THE RANKERS ACADEMY

Sure shots Maths Questions (Most Probable)

10th session 2024-25

1. Real Numbers

1. If two positive integers p and q can be expressed as $p = 18\,a^2b^4$ and $q = 20\,a^3b^2$, where a and b are prime numbers, then LCM (p, q) is; **(1 M) (2024)**

(a) $2\,a^2b^2$ (b) $180\,a^2b^2$

(c) $12\,a^2b^2$ (d) $180\,a^3b^4$

2. If the HCF (2520, 6600) = 40 and LCM (2520, 6600) $= 252 \times k$, then the value of k is **(1 M) (2024)**

(a) 1650 (b) 1600

(c) 165 (d) 1625

3. The exponent of 5 in the prime factorisation of 3750 is: **(1 M) (2022 Term-I)**

(a) 3 (b) 4 (c) 5 (d) 6

4. Three alarm clocks ring their alarms at regular intervals of 20 min, 25 min and 30 min respectively. If they first beep together at 12 noon, at what time will they beep again for the first time? **(1 M) (2022 Term-I)**

(a) 4:00 pm (b) 4:30 pm

(c) 5:00 pm (d) 5:30 pm

5. Prove that $5-2\sqrt{3}$ is an irrational number. It is given that $\sqrt{3}$ is an irrational number. **(2 M) (2024)**

6. Find the LCM and HCF of 72 and 120. **(2 M) (2023)**

7. Prove that $\sqrt{5}$ is an irrational number. **(3 M) (2024)**

2. Polynomials

8. If α and β are zeroes of the polynomial $2x^2 - 9x + 5$, then value of $\alpha^2 + \beta^2$ is **(1 M) (2024)**

(a) $\frac{1}{4}$ (b) $\frac{61}{4}$ (c) 1 (d) $\frac{71}{4}$

9. If α, β are the zeroes of the polynomial $p(x) = 4x^2 - 3x - 7$, then $\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)$ is equal to: **(1 M) (2023)**

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

10. If one zero of the polynomial $x^2 + 3x + k$ is 2, then the value of k. **(1 M) (2023)**

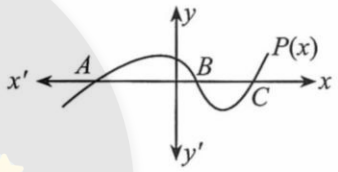
(a) -10 (b) 10 (c) 5 (d) -5

11. If the zeroes of the quadratic polynomial $x^2 + (a + 1)\,x + b$ are 2 and -3, then **(1 M) (2023)**

(a) $a = -7, b = -1$ (b) $a = 5, b = -1$

(c) $a = 2, b = -6$ (d) $a = 0, b = -6$

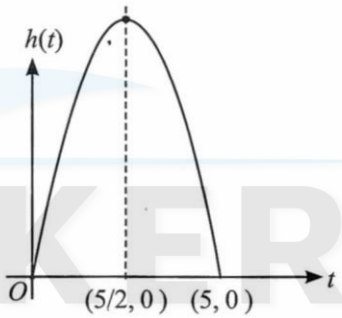
12. In figure, the graph of a polynomial $P(x)$ is shown. The number of zeroes of $P(x)$ is **(1 M) (2022 Term-I)**



(a) 1 (b) 2 (c) 3 (d) 4

13. Find a quadratic polynomial, the sum and product of whose zeroes are 0 and $-\frac{3}{5}$ respectively. Hence find the zeroes. **(3 M) (2016 Term-I)**

14. A ball is thrown in the air so that t seconds after it is thrown, its height H metre above its starting point is given by the polynomial $h = 25t - 5t^2$. **(2024)**



Observe the graph of the polynomial and answer the following questions:

(*i*) Write zeroes of the given polynomial. **(1 M)**

(*ii*) Find the maximum height achieved by ball. **(1 M)**

(*iii*) (*a*) After throwing upward, how much time did the ball take to reach to the height of 30 m? **(2 M)**

OR

(*iii*) (*b*) Find the two different values of t when the height of the ball was 20 m. **(2 M)**

3. Pair of Linear Equation in Two Variables

15. The value of k for which the system of equations $3x - y + 8 = 0$ and $6x - ky + 16 = 0$ has infinitely many solutions, is **(1 M) (2024)**

(*a*) -2 (*b*) 2 (*c*) $\frac{1}{2}$ (*d*) $-\frac{1}{2}$

16. The value of k for which the system of linear equations $x + 2y = 3$, $5x + ky + 7 = 0$ is inconsistent is **(1 M) (2020)**

(*a*) $-\frac{14}{3}$ (*b*) $\frac{2}{5}$ (*c*) 5 (*d*) 10

17. Find the value of k for which the following pair of linear equations have infinitely many solutions. $2x + 3y = 7$, $(k+1)x + (2k-1)y = 4k + 1$. **(2 M) (2019)**

18. A fraction becomes $\frac{1}{3}$ when 2 is subtracted from the numerator and it becomes $\frac{1}{2}$ when 1 is subtracted from the denominator. Find the fraction. **(3 M) (2019)**

19. The sum of the digits of a two digit number is 8 and the difference between the number and that formed by reversing the digits is 18. Find the number. **(3 M) (2016 Term-I)**

20. Two schools 'P' and 'Q' decided to award prizes to their students for two games of Hockey ₹ x per student and Cricket ₹ y per student. School 'P' decided to award a total of ₹ 9,500 for the two games to 5 and 4 students respectively; while school 'Q' decided to award ₹ 7,370 for the two games to 4 and 3 students respectively.

Based on the above information, answer the following questions: **(2023)**

(*i*) Represent the following information algebraically (in terms of x and y). **(1 M)**

(*ii*) (*a*) What is the prize amount for hockey? **(2 M)**

OR

(*b*) Prize amount on which game is more and by how much?

(*iii*) What will be the total prize amount if there are 2 students each from two games? **(1 M)**

4. Quadratic Equations

21. If the quadratic equation $ax^2 + bx + c = 0$ has two real and equal roots, then 'c' is equal to: **(1 M) (2023)**

(*a*) $\frac{-b}{2a}$ (*b*) $\frac{b}{2a}$ (*c*) $\frac{-b^2}{4a}$ (*d*) $\frac{b^2}{4a}$

22. Solve the quadratic equation: $x^2 - 2ax + (a^2 - b^2) = 0$ for x. **(2 M) (2022 Term-II)**

23. Solve for x: $\sqrt{2x+9} + x = 13$ **(2 M) (2016 Term-II)**

24. Find the value of 'p' for which the quadratic equation $p(x-4)(x-2) + (x-1)^2 = 0$ has real and equal roots. **(3 M) (2022 Term-II)**

25. A train covers a distance of 480 km at a uniform speed. If the speed had been 8 km/h less, then it would have taken 3 hours more to cover the same distance. Find the original speed of the train. **(3 M) (2020)**

26. The total cost of a certain length of a piece of cloth is ₹ 200. If the piece was 5 m longer and each metre of cloth costs ₹ 2 less, the cost of the piece would have remained unchanged. How long is the piece and what is its original rate per metre? **(4 M) (2019)**

27. Solve for x: $\frac{1}{2x-3} + \frac{1}{x-5} = 1\frac{1}{9}, x \neq \frac{3}{2}, 5$ **(4 M) (2017)**

5. Arithmetic Progressions

28. In an A.P., if the first term $a = 7$, nth term, $a_n = 84$ and the sum of first n terms $s_n = \frac{2093}{2}$, then n is equal to: **(1 M) (2024)**

(*a*) 22 (*b*) 24 (*c*) 23 (*d*) 26

29. Which term of the A.P. $-29, -26, -23, \ldots\ldots, 61$ is 16? **(1 M) (2024)**

(*a*) 11^{th} (*b*) 16^{th} (*c*) 10^{th} (*d*) 31^{st}

30. Which term of the A.P. $-\frac{11}{2}, -3, -\frac{1}{2}, \ldots.$ is $\frac{49}{2}$? **(2 M) (2022 Term-II)**

31. If in an A.P., the sum of first m terms is n and the sum of its first n terms is m, then prove that the sum of its first $(m + n)$ terms is $-(m + n)$. **(3 M) (2020)**

32. If the m^{th} term of an A.P. is $\frac{1}{n}$ and n^{th} term is $\frac{1}{m}$ then show that its $(mn)^{th}$ term is 1. **(3 M) (2017)**

33. The sum of four consecutive numbers in an AP is 32 and the ratio of the product of the first and the last term to the product of two middle terms is 7 : 15. Find the numbers.

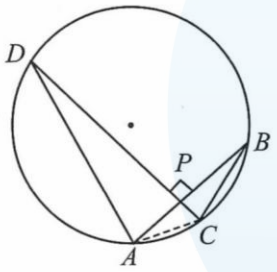
(4 M) (2018)

34. Find the sum of integers between 100 and 200 which are (*i*) divisible by 9 (*ii*) not divisible by 9. **(5 Marks) (2023)**

6. Triangles

35. AB and CD are two chords of a circle intersecting at P. Choose the correct statement from the following:

(1 M) (2024)



(*a*) $\Delta ADP \sim \Delta CBA$ (*b*) $\Delta ADP \sim \Delta BPC$

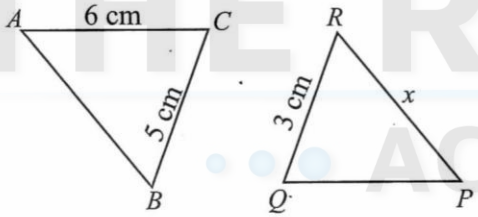
(*c*) $\Delta ADP \sim \Delta BCP$ (*d*) $\Delta ADP \sim \Delta CBP$

36. The perimeters of two similar triangles ABC and PQR are 56 cm and 48 cm respectively, PQ/AB is equal to

(1 M) (2024)

(*a*) $\frac{7}{8}$ (*b*) $\frac{6}{7}$ (*c*) $\frac{7}{6}$ (*d*) $\frac{8}{7}$

37.

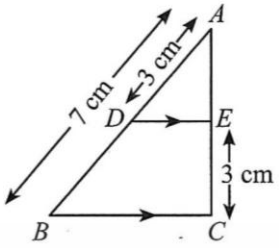


In the given figure, $\Delta ABC \sim \Delta QPR$, If $AC = 6$ cm, $BC = 5$ cm, $QR = 3$ cm and $PR = x$; then the value of x is: **(1 M) (2023)**

(*a*) 3.6 cm (*b*) 2.5 cm

(*c*) 10 cm (*d*) 3.2 cm

38. In the given figure, $DE \parallel BC$. If $AD = 3$ cm, $AB = 7$ cm and $EC = 3$ cm, then the length of AE is: **(1 M) (2023)**



(*a*) 2 cm (*b*) 2.25 cm

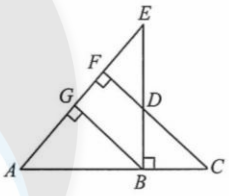
(*c*) 3.5 cm (*d*) 4 cm

39. In ΔDEW, $AB \parallel EW$. If $AD = 4$ cm, $DE = 12$ cm and $DW = 24$ cm, then find the value of DB.

(1 M) (2016 Term-I)

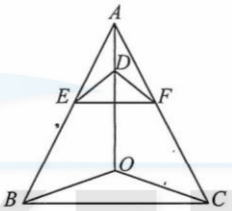
40. In given figure, $EB \perp AC$, $BG \perp AE$ and $CF \perp AE$. Prove that:

(3 M) (2016 Term-I)

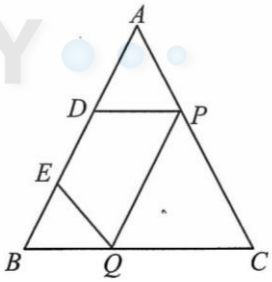


(*i*) $\Delta ABG \sim \Delta DCB$ (*ii*) $\frac{BC}{BD} = \frac{BE}{BA}$

41. In the figure if $DE \parallel OB$ and $EF \parallel BC$, then prove that $DF \parallel OC$. **(3 M) (2015 Term-I)**



42. In the figure, there are two points D and E on side AB of ΔABC such that $AD = BE$. If $DP \parallel BC$ and $EQ \parallel AC$, then prove that $PQ \parallel AB$. **(4 M) (2015 Term-I)**



7. Coordinate Geometry

43. The distance of the point (–4, 3) from y-axis is:

(1 M) (2023)

(a) –4 (b) 4 (c) 3 (d) 5

44. Find the coordinates of a point A, where AB is a diameter of the circle with centre (–2, 2) and B is the point with coordinates (3, 4). **(1 M) (2019)**

45. Find the ratio in which the point $P\left(\frac{3}{4}, \frac{5}{12}\right)$ divides the line segment joining the points $A\left(\frac{1}{2}, \frac{3}{2}\right)$ and $B(2, -5)$.

(2 M) (2015 Term-II)

46. Find the ratio in which the point $\left(\frac{8}{5}, y\right)$ divides the line segment joining the points (1, 2) and (2, 3). Also, find the value of y. **(3 M) (2024)**

47. The line segment joining the points $A(2, 1)$ and $B(5, -8)$ is trisected at the points P and Q such that P is nearer to A. If P also lies on the line given by $2x - y + k = 0$, find the value of k. **(3 M) (2019)**

48. If the point $P(x, y)$ is equidistant from the points $A(a + b, b - a)$ and $B(a - b, a + b)$. Prove that $bx = ay$.

(3 M) (2016 Term-II)

49. Find the coordinates of a point P on the line segment joining $A(1, 2)$ and $B(6, 7)$ such that $AP = \frac{2}{5}AB$.

(3 M) (2015 Term-II)

8. Introduction to Trigonometry

50. If $2\sin(A+B) = \sqrt{3}$ and $\cos(A - B) = 1$, then find the measures of angles A and B. $0 \le A, B, (A + B) \le 90°$.

(2 M) (2024)

51. Prove that $\frac{\sin A - 2\sin^3 A}{2\cos^3 A - \cos A} = \tan A$ **(3 M) (2023)**

52. If $\sin\theta + \cos\theta = p$ and $\sec\theta + \operatorname{cosec}\theta = q$, then prove that $q(p^2 - 1) = 2p$. **(3 M) (2023)**

53. Prove that: $2(\sin^6\theta + \cos^6\theta) - 3(\sin^4\theta + \cos^4\theta) + 1 = 0$.

(3 M) (2020)

54. Find A and B if $\sin(A + 2B) = \frac{\sqrt{3}}{2}$ and $\cos(A + 4B) = 0$, where A and B are acute angles. **(3 M) (2019)**

55. If $4\tan\theta = 3$, evaluate $\left(\frac{4\sin\theta - \cos\theta + 1}{4\sin\theta + \cos\theta - 1}\right)$ **(3 M) (2018)**

56. Prove that $\frac{\tan^2 A}{\tan^2 A - 1} + \frac{\operatorname{cosec}^2 A}{\sec^2 A - \operatorname{cosec}^2 A} = \frac{1}{1 - 2\cos^2 A}$

(4 M) (2019)

57. Prove that: $\frac{\sin A + \cos A}{\sin A - \cos A} + \frac{\sin A - \cos A}{\sin A + \cos A} = \frac{2}{1 - 2\cos^2 A}$

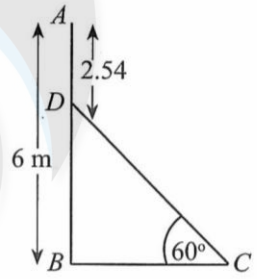
(4 M) (2016 Term-I)

9. Some Applications of Trigonometry

58. If a pole 6 m high casts a shadow $2\sqrt{3}$ m long on the ground, then sun's elevation is: **(1 M) (2023)**

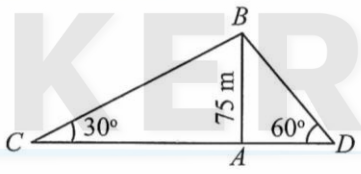
(a) 60° (b) 45° (c) 30° (d) 90°

59. In Fig., AB is a 6 m high pole and CD is a ladder inclined at an angle of 60° to the horizontal and reaches up to a point D of pole. If AD = 2.54 m, find the length of the ladder. (Use $\sqrt{3} = 1.73$) **(1 M) (2016 Term-II)**



60. Two men on either side of a cliff 75 m high observe the angles of elevation of the top of the cliff to be 30° and 60°. Find the distance between the two men.

(3 M) (2022 Term-II)



61. There is a small island in the middle of a 100 m wide river and a tall tree stands on the island. P and Q are points directly opposite to each other on two banks and in line with the tree. If the angles of elevation of the top of the tree from P and Q are respectively 30° and 45°, find the height of the tree. (Use $\sqrt{3} = 1.732$) **(3 M) (2022 Term-II)**

62. The angles of depression of the top and bottom of a 50 m high building from the top of a tower are 45° and 60° respectively. Find the height of the tower and the horizontal distance between the tower and the building. (use $\sqrt{3} = 1.73$) ***(3 M)* (2016 Term-II)**

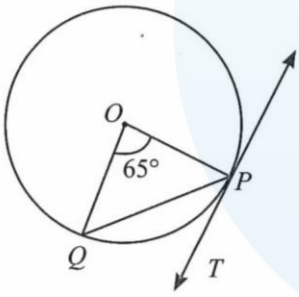
63. A man observes a car from the top of a tower, which is moving towards the tower with a uniform speed. If the angle of depression of the car changes from 30° to 45° in 12 minutes, find the time taken by the car now to reach the tower. ***(4 M)* (2017)**

64. At a point A, 20 metres above the level of water in a lake, the angle of elevation of a cloud is 30°. The angle of depression of the reflection of the cloud in the lake, at A is 60°. Find the distance of the cloud from A.

***(4 M)* (2015 Term-II)**

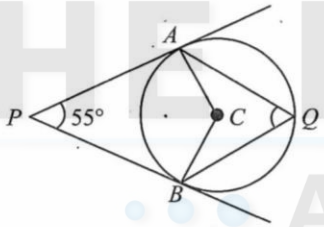
10. Circles

65. In the given figure, PT is tangent to a circle with centre O. Chord PQ subtends an angle of 65° at the centre. The measure of $\angle QPT$ is: ***(1 M)* (2024)**



(*a*) 65° (*b*) 57.5° (*c*) 67.5° (*d*) 32.5°

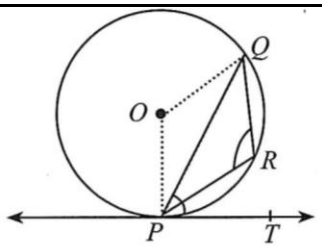
66. In the given figure, PA and PB are tangents from external point P to a circle with centre C and Q is any point on the circle. Then the measure of $\angle AQB$ is: ***(1 M)* (2023)**



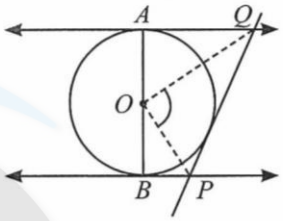
(*a*) $62\frac{1}{2}°$ (*b*) 125° (*c*) 55° (*d*) 90°

67. In Figure, PQ is a chord of a circle with centre O and PT is a tangent. If $\angle QPT = 60°$, find $\angle PRQ$.

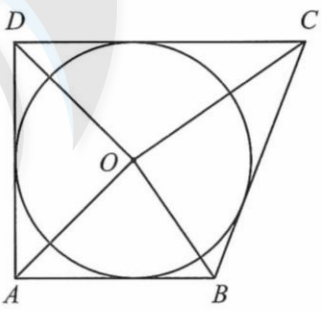
***(1 M)* (2015 Term-II)**



68. In the given figure, AB is a diameter of the circle with centre O. AQ, BP and PQ are tangents to the circle. Prove that $\angle POQ = 90°$. ***(3 M)* (2024)**



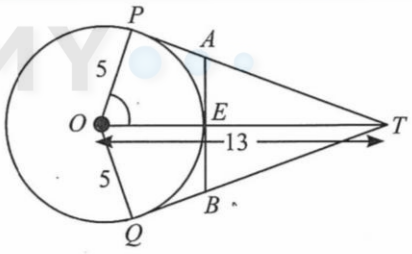
69. In the given figure, AB, BC, CD and DA are tangents to the circle with centre O forming a quadrilateral $ABCD$ Show that $\angle AOB + \angle COD = 180°$. ***(3 M)* (2024)**



70. Prove that the lengths of two tangents drawn from an external point to a circle are equal. ***(4 M)* (2017)**

71. In Fig., O is the centre of a circle of radius 5 cm. T is a point such that $OT = 13$ cm and OT intersects circle at E. If AB is a tangent to the circle at E, find the length of AB, where TP and TQ are two tangents to the circle.

***(4 M)* (2016 Term-II)**

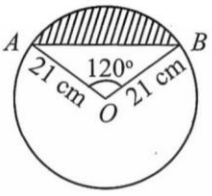


11. Areas Related to Circles

72. The perimeter of a sector of a circle of radius 5.2 cm is 16.4 cm. Find the area of the sector. ***(2 M)* (2020)**

73. Find the area of the segment shown in Fig., if radius of the circle is 21 cm and $\angle AOB = 120°$ $\left(\text{Use } \pi = \frac{22}{7}\right)$

***(3 M)* (2019)**



74. Find the area of the minor segment of a circle of radius 14 cm, when its central angle is 60°. Also find the area of the corresponding major segment. $\left[\text{Use } \pi = \frac{22}{7}\right]$

***(3 M)* (2015 Term-II)**

75. A chord PQ of a circle of radius 10 cm subtends an angle of 60° at the centre of circle. Find the area of major and minor segments of the circle. ***(4 M)* (2017)**

12. Surface Areas and Volumes

Directions: In Q. No. 76 a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

(*a*) Both, Assertion (A) and Reason (R) are true and Reason (R) is correct explanation of Assertion (A).

(*b*) Both, Assertion (A) and Reason (R) are true but Reason (R) is not correct explanation for Assertion (A).

(*c*) Assertion (A) is true but Reason (R) is false.

(*d*) Assertion (A) is false but Reason (R) is true.

76. Assertion (A): Two cubes each of edge length 10 cm are joined together. The total surface area of newly formed cuboid is 1200 cm^2.

Reason (R): Area of each surface of a cube of side 10 cm is 100 cm^2. ***(1 M)* (2024)**

77. The curved surface area of a right circular cylinder is 176 sq. cm and its volume is 1232 cu. cm. What is the height of the cylinder? ***(2 M)* (2022 Term-II)**

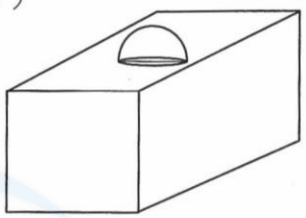
78. A wooden article was made by scooping out a hemisphere from each end of a solid cylinder, as shown in Fig. If the height of the cylinder is 10 cm and its base is of radius 3.5 cm. Find the total surface area of the article. ***(3 M)* (2018)**

79. A heap of rice is in the form of a cone of base diameter 24 m and height 3.5 m. Find the volume of the rice. How much canvas cloth is required to just cover the heap?

***(3 M)* (2018)**

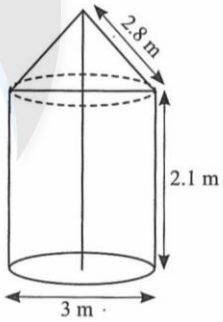
80. From a solid right circular cylinder of height 2.4 cm and radius 0.7 cm, a right circular cone of same height and same radius is cut out. Find the total surface area of the remaining solid. ***(3 M)* (2017)**

81. In Fig., is a decorative block, made up of two solids–a cube and a hemisphere. The base of the block is a cube of side 6 cm and the hemisphere fixed on the top has a diameter of 3.5 cm. Find the total surface area of the block. $\left(\text{Use } \pi = \frac{22}{7}\right)$ ***(3 M)* (2016 Term-II)**



82. In fig., a tent is in the shape of a cylinder surmounted by a conical top of same diameter. If the height and diameter of cylindrical part are 2.1 m and 3 m respectively and the slant height of conical part is 2.8 m, find the cost of canvas needed to make the tent if the canvas is available at the rate of ₹ 500 per sq.metre.

$\left(\text{Use } \pi = \frac{22}{7}\right)$ ***(3 M)* (2016 Term-II)**



83. A solid wooden toy is in the form of a hemisphere surmounted by a cone of same radius. The radius of hemisphere is 3.5 cm and the total wood used in the making of toy is $166\frac{5}{6}$ cm^3. Find the height of the toy. Also, find the cost of painting the hemispherical part of the toy at the rate of ₹ 10 per cm^2. $\left[\text{Use } \pi = \frac{22}{7}\right]$

***(3 M)* (2015 Term-II)**

13. Statistics

84. If value of each observation in a data is increased by 2, then median of the new data ***(1 M)* (2024)**

(*a*) increases by 2 (*b*) increases by $2n$

(*c*) remains same (*d*) decreases by 2

85. From the following frequency distribution, find the median class. ***(1 M)* (2016 Term-I)**

Cost of Living Index	1400–1550	1550–1700	1700–1850	1850–2000
No. of weeks	8	15	21	8

86. Following table shows sale of shoes in a store during one month: ***(1 M)* (2015 Term-I)**

Size of Shoe	3	4	5	6	7	8
Number of Pairs Sold	4	18	25	12	5	1

Find the modal size of the shoes sold.

87. Find the mean of the following distribution: ***(2 M)* (2020)**

Class	3–5	5–7	7–9	9–11	11–13
Frequency	5	10	10	7	8

88. Find the mode of the following data:

Class	0-20	20-40	40-60	60-80	80-100	100-120	120-140
Frequency	6	8	10	12	6	5	3

***(2 M)* (2020)**

89. Given below is the distribution of weekly pocket money received by students of a class. Calculate the pocket money that is received by most of the students.

***(2 M)* (2015 Term-I)**

Pocket Money (in ₹)	0–20	20–40	40–60	60–80	80–100	100–120	120–140
No. of Students	2	2	3	12	18	5	2

90. In a test, the marks obtained by 100 students (out of 50) are given below:

Marks obtained	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	12	23	34	25	6

Find the mean marks of the students. ***(3 M)* (2024)**

91. Find the mean of the following distribution by Assumed Mean Method: ***(3 M)* (2016 Term-I)**

Class Interval	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Frequency	8	7	12	23	11	13	8	6	12

92. In a class test, marks obtained by 120 students are given in the following frequency distribution. If it is given that mean is 59, find the missing frequencies x and y.

***(4 M)* (2016 Term-I)**

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
No. of Students	1	3	7	10	15	x	9	27	18	y

14. Probability

93. If the probability of a player winning a game is 0.79, then the probability of his losing the same game is:

***(1 M)* (2024)**

(*a*) 1.79 (*b*) 0.31 (*c*) 0.21% (*d*) 0.21

94. A letter of English alphabet is chosen at random. Determine the probability that the chosen letter is a consonant.

***(1 M)* (2015 Term-II)**

95. If a number x is chosen at random from the numbers $-3, -2, -1, 0, 1, 2, 3$. What is probability that $x^2 \leq 4$?

***(2 M)* (2020)**

96. A die is thrown once. Find the probability of getting a number which (*i*) is a prime number (*ii*) lies between 2 and 6. ***(2 M)* (2019)**

97. Three distinct coins are tossed together. Find the probability of getting ***(3 M)* (2015 Term-II)**

(*i*) at least 2 heads

(*ii*) at most 2 heads

98. Two different dice are thrown together. Find the probability that the numbers obtained have: ***(4 M)* (2017)**

(*i*) even sum, and ,

(*ii*) even product.

99. A game of chance consists of spinning an arrow on a circular board, divided into 8 equal parts, which comes to rest pointing at one of the numbers 1, 2, 3, ..., 8 (Fig.), which are equally likely outcomes. What is the probability that the arrow will point at (*i*) an odd number (*ii*) a number greater than 3 (*iii*) a number less than 9.

***(4 M)* (2016 Term-II)**

100. "Eight Ball" is a game played on a pool table with 15 balls numbered 1 to 15 and a "cue ball" that is solid and white. Of the 15 numbered balls, eight are solid (non-white) coloured and numbered 1 to 8 and seven are striped balls numbered 9 to 15. **(2023)**

The 15 numbered pool balls (no cue ball) are placed in a large bowl and mixed, then one ball is drawn out at random.

Based on the above information, answer the following questions:

(*i*) What is the probability that the drawn ball bears number 8? ***(1 M)***

(*ii*) What is the probability that the drawn ball bears an even number? ***(2 M)***

OR

What is the probability that the drawn ball bears a number, which is a multiple of 3?

(*iii*) What is the probability that the drawn ball is a solid coloured and bears an even number? ***(1 M)***