I. *Four* alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet.

$8 \times 1 = 8$

1. If A and B are the subsets of an Universal set then the De Morgan's law among the following is

(A) $(A \cup B)^{l} = A^{l} \cap B^{l}$

(B) $(A \cup B)^{l} = A^{l} \cup B^{l}$

(C) $(A \cap B)^{l} = A^{l} \cap B^{l}$

(D) $(A \cap B)^{l} = A \cup B$.

2. The formula used to find the Geometric Mean (G) of a and b is

(A) $G = \frac{a+b}{2}$

(B) $G = \sqrt{ab}$

(C) $G = \frac{a-b}{2}$

(D) $G = ab$.

3. The LCM of 8 and 12 is 24, then their HCF is

(A) 4

(B) 24

(C) 8

(D) 12.

4. If $P(x) = x^2 - 4$ then the value of $P(2)$ is

(A) 8

(B) 4

(C) 0

(D) 2.

5. The discriminant of the quadratic equation $ax^2 + bx + c = 0$ is

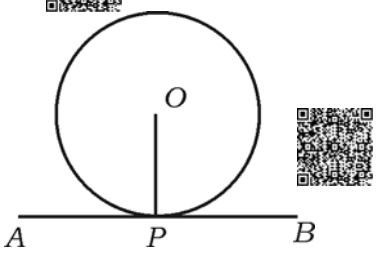
(A) $b^2 + 4ac$

(B) $b^2 - 4ac$

(C) $\sqrt{b^2 - 4ac}$

(D) $\sqrt{b^2 + 4ac}$.

6. In the adjoining figure, AB is a tangent to the circle. P is the point of contact then $\angle OPA$ is



(A) 60°

(B) 0°

(C) 180°

(D) 90°.

7. The value of sin 30° is

(A) 1

(B) $\sqrt{3}$

(C) $\frac{1}{2}$

(D) $\sqrt{2}$.

8. Which of the following measures represent the sides of a right angled triangle ?

(A) 6, 8, 9

(B) 3, 4, 6

(C) 7, 8, 9

(D) 6, 8, 10.

I. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $8 \times 1 = 8$

1. In the pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, if $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ then the

(A) equations have no solution

(B) equations have unique solution

(C) equations have three solutions

(D) equations have infinitely many solutions.

2. In an arithmetic progression, if $a_n = 2n + 1$, then the common difference of the given progression is

(A) 0 (B) 1

(C) 2 (D) 3.

3. The degree of a linear polynomial is

(A) 0 (B) 1

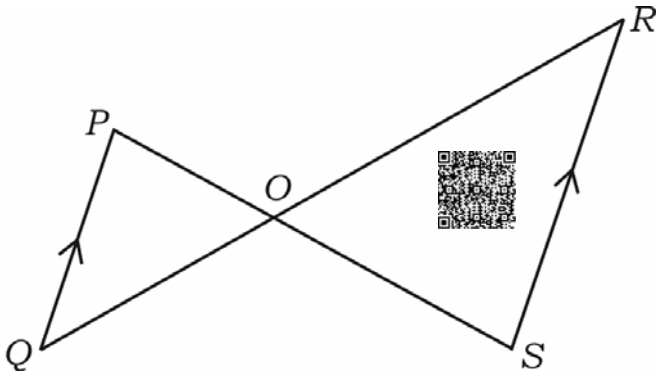
(C) 2 (D) 3.

4. If 13 sin θ = 12, then the value of cosec θ is

(A) $\frac{12}{5}$ (B) $\frac{13}{5}$

(C) $\frac{12}{13}$ (D) $\frac{13}{12}$.

5. In the figure, if $\Delta POQ \sim \Delta SOR$ and $PQ : RS = 1 : 2$, then $OP : OS$ is



(A) 1 : 2 (B) 2 : 1

(C) 3 : 1 (D) 1 : 3.

6. A straight line passing through a point on a circle is

(A) a tangent (B) a secant

(C) a radius (D) a transversal.

7. Length of an arc of a sector of a circle of radius r and angle θ is

(A) $\frac{\theta}{360^\circ} \times \pi r^2$ (B) $\frac{\theta}{360^\circ} \times 2\pi r^2$

(C) $\frac{\theta}{180^\circ} \times 2\pi r$ (D) $\frac{\theta}{360^\circ} \times 2\pi r$.

8. If the area of the circular base of a cylinder is 22 cm^2 and its height is 10 cm, then the volume of the cylinder is

(A) 2200 cm^2 (B) 2200 cm^3

(C) 220 cm^3 (D) 220 cm^2.