-7 \leq 2x - 3 < 5$

(A) $-2 \leq x < 4$ (B) $-1 \leq x < 3$

(C) $-2 \leq x < 3$ (D) $-1 \leq x < 4$

4. A bakery makes two types of cakes: Chocolate Cakes and Vanilla Cakes**.** Each chocolate cake requires 2 kg of flour, and each vanilla cake requires 1 kg of flour. The bakery has a maximum of 30 kg of flour available each day. Additionally, the bakery cannot bake more than 20 cake**s** in total in a day.

Let x represent the number of chocolate cakes and y represent the number of vanilla cakes.

(A) $2x + y \leq 30, x + y \leq 20, x \geq 0, y \geq 0$

(B) $x + 2y \leq 30, x + y \geq 20, x \geq 0, y \geq 0$

(C) $2x + y \geq 30, x + y \leq 20, x \leq 0, y \leq 0$

(D) $x + 2y \geq 30, x + y \leq 20, x \geq 0, y \geq 0$

5. If $a = \frac{1}{2}\left(5 - \sqrt{21}\right)$, then the value of $a^3 + a^{-3} - 5a^2 - 5a^{-2} + a + a^{-1}$.

(A) 0 (B) 1

(C) 5 (D) –1

6. The age of a person is twice the sum of the ages of his two sons, and five years ago, his age was thrice the sum of their ages. Find his present age.

(A) 60 years (B) 52 years

(C) 51 years (D) 50 years

7. Solve the equation $(b - c)x^2 + (c - a)x + (a - b) = 0$.

(A) $\frac{b-a}{b-c}, 1$ (B) (b – a) (a – c), 1

(C) $\frac{b-c}{a-b}, 1$ (D) None

8. If ₹ 64 amounts to ₹ 83.20 in 2 years, what will ₹ 86 amount to in 4 years at the same rate of compound interest?

(A) ₹ 127.60 (B) ₹ 147.60

(C) ₹ 145.34 (D) ₹ 117.60

9. A sum of ₹ x amounts to ₹ 27,900 in 3 years and to ₹ 41,850 in 6 years at a certain rate percent per annum when the interest is compounded yearly. The value of ₹ x is:

(A) ₹ 16,080 (B) ₹ 18,600

(C) ₹ 18,060 (D) ₹ 16,800

10. Mr. X left Rs.50,000 to be divided between his two daughters Divya and Neha. Divya and Neha both invested their share @6% C.I. If Divya's share increased to a certain amount in 5 years and Neha's share also become same as Divya's share but it took 7 years. Find the Amount.

(A) Rs 35403 (B) Rs 34503

(C) Rs 33504 (D) Rs 45034

11. Mr. X took a loan from Mr. Y and promises to return ₹ 15,000 in 2 years and ₹ 25,000 in 5 years. If the interest rate is 8% compounded annually, what is the loan amount?

(A) ₹ 28,500.00 (B) ₹ 29,000.00

(C) ₹ 29,874.66 (D) ₹ 30,000.00

12. A machine costs ₹ 5,20,000 with an estimated life of 25 years, if this machine's scrap value realization is ₹ 25,000. A sinking fund is created to replace it by a new model at 25% higher cost after 25 years. What amount should be set aside every year if the sinking fund investments accumulate at 3.5% compound interest p.a.?

(A) ₹ 16,000 (B) ₹ 16,500

(C) ₹ 16,046 (D) ₹ 16,005

13. 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

14. If the simple interest on a sum of money at 12% p.a. for two years is ₹ 3,600, the compound interest on the same sum for two years at the same rate is:

(A) ₹ 3,816 (B) ₹ 3,806

(C) ₹ 3,861 (D) ₹ 3,860

15. $\frac{4}{x}-\frac{5}{y}=\frac{x+y}{xy}+\frac{3}{10}$ and $3xy = 10(y - x)$

(A) (2, 7) (B) (5, 2)

(C) (2, 5) (D) (3, 4)

16. A box contains 25 paise coins, 10 paise coins and 5 paise coins in ratio 3 : 2 : 1 and total money is Rs 40. How many "5" paise coins are there?

(A) 65 (B) 55

(C) 40 (D) 50

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

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

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

18. By mistake, a clerk calculated the simple interest on the principal for 5 months at 6.5% p.a. instead of 6 months at 5.5% p.a. If the error in calculation was ₹25.40, the original sum of the principal was _____.

(A) ₹ 60,690 (B) ₹ 60,960

(C) ₹ 90,660 (D) ₹ 90,690

19. 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 two year after he has made his yearly investment for the 12^{th} time is

(A) 11,761 (B) 12,937

(C) 14,230 (D) 15,653

20. The function $f(x) = e^x$ is:

(A) Continuous for all $x \in R$

(B) Discontinuous for negative values of x

(C) Continuous only for positive values of x

(D) Discontinuous at $x = 0$

21. An investor intends to purchase a ten-year ₹10,000 par value bond having a nominal interest rate of 7%. At what price may the bond be purchased now if it matures at par and the investor requires a rate of return of 9%?

(A) ₹ 7,892.10 (B) ₹ 8,017.35

(C) ₹ 8,209.04 (D) ₹ 8,716.47

22. A company needs to accumulate ₹10 lakhs in 15 years to replace a piece of equipment. If the sinking fund investments can earn an interest rate of 5% per annum, how much does the company need to invest annually?

(A) ₹44000 (B) ₹45563

(C) ₹46342 (D) ₹45265

23. The sum of n terms of the series $1^2 + (1^2 + 2^2) + (1^2 + 2^2 + 3^2) + \ldots..$ is:

(A) $\left(\frac{n}{12}\right)(n + 1)^2 (n + 2)$

(B) $\left(\frac{n}{12}\right)(n - 1)^2 (n + 2)$

(C) $\left(\frac{n}{12}\right)(n^2 - 1)(n + 2)$

(D) None

24. If $x = \sqrt{1+\sqrt{1+\sqrt{1+\sqrt{\_\_\_\_\infty}}}}$ then the positive value of x is:

(A) $\frac{\sqrt{7}+1}{2}$ (B) $\frac{\sqrt{6}+1}{2}$

(C) $\frac{\sqrt{3}+1}{2}$ (D) $\frac{\sqrt{5}+1}{2}$

25. Find the number of ways in which an arrangement of 4 letters can be made from the word 'MATHEMATICS'.

(A) 1680 (B) 756

(C) 18 (D) 2,454

26. Five bulbs of which three are defective are to be tried in two bulb points in a dark room. The number of trials the room shall be lighted is

(A) 6 (B) 8

(C) 5 (D) 7

27. The letters of the word ZENITH are permuted and are arranged in an alphabetical order as in an English dictionary.

Then, the rank of the word ZENITH is _____.

(A) 615 (B) 620

(C) 720 (D) None

28. There are 7 Men and 3 Ladies. Find the number of ways in which a committee of 6 can be formed of them if the committee is to include at least two ladies?

(A) 160 (B) 180

(C) 150 (D) None

29. For the function $h(x) = 10^{1+x}$ the domain of real values of x where $0 \le x \le 9$, the range is

(A) $10 \le h(x) \le 10^{10}$ (B) $0 \le h(x) \le 10^{10}$

(C) $0 < h(x) < 10$ (D) none of these

30. Find the sum to n terms of $\left(1 - \frac{1}{n}\right) + \left(1 - \frac{2}{n}\right) + \left(1 - \frac{3}{n}\right) + ...$

(A) $\frac{1}{2}(n - 1)$ (B) $\frac{1}{2}(n + 1)$

(C) $(n - 1)$ (D) $(n + 1)$

31. A company charge Rs. 15000 for a refrigerator on orders of 20 or less refrigerator. The charge is reduced on every set by Rs. 100 per piece for each piece ordered in excess of 20. Find the largest size order the company should allow so as to receive a maximum revenue.

(A) 85 (B) 80

(C) 100 (D) 70

32. The marginal revenue of a function $MR = 7 - 4x - x^2$. Find the total Revenue.

(A) $R = 7x - \frac{4x^2}{2} - \frac{x^3}{3}$ (B) $R = 7x + \frac{4x^2}{2} - \frac{x^3}{3}$

(C) $R = 7x - \frac{4x^2}{2} + \frac{x^3}{3}$ (D) $R = 7x + \frac{4x^2}{2} + \frac{x^3}{3}$

33. If $f(x) = \frac{1}{1-x}$, then $f^{-1}(x)$ is

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

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

34. Given $x = t + t^{-1}$ and $y = t - t^{-1}$, the value of $\frac{dy}{dx}$ at $t = 2$ is:

(A) $\frac{3}{5}$ (B) $-\frac{3}{5}$

(C) $\frac{5}{3}$ (D) None of these

35. $\int x^x (1 + \log x)\, dx$ is equal to

(A) $x^x \log x + k$ (B) $e^{x2} + k$

(C) $\frac{x^2}{2} + k$ (D) $x^x + c$

36. The fixed cost of a new product is Rs. 18000 and the variable cost per unit is Rs 550. If demand function $p(x) = 4000 - 150x$, find the break-even values.

(A) 15, 8 (B) 7, 12

(C) 3, 17 (D) 5, 15

37. The sum of first n terms an AP is $3n^2 + 5n$. The series is

(A) 8, 14, 20, 26, ……

(B) 8, 22, 42, 68, ……

(C) 22, 68, 114, ……

(D) 8, 14, 28, 44, ……

38. Sum upto infinity of series;

$$\frac{1}{2} + \frac{1}{3^2} + \frac{1}{2^3} + \frac{1}{3^4} + \frac{1}{2^5} + \ldots$$

(A) 19/24 (B) 24/19

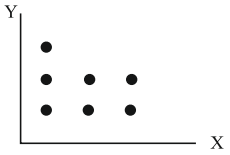
(C) 5/24 (D) None

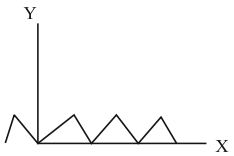
39. The number of ways in which a committee of 3 ladies and 4 gentlemen can be appointed from a meeting consisting of 8 ladies and 7 gentlemen, if Mrs X refuses to serve in a committee if Mr. Y is a member is

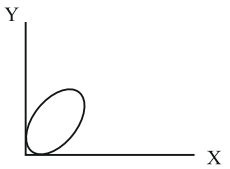
(A) 1540 (B) 3240

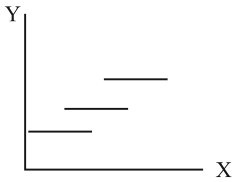
(C) 1960 (D) None of these

40. Which of the diagram is graph of a function?

(A) 

(B) 

(C) 

(D) 

41. 1AZ, 2BY, 3CX, 4DW _____.

(A) 5EV (B) 6EU

(C) 7AE (D) 5FO

42. LXF, MTJ, NPN, OLR _____.

(A) HAV (B) PHV

(C) PIU (D) PKX

43. 1, 3, 7, 51 _____.

Next term will be

(A) 2601 (B) 2599

(C) 102 (D) None

44. 2, 4, 6, 12, 18 _____.

Next term will be

(A) 27 (B) 54

(C) 25 (D) 36

45. 1, 2, 6, 15 _____.

Next term will be

(A) 25 (B) 43

(C) 18 (D) 31

46. If FRAME is coded as 0618011305 then ARISE is coded as _____.

(A) 0118091905 (B) 0119091805

(C) 0118190905 (D) 0118091805

47. If A + B means A is the brother of B, A – B means A is the sister of B, and A × B means A is the father of B. Which of the following means that C is the son of M?

(A) M – N × C + F (B) F – C + N × M

(C) N + M – F × C (D) M × N – C + F

48. If A + B means A is the brother of B. A × B means A is the son of B and A% B means B is the daughter of A then which of the following means M is the maternal uncle of N?

(A) M + O × N (B) M % O × N + P

(C) M + O % N (D) None of these

49. Introducing Sonia, Aamir says, "She is the wife of only nephew of only brother of my mother". How Sonia is related to Aamir?

(A) Wife (B) Sister-in-law

(C) Sister (D) Data is inadequate

50. 1. B 5 D means B is the father of D.

2. B 9 D means B is the sister of D.

3. B 4 D means B is the brother of D.

4. B 3 D means B is the wife of D.

Which of the following means F is the mother of K?

(A) F 3 M 5 K (B) F 5 M 3 K

(C) F 9 M 4 N 3 K (D) F 3 M 5 N 3 K

51. A man can walk by having long, medium and short steps. He can cover 60 meters by 100 long steps, 100 meters by 200 medium steps and 80 meters by 200 short steps, he walks taking 5000 long steps, then he turns left and walk by taking 6000 medium steps. He then turns right and walk by taking 2500 short steps. How far (in meters) is he away from his starting point?

(A) 5000 m (B) 4000 m

(C) 6000 m (D) 7000 m

52. Six flats on a floor in two rows facing North and South are allotted to P, Q, R, S, T and U. Q gets a North facing flat and it is not next to S. S and U get diagonally opposite flat. R next to U gets a South facing flat and T gets a North facing flat. Whose flat is between Q and S?

(A) T (B) U

(C) R (D) P

53. Five boys A, B, C, D, E, are sitting in a park in a circle. A is facing South-West, D is facing South-East, B and E are right opposite to A and D respectively and C is equidistant between D and B. Which direction is C facing?

(A) West (B) South

(C) North (D) East

54. Eight friends I, J, K, L, M, N, O and P are sitting in a circle facing the centre. J is sitting between O and L; P is third to the left of J and second to the right of I; K is sitting between I and O; J and M are not sitting opposite to each other, which of the following statements is not correct?

(A) K is sitting third to the right of L

(B) I is sitting between K and N

(C) L and I are sitting opposite to each other

(D) M is sitting between N and L.

55. 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 P?

(A) R (B) Q

(C) T (D) S

56. 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

57. Aditya walked 20 m towards North. Then he turned right and walks 30 m. Then he turns right and walk 35 m. Then he turns left and walk 15 m. Finally, he turns left and walk 15 m. In which direction and how many meters is he from the starting point?

(A) 15 m West (B) 30 m East

(C) 30 m West (D) 45 m East

58. The length and breath of a room are 8 m and 6 m respectively. A cats 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 (B) 14

(C) 38 (D) 48

59. Madhuri moved a distance of 75 meters toward north. She then turned to her left and walked for about 25 m, turned left again and walked 80 m. Finally, she turned to her right at an angle of 45°. In which direction was she moving now?

(A) South-East (B) South-West

(C) North-West (D) North-East

60. Pointing to a woman in a picture, Sumit said, she is the mother of my son's wife's daughter. How is lady related to the Sumit?

(A) Uncle (B) Cousin

(C) Daughter (D) None

61. The average salary of 50 men was ₹ 80 but it was found that salary of 2 of them were ₹ 46 and ₹ 28 which was wrongly taken as ₹ 64 and ₹ 82. The revised average salary is:

(A) ₹ 80 (B) ₹ 78.56

(C) ₹ 85.26 (D) ₹ 82.92

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

63. If the median of $\frac{x}{5}, \frac{x}{3}, \frac{x}{6}, \frac{x}{2}, \frac{x}{7}$ and x is 24. Find the value of x.

(A) 72 (B) 49

(C) 90 (D) 52

64. 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

65. The G.M. of 4, 20 and 36 is

(A) $2\sqrt[3]{80}$ (B) $8\sqrt[3]{340}$

(C) $2\sqrt[3]{8}$ (D) $4\sqrt[3]{45}$

66. The scores of 10 students in a math test out of 100 are as follows : 45, 67, 78, 34, 89, 90, 56, 76, 85, 69. What is the 70^{th} percentile score?

(A) 76.3 (B) 78.5

(C) 82.9 (D) 85.2

67. The mean and SD for a, b and 2 are 3 and $\frac{2}{\sqrt{3}}$ respectively, The value of ab would be

(A) 5 (B) 6

(C) 11 (D) 3

68. The standard deviation of the weights (in kg) of the students of a class of 50 students was calculated to be 4.5 kg. Later on it was found that due to some fault in weighing machine, the weight of each student was under measured by 0.5 kg. The Correct standard deviation of the weight will be:

(A) Less than 4.5

(B) Greater than 4.5

(C) Equal to 4.5

(D) Can not be determined

69. If Standard deviation of x is σ, then Standard deviation of $\frac{ax+b}{c}$,where a, b and c (c $\pm$ 0) are arbitrary constants, will be

(A) σ (B) $\frac{a\sigma+b}{c}$

(C) $\frac{a}{c}.\sigma$ (D) $\left|\frac{a}{c}\right|\sigma$

70. The mean and SD of a sample of 100 observations were calculated as 40 and 5.1 respectively by a CA student who took one of the observations as 50 instead of 40 by mistake. The current value of SD would be

(A) 4.90 (B) 5.00

(C) 4.88 (D) 4.85

71. If x ; 2, 3, 8, 1,1 then $\sum(xi - A)^2$ is minimum when

(A) A = 5.5 (B) A = 6

(C) A = 8 (D) None

72. What is the slope of Regression line y on x : $2x + 3y - 5 = 0$?

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

(C) $\frac{1}{2}$ (D) None of the above

73. The ranks of five participants given by two judges are;

Participants

		A	B	C	D	E
Judge	1	1	2	3	4	5
Judge	2	5	4	3	2	1

Rank correlation coefficient between ranks will be

(A) 1 (B) 0

(C) –1 (D) $\frac{1}{2}$

74. The two lines of regression are $2x - 7y + 6 = 0$ and $7x - 2y + 1 = 0$. What is the correction coefficient between x and y?

(A) $-\frac{2}{7}$ (B) $\frac{2}{7}$

(C) $\frac{4}{49}$ (D) None of these

75. Spearman's correction co-efficient from 10 pairs of observations was calculated at 0.8. Subsequently, it was discovered that the difference in ranks relating to one pair of items was wrongly taken as 7 instead of 9. Correct the co-efficient of rank correlation.

(A) 0.51 (B) 0.61

(C) 0.71 (D) 0.81

76. The consumer price Index for April 1985 was 125. The food price index was 120 and other items index was 135. The percentage of the total weight index given to food is

(A) 66.67 (B) 68.28

(C) 90.25 (D) None of these

77. The total value of retained imports into India in 1960 was Rs. 71.5 million per month. The corresponding total for 1967 was Rs. 87.6 million per month. The index of volume of retained imports in 1967 composed with 1960 (= 100) was 62.0. The price index for retained inputs for 1967 our 1960 as base is

(A) 198.61 (B) 197.61

(C) 198.25 (D) None of these

78. The price index number using simple G.M. of the n relatives is given by :

(A) $\log I = 2 - \frac{1}{n}\sum \log \frac{P_n}{P_0}$

(B) $\log I = 2 + \frac{1}{n}\sum \log \frac{P_n}{P_0}$

(C) $\log I = \frac{1}{2n}\sum \log \frac{P_n}{P_0}$

(D) None of these

79. Chain index is equal to:

(A) link relative of current year $\times \frac{\text{Chain index of the current year}}{100}$

(B) link relative of current year $\times \frac{\text{Chain index of the previous year}}{100}$

(C) link relative of previous year $\times \frac{\text{Chain index of the current year}}{100}$

(D) None of these

80. The circular test is satisfied by

(A) Fisher's index number

(B) Paasche's index number

(C) Laspeyre's index number

(D) Simple GM price relative

81. The primary rules that should be observed in classification

(i) As far as possible, the class should be of equal width.

(ii) The classes should be exhaustive

(iii) The classes should be unambiguously defined.

Then which of the following is correct ?

(A) Only (i) and (ii) (B) Only (ii) and (iii)

(C) Only (i) and (iii) (D) All (i), (ii) and (iii)

82. Hidden trend, if any, in the data can be noticed in

(A) Textual presentation

(B) Tabulation

(C) Diagrammatic representation

(D) All of these

83. 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

84. A dice is thrown once. What is the mathematical expectation of the number on the dice?

(A) 16/6 (B) 13/2

(C) 3.5 (D) 4.5

85. If every 9^{th} unit is selected from universal set, then this type of sampling is known as:

(A) Quota Sampling

(B) Systematic Sampling

(C) Stratified Sampling

(D) None of these

86. Consider Urn I : 2 white balls, 3 black balls

Urn II : 4 white balls, 6 black balls

One ball is randomly transferred from first to second Urn, then one ball is drawn from II Urn. The probability that drawn ball is white is

(A) 22/65 (B) 22/46

(C) 22/55 (D) 21/45

87. A bag contains 5 Red balls, 4 Blue Balls and 'm' Green Balls. If the random probability of picking two green balls is $\frac{1}{7}$. What is the no. of green balls (m).

(A) 5 (B) 7

(C) 6 (D) None of the above

88. The probability distribution of a random variable is as follows :

x	1	2	4	6	8
P	k	2k	3k	3k	k

The variance of *x* is

(A) 2.1 (B) 4.41

(C) 2.32 (D) 2.47

89. For a Binomial distribution B(6, p), P(x = 2) = 9p(x = 4), then P is

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

(C) $\frac{10}{13}$ (D) $\frac{1}{4}$

90. Frequency distribution of weights of 30 students is:

Weight in kgs.	No. of Students
44-48	6
49-53	5
54-58	8
59-63	11

What is the frequency density for the class interval 49-53 ?

(A) 1.25 (B) 1.67

(C) 6 (D) 1

91. There were 200 employees in an office in which 150 were married. Total male employees were 160 out of which 120 were married. What was the number of female unmarried employees?

(A) 30 (B) 40

(C) 50 (D) 10

92. The Probability distribution of a random variable is as follows;

x	1	2	3	4	5	6
P	3k	5k	2k	4k	3k	3k

The expected value of x is:

(A) 2.8 (B) 12.2

(C) 6.8 (D) 3.4

93. If X ~ B (n, p), what would be the greatest value of the variance of x when n = 16?

(A) 2 (B) 4

(C) 8 (D) $\sqrt{2}$

94. What is the standard deviation of the number of recoveries among 48 patients, when the probability of recovering is 0.75?

(A) 36 (B) 81

(C) 9 (D) 3

95. 50 per cent of a certain product have weight 60 kg or more whereas 10 per cent have weight 55 kg or less. On the assumption of normality, what is the variance of weight?

Given $\phi(1.28) = 0.90$

(A) 15.21 (B) 9.00

(C) 16.00 (D) 22.68

96. Bar diagrams are _____ dimensional diagrams.

(A) Multi (B) Two

(C) One (D) Three

97. If the parameter of Poisson distribution is m and (Mean + S.D.) = $\frac{6}{25}$, then find m.

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

(C) $\frac{4}{25}$ (D) $\frac{3}{5}$

98. 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

99. The odds against A solving a certain problem are 4 to 3 and the odds in favour of B solving the same problem are 7 to 5. What is the probability that the problem will be solved if they both try?

(A) $\frac{15}{21}$ (B) $\frac{16}{21}$

(C) $\frac{17}{21}$ (D) $\frac{13}{21}$

100. Find the Paasche's index number for prices from the following data taking 1970 as the base year.

Commodity		1970		1975
	Price	Commodity	Price	Commodity
A	1	6	3	5
B	3	5	8	5
C	4	8	10	6

(A) 261.36 (B) 265.48

(C) 274.32 (D) 282

(21)
F03
Space For Rough Work