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(Affiliated to CBSE up to +2 Level)

Class: X

Subject: Mathematics

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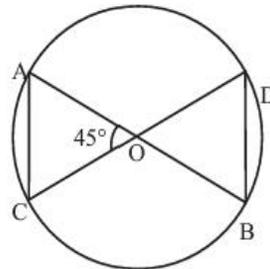
General Instructions

1. The question paper contains three parts A, B and C.
2. Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted.
3. Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted.
4. Section C consists of 10 questions based two Case Studies. Attempt any 8 questions.
5. There is no negative marking.

SECTION-A

Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted.

1. A boat goes 12 km. upstream and 40 km downstream in 8 hours. It can go 16 km upstream and 32 km downstream in the same time. Find the speed of the boat in still water and the speed of the stream.
(a) 4 km/hr, 5 km/hr (b) 3 km/hr, 1 km/hr (c) 6 km/hr, 2 km/hr (d) 7 km/hr, 2 km/hr
2. Find the distance between the points $(\sqrt{3}+1, \sqrt{2}-1)$ and $(\sqrt{3}-1, \sqrt{2}+1)$.
(a) $\sqrt{3}$ (b) $2\sqrt{3}$ (c) $\sqrt{2}$ (d) $2\sqrt{2}$
3. If in fig. O is the point of intersection of two chords AB and CD such that $OB = OD$, then triangles OAC and ODB are



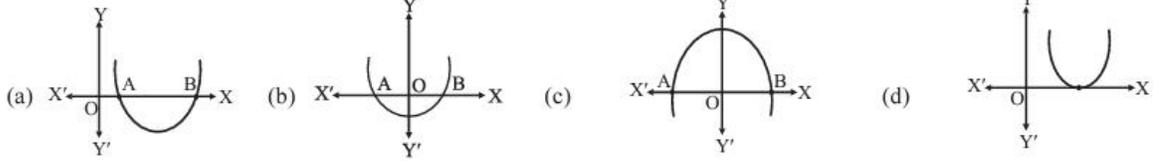
- (a) equilateral but not similar (b) isosceles but not similar
(c) equilateral and similar (d) isosceles and similar
4. If the H.C.F of 210 and 55 is expressible in the form $210 \times 5 + 55y$, find y.
(a) 20 (b) 19 (c) -91 (d) -19
 5. A child has a die whose six faces show the number as given below:

1 2 2 3 4 6

The die is thrown once. What is the probability of getting an even number?

- (a) $\frac{1}{6}$ (b) $\frac{2}{3}$ (c) 0 (d) 3

6. Which of the following is/are not graph of a quadratic polynomial ?



7. The two opposite vertices of a square are $(-1, 2)$ and $(3, 2)$. Find the co-ordinates of the other two vertices.

- (a) $(1, 0)$, $(1, 2)$ (b) $(1, 0)$, $(2, 1)$ (c) $(1, 4)$, $(1, 0)$ (d) $(4, 1)$, $(1, 0)$

8. I. If $3x - 5y = -1$ and $x - y = -1$, then $x = -2, y = -1$

II. $2x + 3y = 9, 3x + 4y = 5 \Rightarrow x = -21, y = 17$

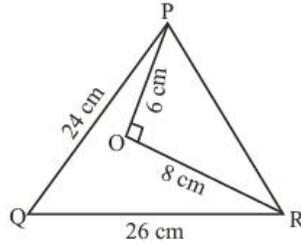
III. $\frac{2x}{a} + \frac{y}{b} = 2, \frac{x}{a} - \frac{y}{b} = 4 \Rightarrow x = 2a, y = 2b$

Which is true?

- (a) I (b) II (c) III (d) None of these

9. In figure given below, O is a point inside

ΔPQR such that $\angle POR = 90^\circ$, $OP = 6$ cm and $OR = 8$ cm. If $PQ = 24$ cm, $QR = 26$ cm. Then



- (a) $\angle QRP = 90^\circ$ (b) $\angle PRQ = 90^\circ$ (c) $\angle QPR = 90^\circ$ (d) ΔPQR is an isosceles

10. If the ratio of the areas of the two circles is $25 : 16$, then the ratio of their circumferences is

- (a) $\frac{25}{16}$ (b) $\frac{4}{5}$ (c) $\frac{5}{4}$ (d) $\frac{500}{625}$

11. If $\frac{p}{q}$ is a terminating decimal, what can you say about q ?

- (a) q must be in the form 2^n
 (b) q must be in the form 5^m
 (c) q must be in the form $2^n \cdot 5^m$
 (d) q must be in the form $2^n \cdot 5^m$, where n and m are non negative integers.

12. Identify the ratio in which the line joining $(4, 5)$ and $(-10, 2)$ is cut by the Y-axis.

- (a) $-5 : 2$ (b) $3 : 5$ (c) $-5 : 3$ (d) $2 : 5$

13. From a normal pack of cards, a card is drawn at random, find the probability of getting a jack or a king.

- (a) $\frac{7}{52}$ (b) $\frac{4}{13}$ (c) $\frac{2}{13}$ (d) $\frac{3}{13}$

14. The graph of $y = x^2 - 6x + 9$ is :

- (a) a parabola open upward (b) a parabola open downward
 (c) a straight line (d) None of these