

QUESTION PAPER 5

Time : 3 Hours]

[Total Marks : 80

Instructions

As per Question Paper 1.

Section A

Answer the following as per instructions given : 24

[Q. nos. 1 to 24 - 1 mark each]

- Fill in the blanks by selecting the proper alternatives from those given below each question : (Q. nos. 1 to 6)

1. If the pair of equations $2x + 7y = 13$ and $5x + ky = 32$ has a unique solution, then holds good.
- A. $k = 17.5$ B. $k = 15.7$
C. $k \neq 17.5$ D. $k \neq 15.7$

2. If $\frac{5}{2}$ is one of the roots of the equation $10x^2 - 29x + k = 0$, then $k = \dots\dots\dots$
A. 25 B. -25 C. -10 D. 10
3. For a given AP, if $d = -4$, $n = 7$ and $a_n = 4$, then $a = \dots\dots\dots$
A. 6 B. 7 C. 20 D. 28
4. Point $(5, -12)$ lies on a circle with the origin as the centre. Then, the radius of that circle is units.
A. -7 B. 7 C. 13 D. 10

5. $\cos^4 \theta - \sin^4 \theta = \dots\dots\dots$
 A. 1 B. 0
 C. $\cos^2 \theta - \sin^2 \theta$ D. $\cos^2 \theta + \sin^2 \theta$
6. For some given data, if $Z + \bar{x} = 98$ and $Z - \bar{x} = 12$, then $M = \dots\dots\dots$ by the inter relationship of mean, median and mode.
 A. 55 B. 43 C. 47 D. 45

• **Fill in the blanks by selecting the proper answer from those given in the brackets to make the statements true : (Q. nos. 7 to 12)**

7. If $\text{HCF}(65, 117) = 3k - 2$, then $k = \dots\dots\dots$ (5, 4, 3)
8. If the product of the zeroes of the polynomial $p(x) = 6x^2 - x + k$ is $-\frac{1}{3}$, then $k = \dots\dots\dots$ (2, -2, 6)
9. In a 80-mark test of Mathematics, the probability of Rayna scoring 80 out of 80 marks is $\dots\dots\dots$ ($\frac{1}{80}$, 1, $\frac{1}{81}$)
10. $\tan^2 \theta - \sec^2 \theta = \dots\dots\dots$ (0, 1, -1)
11. Point P lies in the exterior of a circle with centre O. Tangents PA and PB drawn from point P are inclined to each other at 58° . Then $\angle POA = \dots\dots\dots$ (122° , 58° , 61°)

12. For a given frequency distribution, if $\sum f_i x_i = 245$ and $\sum f_i = 100$, then $\bar{x} = \dots\dots\dots$ (24.5, 2.45, 245)

• **State whether the following statements are true or false : (Q. nos. 13 to 16)**

13. The LCM of 35 and 42 is 35×42 .
14. For the quadratic polynomial $p(x) = x^2 + 5x + 4$, the sum of the zeroes is greater than the product of the zeroes.

15. The pair of linear equations $5x - 15y = 8$ and $3x - 9y = \frac{24}{5}$ has infinitely many solutions.

16. If $P(A) = \frac{3}{4}$, then $P(\bar{A}) = \frac{4}{3}$.

• **Answer the following question in one sentence, word or figure : (Q. nos. 17 to 20)**

17. Find the common difference of the AP -5, -1, 3, 7, ...
18. At the most how many tangents can be drawn parallel to the diameter of a circle?
19. A letter is chosen at random from the English alphabet. Find the probability that the chosen letter is a vowel.
20. If the median of the observations 8, 12, 17, x, 25, 28 is 20, find x.

• **Match the following pairs correctly : (Q. nos. 21 to 24)**

'A'	'B'
21. LSA of a cuboid	(a) Perimeter of base \times Height
22. Volume of a cone	(b) Area of base \times Height (c) $\frac{1}{3} \times$ Area of base \times Height
'A'	'B'
23. Sector	(a) Portion of a circular region enclosed by an arc and two radii.
24. Segment	(b) Any part of the circumference of a circle. (c) Portion of a circular region bounded by an arc and the chord joining the end-points of the arc.