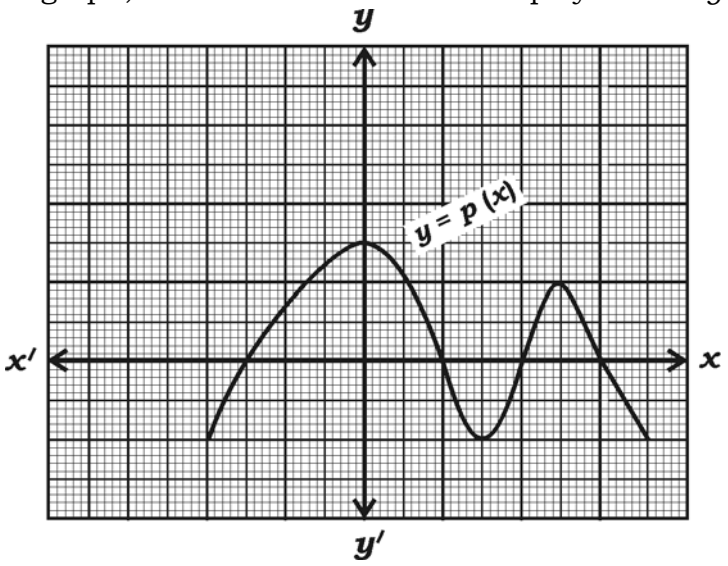
I. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $8 \times 1 = 8$

1. In the given graph, the number of zeros of the polynomial $y = p(x)$ is



(A) 3 (B) 5

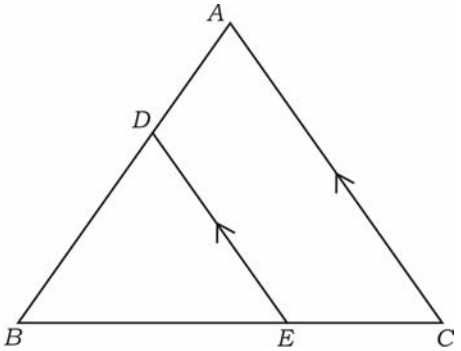
(C) 4 (D) 2.

2. The value of $\sec^2 26^\circ - \tan^2 26^\circ$ is

(A) $\frac{1}{2}$ (B) 0

(C) 2 (D) 1.

3. In the ΔABC, if $DE \parallel AC$, then the correct relation is



(A) $\frac{BD}{AB} = \frac{AC}{DE} = \frac{BC}{BE}$ (B) $\frac{BD}{AB} = \frac{DE}{AC} = \frac{BE}{BC}$

(C) $\frac{AB}{BD} = \frac{AC}{DE} = \frac{BE}{EC}$ (D) $\frac{AD}{BD} = \frac{DE}{AC} = \frac{BE}{EC}$.

4. The base radius and height of a right circular cylinder and a right circular cone are equal and, if the volume of the cylinder is 360 cm^3, then the volume of cone is

(A) 120 cm^3 (B) 180 cm^3

(C) 90 cm^3 (D) 360 cm^3.

5. The lines represented by $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$ are,

(A) intersecting lines

(B) parallel lines

(C) coincident lines

(D) perpendicular lines to each other.

6. If the n^{th} term of an arithmetic progression $a_n = 3n - 2$, then its 9^{th} term is

(A) – 25 (B) 5

(C) – 5 (D) 25.

7. If $P(A) = \frac{2}{3}$, then $P(\overline{A})$ is

(A) $\frac{1}{3}$ (B) 3

(C) 1 (D) $\frac{3}{2}$.

8. The surface area of a sphere of radius 7 cm is

(A) 154 cm^2 (B) 616 cm^3

(C) 616 cm^2 (D) 308 cm^2.

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 $A = \{ a, b, c, d, e \}$ and $B = \{ a, m, n, d \}$ then $A \cap B$ is

   (A) $\{ a, d, e \}$

   (B) $\{ m, n \}$

   (C) $\{ a, d \}$

   (D) $\{ a, b, c, d, e, m, n \}$

2. If two lines are mutually perpendicular, then the product of their slopes is

   (A) – 1

   (B) 0

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

   (D) 1.

3. The sum of first 20 natural numbers is

   (A) 142

   (B) 210

   (C) 254

   (D) 310.

4. If ${}^{n}P_{2} = 90$, then the value of n is

   (A) 8 (B) 9

   (C) 10 (D) 12.

5. A cubical die whose faces numbered from 1 to 6 is rolled once. The probability of getting a perfect square number on its top face is

(A) $\frac{1}{6}$

(B) $\frac{2}{6}$

(C) $\frac{3}{6}$

(D) 1.

6. If the mean of 5 scores is 6, then the sum of all the scores is

(A) 11

(B) 26

(C) 30

(D) 42.

7. If $p(x) = 3x^2 - 2x + 5$, then the value of $p(-1)$ is

(A) 4

(B) 6

(C) 8

(D) 10.

8. The distance of the point P (3, 4) from y-axis is

(A) 3 units

(B) 4 units

(C) 5 units

(D) 7 units.