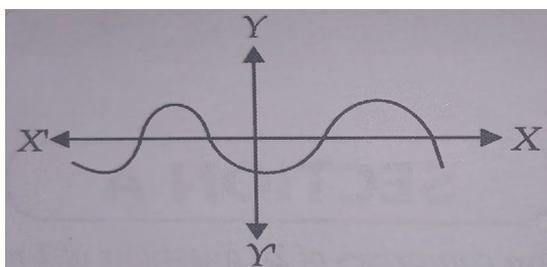


JINDAL SCHOOL, BARBIL
CLASS-10 MATHEMATICS (STANDARD / BASIC)
OBJECTIVE TYPE - 20 MARKS

- Q1. The sum of the ages of a father and his son is 45 years. Five years ago, the father's age was four times that of his son. What is the present age of the son?
(A) 7 years (B) 9 years (C) 10 years (D) 12 years
- Q2. If probability of choosing a defective pen from a box of 500 pens is 0.06, how many pens are good?
(A) 30 (B) 470 (C) 480 (D) 490
- Q3. If $a = 2^4 \times 3^2 \times 5^x$, $b = 2^3 \times 3 \times 5^2$, $c = 2^2 \times 3^3 \times 5$ and $\text{HCF}(a, b, c) = 2^2 \times 3^1 \times 5^1$ then the value of x can't be:
(A) 0 (B) 2 (C) 1 (D) 3
- Q4. The ratio of lateral surface area to the total surface area of a cylinder with base diameter 1.6 m and height 20 cm
(A) 1 : 7 (B) 1 : 5 (C) 7 : 1 (D) 5 : 1
- Q5. A quadratic polynomial, whose zeroes are -3 and 4 is:
(A) $x^2 - x + 12$ (B) $x^2 + x + 12$
(C) $\frac{x^2}{2} - \frac{x}{2} - 6$ (D) $2x^2 + 2x - 24$
- Q6. The distance of a point A from x-axis is 4 units. Which of the following can't be the coordinates of the point A?
(A) (2, 4) (B) (-4, 4) (C) (5, -4) (D) (4, 2)
- Q7. 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:
(A) $\frac{7}{3}$ (B) $-\frac{7}{3}$ (C) $\frac{3}{7}$ (D) $-\frac{3}{7}$
- Q8. The number of zeroes of the polynomial representing the whole curve is:



- (A) 3 (B) 4 (C) 2 (D) 1

Q9. The perimeter of a triangle with vertices (0, 4), (0, 0), and (3, 0) is

- (A) 5 (B) 12 (C) 11 (D) 7

Q10. A vertical pole of 19 m casts a 57 m-long shadow on the ground and at the same time a tower casts a 51 m-long shadow. The height of the tower is:

- (A) 171 m (B) 13 m (C) 17 m (D) 177 m

Q11. Two cones have their heights in the ratio 1:3 and radii in the ratio 3:1. What is the ratio of their volumes?

- (A) 1 : 3 (B) 1 : 2 (C) 2 : 1 (D) 3 : 1

Q12. If $\Delta ABC \sim \Delta PQR$, $AB = 4$ cm, $PQ = 6$ cm, $QR = 9$ cm and $RP = 12$ cm, then the perimeter of ΔABC is:

- (A) 15 cm (B) 18 cm (C) 20 cm (D) 25 cm

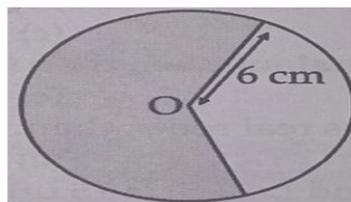
Q13. The area of a square that can be inscribed in a circle of radius 8 cm is

- (A) 256 sq. cm (B) 128 sq. cm (C) 64 sq. cm (D) $64\sqrt{2}$

Q14. If $\cos \theta = \frac{12}{13}$, what is the value of $5 \operatorname{cosec} \theta - 4 \tan \theta$

- (A) $\frac{10}{39}$ (B) $\frac{131}{60}$ (C) $\frac{31}{3}$ (D) $\frac{34}{3}$

Q15. A circle with radius 6 cm is shown below. The area of shaded region in the circle is $\frac{5}{9}$ of the area of the circle. What is the length of the circle's minor arc?



- (A) $\frac{16\pi}{3}$ (B) $\frac{20\pi}{3}$ (C) 16π (D) 20π

Q16. If $\sec \theta - \tan \theta = y$, then $\sec \theta + \tan \theta$ will be:

- (A) y (B) $\frac{1}{y}$ (C) y^2 (D) $\frac{2}{y}$

Q17. If the mean of 10 numbers is 20. If each number is multiplied by 5, the new mean is:

- (A) 20 (B) 100 (C) 25 (D) 5

Q18. If $2\sin(5x) = \sqrt{3}$ and $0^\circ < x \leq 18^\circ$, then x equals:

- (A) 10° (B) 12° (C) 20° (D) 15°

Q19. Assertion (A): $(\cos^4 A - \sin^4 A)$ is equal to $2\cos^2 A - 1$.

Reason (R): The value of $\cos \theta$ decreases as θ increases.

- (i) Both (A) and (R) are true and (R) is the correct explanation of (A)
(ii) Both (A) and (R) are true, but (R) is NOT the correct explanation of (A)
(iii) (A) is true, but (R) is false
(iv) (A) is false, but (R) is true.

Q20. Assertion (A): The tangents drawn at the end points of a diameter of a circle is parallel.

Reason (R): Diameter of a circle is the longest chord.

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