CDS MATHEMATICS TEST PAPER

Time: 120 min. **M.M.: 100**

INSTRUCTION: *Read questions carefully. For each wrong answer, one-third (0.33) of the marks assigned to that question will be deducted. Each question contains (1) marks.* / प्रश्नों को ध्यानपूर्वक पढ़िए। प्रत्येक गलत उत्तर के लिए, दिए गए अंकों में से एक–तिहाई (0.33) अंक काटे जायेंगे। प्रत्येक प्रश्न (1) अंक का है

1. If (b - 6) is one root of the quadratic equation $x^2 - 6x + b = 0$, where b is an integer, then what is the maximum value of b^2?
   (a) 36 (b) 49
   (c) 64 (d) 81
2. If X = {a, {b}, c},Y = {{a}, b, c} and Z = {a, b, {c}}, then (X ∩ Y) ∩ Z equals to
   (a) {a, b, c} (b) {{a}, {b}, {c}}
   (c) {Φ} (d) Φ
3. What is the maximum value of the expression $\frac{1}{x^2+5x+10}$?
   (a) $\frac{15}{4}$ (b) $\frac{15}{2}$
   (c) 1 (d) $\frac{4}{15}$

Direction: Read the following information and answer the next four questions that follow :
Let the distribution of number of scooters of companies X and Y sold by % showrooms (A,B,CD and E) in a certain year be denoted by S1 and the distribution of number of scooters of only company X sold by the five showrooms in the same year be denoted by S2

Showroom	A	B	C	D	E	Total number of scooters sold
S1 (in%)	19	21	15	33	12	6400
S2 (in%)	24	18	20	30	8	3000

4. Number of scooters of company Y sold by showroom E is what per cent of the number of scooters of both companies sold by showroom C?
   (a) 52 (b) 54
   (c) 55 (d) 56
5. What is the difference between the number of scooters of both companies sold by showroom A and total number of scooters of company X sold by showrooms B and E together?
   (a) 416 (b) 426
   (c) 432 (d) 436
6. What is the average number of scooters of company Y sold by the showrooms A, C and E?
   (a) $461\frac{1}{3}$ (b) $431\frac{1}{3}$
   (c) $426\frac{1}{3}$ (d) $416\frac{1}{3}$
7. Number of scooters of both the companies sold by showroom B is what per cent more than the number of scooters of company X sold by showroom A?
   (a) $78\frac{1}{3}$ (b) $83\frac{1}{3}$
   (c) $86\frac{2}{3}$ (d) $88\frac{1}{3}$
8. If the sum of a real number and its reciprocal is 26/5, then how many such numbers are possible?
   (a) None (b) One
   (c) Two (d) Four
9. A thin rod of length 24 feet is cut into rods of equal size and joined so as to form a skeleton cube. What is the area of one of the faces of the largest cube thus constructed?
   (a) 25 square feet (b) 24 square feet
   (c) 9 square feet (d) 4 square feet
10. Consider the following statements:
    1. If p is relatively prime to each of q and r, then p is relatively prime to the product qr.
    2. If p divides the product qr and if p divides q, then p must divide r. Which of the above statements is/are correct?
    (a) 1 only (b) 2 only
    (c) Both 1 and 2 (d) Neither 1 nor 2
11. If 10^n divides $6^{23} \times 75^9 \times 105^2$, then what is the largest value of n?
    (a) 20 (b) 22
    (c) 23 (d) 28
12. What is the digit in the unit's place of the number represented by $3^{98} - 3^{89}$?
    (a) 3 (b) 6
    (c) 7 (d) 9

Direction: Read the following frequency distribution for two series of observations and answer the next two questions that follow:

Class Interval	Frequency	
	Series-I	Series-II
10-20	20	4
20-30	15	8
30-40	10	4
40-50	x	2x
50-60	y	y
Total	100	100

13. What is the mode of the frequency distribution of Series-II?
(a) 26 (b) 36
(c) 46 (d) 56
14. What is the mean of frequency distribution of Series-I?
(a) 33.6 (b) 35.6
(c) 37.6 (d) 39.6
15. Which one of the following is not correct?
(a) 1 is neither prime nor composite
(b) 0 is neither positive nor negative.
(c) If p × q is even, then p and q are always even
(d) $\sqrt{2}$ is an irrational number
16. A square is drawn such that its vertices are lying on a circle of radius 201 mm. What is the ratio of area of circle to that of square?
(a) 11 : 7 (b) 7 : 11
(c) 20 : 19 (d) 19 : 20
17. A right circular cylinder has a diameter of 20 cm and its curved surface area is 1000 cm^2. What is the volume of the cylinder?
(a) 4000 cm^3 (b) 4500 cm^3
(c) 5000 cm^3 (d) 5200 cm^3
18. The sum of the squares of four consecutive natural numbers is 294. What is the sum of the numbers?
(a) 38 (b) 34
(c) 30 (d) 26
19. A hollow sphere of external and internal diameters 6 cm and 4 cm respectively is melted into a cone of base diameter 8 cm. what is the height of the cone?
(a) 4.75 cm (b) 5.50 cm
(c) 6.25 cm (d) 6.75 cm
20. What is the value of $\frac{(x-y)^3+(y-z)^3+(z-x)^3}{9(x-y)(y-z)(z-x)}$?
(a) 0 (b) $\frac{1}{3}$
(c) $\frac{1}{9}$ (d) 1
21. A solid metallic cylinder of height 10 cm and radius 6 cm is melted to make two cones in the ratio of volume 1 : 2 and of same height as 10 cm. What is the percentage increase in the flat surface area?
(a) 25% (b) 50%
(c) 75% (d) 100%
22. Two taps X and Y are fixed to a water tank. If only X is opened, it drains out the full tank of water in 20 minutes. If both X and Y are opened, then they drain out the full tank of water in 15 minutes. If only Y is opened, how long does it take to drain out the full tank of water
(a) 30 minutes (b) 45 minutes
(c) 60 minutes (d) 90 minutes
23. If $log_{10}1995 = 3.3000$, then what is the value of $(0.001995)^{1/8}$?
(a) $\frac{1}{10^{0.3475}}$ (b) $\frac{1}{10^{0.3375}}$
(c) $\frac{1}{10^{0.3275}}$ (d) $\frac{1}{10^{0.3735}}$
24. If the length of the hypotenuse of a right angled triangle is 10 cm, then what is the maximum area of such a right angled triangle?
(a) 100 cm^2 (b) 50 cm^2
(c) 25 cm^2 (d) 10 cm^2
25. A real number x is such that $(x - x^2)$ is maximum. What is x equal to?
(a) -1.5 (b) -0.5
(c) 0.5 (d) 1.5
26. If the ratio of the work done by $(x + 2)$ workers in $(x - 3)$ days to the work done by $(x + 4)$ workers in $(x - 2)$ days is 3 : 4, then what is the value of x?
(a) 8 (b)10
(c) 12 (d) 15
27. Six cubes, each with 12 cm edge are joined end to end. What is the surface area of resulting cuboid?
(a) 3000 cm^2 (b) 3600 cm^2
(c) 3744 cm^2 (d) 3777 cm^2
28. Let XYZ be an equilateral triangle in which XY = 7 cm. If A denotes the area of the triangle, then what is the value of $\log_{10}A^4$? (Given that $\log_{10}1050 = 3.0212$ and $\log_{10}35 = 1.5441$)
(a) 5.3070 (b) 5.3700
(c) 5.5635 (d) 5.6535
29. A bucket is in the form of a truncated cone. The diameters of the base and top of the bucket are 6 cm and 12 cm respectively. If the height of the bucket is 7 cm, what is the capacity of the bucket?
(a) 535 cm^3 (b) 462 cm^3
(c) 234 cm^3 (d) 166 cm^3
30. A person carries Rs. 500 and wants to buy apples and oranges out of it. If the cost of one apple is Rs. 5 and the cost of one orange is Rs. 7, then what is the number of ways in which a person can buy both apples and oranges using total amount?
(a) 10 (b) 14
(c) 15 (d) 17
31. The sides of a triangle are 30 cm, 28 cm and 16 cm respectively. In order to determine its area, the logarithm of which of the quantities are required?
(a) 37, 11, 28, 16 (b) 21, 30, 28, 7
(c) 37, 21, 11, 9 (d) 37, 21, 9, 7
32. A piece of wire of length 33 cm is bent into an arc of a circle of radius 14 cm. what is the angle subtended by the arc at the centre of the circle?
(a) 75° (b) 90°
(c) 135° (d) 150°
33. Two numbers p and q are such that the quadratic equation $px^2 + 3x + 2q = 0$ has -6 as the sum and the product of the roots. What is the value of (p – q)?
(a) -1 (b) 1
(c) 2 (d) 3
34. What is the LCM of the polynomials $x^3 + 3x^2 + 3x + 1, x^3 + 5x^2 + 5x + 4$ and $x^2 + 5x + 4$?
(a) $(x + 1)^3(x + 4)(x^2 + x + 1)$
(b) $(x + 4)(x^2 + x + 1)$

(c) $(x+1)(x^2+x+1)$
(d) $(x+1)^2(x+4)(x^2+x+1)$

35. What is the ratio of the area of a square inscribed in a semicircle of radius r to the area of square inscribed in a circle of radius r?
(a) 1 : 2 (b) 2 : 5
(c) 2 : 3 (d) 3 : 5

36. What is (x – a)(x – b) (x – c) equal to?
(a) $x^3-(a+b+c)x^2+(bc+ca+ab)x-a$
(b) $x^3+(a+b+c)x^2+(bc+ca+ab)x+abc$
(c) $x^3-(a+b+c)x^2+(a+b+c)x-ab$
(d) $x^3+(a+b+c)x^2+(a+b+c)x+abc$

37. If $a=7+4\sqrt{3}$ then what is the value of $+\frac{1}{a}$?
(a) 2 (b) 3
(c) 4 (d) 7

38. Consider a trapezium ABCD, in which AB is parallel to CD and AD is perpendicular to AB. If the trapezium has an incircle which touches AB at E and CD at F, where EB = 25 cm and FC = 16 cm, then what is the diameter of the circle?
(a) 16 cm (b) 25 cm
(c) 36 cm (d) 40 cm

39. What is the sum of all integer value of n for which n^2 + 19n + 92 is a perfect square?
(a) 21 (b) 19
(c) 0 (d) -19

40. The quotient when x^4-x^2+7x+5 is divided by $(x+2)$ is ax^3+bx^2+cx+d. What are the values of a, b, c and d respectively?
(a) $1,-2,3,1$ (b) $-1,2,3,1$
(c) $1,-2,-3,-1$ (d) $-1,2,-3,-1$

41. A right circular cone has a height 8 cm. If the radius of its base is 6 cm, then what is its total surface area?
(a) $96\pi\ cm^2$ (b) $69\ \pi\ cm^2$
(c) $54\ \pi\ cm^2$ (d) $48\ \pi\ cm^2$

42. The equation $x^2+px+q=0$ has roots equal to p and q where q ≠ 0. What are the values of p and q respectively?
(a) 1, -2 (b) 1, 2
(c) -1, 2 (d) -1, -2

43. The volume of a hemisphere is 155232 cm3. What is the radius of the hemisphere?
(a) 40 cm (b) 42 cm
(c) 38 cm (d) 36 cm

44. Given y is inversely proportional to √x, and x = 36 when y = 36. What is the value of x when y = 54?
(a) 54 (b) 27
(c) 16 (d) 8

45. It takes 11 hours for a 600 km journey if 120 km is done by train and the rest by car. It takes 40 minutes more if 200 km are covered by train and the rest by car. What is the ratio of speed of the car to that of the train?
(a) 3 : 2 (b) 2 : 3
(c) 3 : 4 (d) 4 : 3

Direction: Road the following information and answer the next three questions that follow:

The data shows that Indian roads are timing deadlier over the years.

Year	2014	2015	2016	2017
Number of bikers killed	40957	46070	52750	48746
Number of pedestrians killed	12330	13894	15746	20457
Number of cyclists killed	4037	3125	2585	3559

46. What was the average number of pedestrians killed per day in the year 2017?
(a) 51 (b) 53
(c) 54 (d) 56

47. What is the average number of bikers killed daily in road accidents in the year 2017?
(a) 163 (b) 152
(c) 147 (d) 134

48. What is the approximate percentage change in the pedestrians' fatalities during the period 2014-17?
(a) 66% (b) 68%
(c) 71% (d) 76%

49. How many Pairs of natural numbers are there such that the difference of their squares is 35?
(a) 1 (b) 2
(c) 3 (d) 4

50. A lent B to some amount of Rs. 25000 and lent some amount to C at same 7% simple interest. After 4 years A received Rs. 11200 as interest from B and C. How much did A lend to C?
(a) Rs. 20000 (b) Rs. 25000
(c) Rs. 15000 (d) Rs. 30000

51. A road curve is to be laid out on a circle. What radius should be used if the track is to change direction by 42° in distance of 44 m? (Assume n = 22/7)
(a) 60 m (b) 66 m
(c) 75 m (d) 80 m

52. AD is the median of the triangle ABC. If P is any point on AD, then which one of the following is correct?
(a) Area of triangle PAB is greater than the area of triangle PAC
(b) Area of triangle PAB is equal to area of triangle PAC
(c) Area of triangle PAB is one-fourth of the area of triangle PAC
(d) Area of triangle PAB is half of the area of triangle PAC

53. If $ab+xy-xb=0\ and\ bc+yz-cy=0$, then what is $\frac{x}{a}+\frac{c}{z}$ equal to?
(a) $\frac{y}{b}$ (b) $\frac{b}{y}$
(c) 1 (d) 0

54. When the class intervals have equal width, the height of a rectangle in a histogram represents
(a) Width of the class
(b) Lower class limit
(c) Upper class limit (d) Frequency of the class

55. Areas of two squares are in the ratio $m^2 : n^4$. What is the ratio of their perimeters?
(a) $m:n$ (b) $n:m$

(c) $m : n^2$ (d) $m^2 : n$

56. he two sides of a triangle are 40 cm and 41cm. If the perimeter of the triangle is 90 cm, what is its area?
(a) $90cm^2$ (b) $135\ cm^2$
(c) $150\ cm^2$ (d) $180\ cm^2$

57. X, Y and Z start at same point and same time in the same direction to run around a circular stadium. X completes a round in 252 seconds, Y in 308 seconds and Z in 198 seconds. After what time will they meet again at the starting point?
(a) 26 minutes 18 seconds
(b) 56 minutes 12 seconds
(c) 36 minutes 12 seconds
(d) 46 minutes 12 seconds

58. In a quadrilateral ABCD, ∠B = 90° and $AB^2 + BC^2 + CD^2 - AD^2 = 0$, then what is ∠ACD equal to?
(a) 30° (b) 60°
(c) 90° (d) 120°

59. The mean weight of 100 students in a class is 46 kg. The mean weight of boys is 50 kg and that of girls is 40 kg. The number of boys exceeds the number of girls by
(a) 10 (b) 15
(c) 20 (d) 25

60. The difference between two angles is 15° and sum of the angles in radian is $\frac{5\pi}{12}$. The bigger angle is k times the smaller angle. What is k equal to?
(a) $\frac{4}{3}$ (b) $\frac{3}{2}$
(c) $\frac{6}{5}$ (d) $\frac{7}{6}$

61. The sum of the squares of sides of a right-angled triangle is 8,450 square units. What is the length of its hypotenuse?
(a) 50 units (b) 55 units
(c) 60 units (d) 65 units

62. A triangle and a parallelogram have equal areas and equal bases. If the altitude of the triangle is k times the altitude of the parallelogram, then what is the value of k?
(a) 4 (b)2
(c)1 (d) $\frac{1}{2}$

63. If x varies as y, then which of the following is/are correct?
1. $x^2 + y^2$ varies as $x^2 - y^2$
2. $\frac{x}{y^2}$ varies inversely as y
3. $n\sqrt{x^2y}$ varies as $2n\sqrt{x^4y^2}$
Select the correct answer using the code given below:
(a) 1 and 2 only (b) 2 and 3 only
(c) 3 only (d) 1, 2 and 3

64. In a ΔABC, AC = 12 cm, AB = 16 cm and AD is the bisector of ∠A . If BD = 4 cm, then what is DC equal to?
(a) 2 cm (b) 3 cm
(c) 4 cm (d) 5 cm

65. Four circular coins of equal radius are placed with their centres coinciding with four vertices of a square. Each coin touches two other coins. If the uncovered area of the square is 42 cm^2, then what is the radius of each coin? (Assume $\pi = \frac{22}{7}$)
(a) 5 cm (b) 7 cm
(c) 10 cm (d) 14 cm

66. ABC is an equilateral triangle. The side BC is trisected at D such that $BC = 3\ BD$. What is the ratio of AD^2 to AB^2?
(a) 7 : 9 (b) 1 : 3
(c) 5 : 7 (d) 1 : 2

67. The diagonals of a rhombus differ by 2 units and its perimeter exceeds the sum of the diagonals by 6 units. What is the area of the rhombus?
(a) 48 square units (b) 36 square units
(c) 24 square units (d) 12 square units

68. If $\sin\theta + \cos\theta = \sqrt{2}$, then what is $sin^6\theta + cos^6\theta + 6\ sin^2\theta\ cos^2\theta$ equal to?
(a) $\frac{1}{4}$ (b) $\frac{3}{4}$
(c) 1 (d) $\frac{7}{4}$

69. The rate of interest on two different schemes is the same and it is 20%. But in one of the schemes, the interest is compounded half yearly and in the other the interest is compounded annually. Equal amounts are invested in the schemes. If the difference of the returns after 2 years is Rs. 482, then what is the principal amount in each scheme?
(a) Rs. 10,000 (b) Rs. 16,000
(c) Rs. 20,000 (d) Rs. 24,000

70. If cosec θ – sin θ = p^3 and sec θ – cos θ = q^3, then what is the value of tan θ?
(a) $\frac{p}{q}$ (b) $\frac{q}{p}$
(c) pq (d) p^2q^2

71. A river 3 m deep and 40 m wide is flowing at the rate of 2 km/hr and falls into the sea. What is the amount of water in litres that will fall into the sea from this river in a minute?
(a) 40, 00, 000 litres (b) 4, 00, 000 litres
(c) 40,000 litres (d) 4,000 litres

72. What is the maximum value of $3\sin\theta - 4$?
(a) -4 (b) -1
(c) 0 (d) 1

73. ABCD is a cyclic quadrilateral. The bisectors of the angels A, B, C and D cut the circle at P, Q, R and S respectively. What is ∠PQR + ∠RSP equal to?
(a) $90°$ (b) $135°$
(c) $180°$ (d) $270°$

74. If H, C and V are respectively the height, curved surface area and volume of a cone, then $3\pi VH^3 + 9V^2$ is equal to
(a) C^2H^2 (b) $2\ C^2H^2$
(c) $5\ C^2H^2$ (d) $7\ C^2H^2$

75. What is the area of a segment of a circle of radius r subtending an angle θ at the centre?
(a) $\frac{1}{2}r^2\theta$ (b) $\frac{1}{2}r^2(\theta - 2sin\frac{\theta}{2}cos\frac{\theta}{2})$
(c) $\frac{1}{2}r^2(\theta - sin\frac{\theta}{2}cos\frac{\theta}{2})$ (d) $\frac{1}{2}r^2\, sin\frac{\theta}{2}cos\frac{\theta}{2}$

76. If 0 < α, β < 90° such that cos (α – β) = 1, then what is sin α – sin β + cos α – cos β equal to?
(a) -1 (b) 0
(c)1 (d) 2

77. A shopkeeper sells his articles at their cost price but uses a faulty balance which reads 1000 gm for 800 gm. What is the actual profit percentage?
(a) 20% (b) 25%
(c) 30% (d) 40%

78. If p, q, r, s and t represent length, breadth, height, surface area and volume of a cuboid respectively, then what is $\frac{1}{P}+\frac{1}{q}+\frac{1}{r}$ equal to?
(a) $\frac{s}{t}$ (b) $\frac{2t}{s}$
(c) $\frac{s}{2t}$ (d) $\frac{2s}{t}$

79. If cos47° + sin 47° = k, then what is the value of $\cos^2 47° - \sin^2 47°$?
(a) $k\sqrt{2-k^2}$ (b) $-k\sqrt{2-k^2}$
(c) $k\sqrt{1-k^2}$ (d) $-k\sqrt{1-k^2}$

80. Three persons start a business with capitals in the ratio $\frac{1}{3}:\frac{1}{4}:\frac{1}{5}$. The first person withdraws half his capital after 4 months. What is his share of profit if the business fetches an annual profit of Rs. 96,800?
(a) Rs. 32,000 (b) Rs. 34,500
(c) Rs. 36,000 (d) Rs. 36,800

81. Which one of the following measures of central tendency will be used to determine the average size of the shoe sold in the shop?
(a) Arithmetic mean (b) Geometric mean
(c) Median (d) Mode

82. ABC is a triangle right-angled at C. Let P be any point on AC and Q be any point on BC. Which of the following statements is/are correct?
1. $AQ^2 + BP^2 = AB^2 + PQ^2$
2. AB = 2PQ
Select the correct answer using the code given below :
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

83. A circle is inscribed in a triangle ABC. It touches the sides AB and AC at M and N respectively. If O is the centre of the circle and ∠A = 70°, then what is ∠MON equal to?
(a) 90° (b) 100°
(c) 110° (d) 120°

84. How many solid lead balls each of diameter 2 mm can be made from a solid lead ball of radius 8 cm.
(a) 512 (b) 1024
(c) 256000 (d) 512000

85. What is the area of a right-angled triangle, if the radius of the circumcircle is 5 cm and altitude drawn to the hypotenuse is 4 cm?
(a) 20 cm^2 (b) 18 cm^2
(c) 16 cm^2 (d) 10 cm^2

86. Consider the following statements:
1. The diagonals of a trapezium divide each other proportionally.
2. Any line drawn parallel to the parallel sides of a trapezium divides the non-parallel sides proportionally.
Which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

87. The mean of five observations x, x + 2, x + 4, x + 6, x + 8 is m. What is the mean of the first three observations?
(a) m (b) m – 1
(c) m – 2 (d) m – 3

88. If a television set is sold at Rs. x, a loss of 28% would be incurred. If television is sold at y Rs, a profit of 12% would be incurred. What is the ratio of y to x
(a) 41 : 9 (b) 31 : 9
(c) 23 : 9 (d) 14 : 9

89. Consider the following statements:
1. The equation $2\,sin^2\theta - \cos\theta + 4 = 0$ is possible for all θ.
2. $\tan\theta + \cot\theta$ cannot be less than 2, where $0 < \theta < \frac{\pi}{2}$.
which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

90. The radii of the flat circular faces of a bucket are x and 2x. If the height of the bucket is 3x, what is the capacity of the bucket? $\left(Assume\ \pi = \frac{22}{7}\right)$
(a) $11x^3$ (b) $22x^3$
(c) $44x^3$ (d) $55x^3$

91. What is the least value of 9 $sin^2\theta$ + 16 $cos^2\theta$?
(a) 0 (b) 9
(c) 16 (d) 25

92. What is the value of $\frac{1}{1+\sqrt{2}}+\frac{1}{\sqrt{2}+\sqrt{3}}+\frac{1}{\sqrt{3}+\sqrt{4}}+\cdots+\frac{1}{\sqrt{99}+\sqrt{100}}=?$
(a) 1 (b) 5
(c) 9 (d) 10

93. Consider the following statements :
1) The value of cos 61° + sin 29° cannot exceed 1
2) The value of tan 23° – cot 67° is less than 0.
Which of the above statements is\are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

94. The number of items in a booklet is N. in the first year there is an increase of x% in this number and in the subsequent year there is a decrease of x%. At the end of the two years, what will be the number of items in the booklet?
(a) Less than N (b) Equal to N
(c) More than N (d) It depends on the value of N

95. By increasing the speed of his car by 15 km/hr, a person covers a distance of 300 km by taking an hour less than before. What was the original speed of the car?
(a) 45 km/hr (b) 45 km/hr
(c) 60 km/hr (d) 75 km/hr

96. A person sold an article for Rs. 75 which cost him Rs. x. He finds that he realised x% profit on his outlay. What is x equal to?
(a) 20% (b) 25%
(c) 50% (d) 100%

97. The harmonic mean and the geometric mean of two numbers are 10 and 12 respectively. What is their arithmetic mean?
(a) $\frac{25}{3}$ (b) $\sqrt{120}$
(c) 11 (d) 14.4

98. A bicycle wheel makes 5000 revolutions in moving 11 km. What is the radius of the wheel? (Assume π = 22/7)
(a) 17.5 cm (b) 35 cm
(c) 70 cm (d) 140 cm

99. What is the algebraic sum of the deviations from the mean of a set of values 25, 65, 73, 75, 83, 76, 17, 26, 7, 14?
(a) -1 (b) 0
(c) 1 (d) 2

100. If x men working x hours per day can do x units of works in x days, then y men working y hours per day in y days would be able to do k units of work. What is the value of k?
(a) x^2x^{-3} (b) x^3x^{-2}
(c) y^2x^{-3} (d) y^3x^{-2}

CDS MATHEMATICS TEST-0104
ANSWER KEY (01-04-2023)

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