MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 45

Total Marks : 19

Max. Time : 20 min.

Topic : Straight Lines

Type of Questions		**M.M., Min.**
Single choice Objective (no negative marking) Q.1,2,3,4,5	**(3 marks, 3 min.)**	**[15, 15]**
Subjective Questions (no negative marking) Q.6	**(4 marks, 5 min.)**	**[4, 5]**

1. If A & B are the points $(-3, 4)$ and $(2, 1)$, then the co–ordinates of the point C on AB produced such that $AC = 2\,BC$ are :

(A) (2, 4) (B) (3, 7) (C) (7, –2) (D) $\left(-\frac{1}{2}, \frac{5}{2}\right)$

2. If in triangle ABC , $A \equiv (1, 10)$, circumcentre $\equiv \left(-\frac{1}{3}, \frac{2}{3}\right)$ and orthocentre $\equiv \left(\frac{11}{3}, \frac{4}{3}\right)$ then the co-ordinates of mid-point of side opposite to A is :

(A) $(1, -11/3)$ (B) (1, 5) (C) $(1, -3)$ (D) (1, 6)

3. Harmonic conjugate of the point (5, 13) with respect to (2, –5) and (3, 1) is

(A) $\left(1, \frac{13}{5}\right)$ (B) $\left(\frac{13}{5}, 1\right)$ (C) $\left(\frac{13}{5}, -\frac{7}{5}\right)$ (D) $\left(-\frac{7}{5}, \frac{13}{5}\right)$

4. An equilateral triangle has each of its sides of length 6 cm. If (x_1, y_1) ; (x_2, y_2) & (x_3, y_3) are its vertices, then the value of the determinant $\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}^2$ is equal to :

(A) 192 (B) 243 (C) 486 (D) 972

5. ABC is a triangle. The coordinates of whose vertices are (–2, 4), (10, –2) and (–2, –8). G is the centroid of triangle ABC, then area of the triangle GBC is equal to

(A) 26 (B) 36 (C) 24 (D) 39

6. One end of a thin straight elastic string is fixed at A $(4 , -1)$ and the other end B is at $(1 , 2)$ in the unstretched condition . If the string is stretched to triple its length to the point C , then find the co–ordinates of this point .

Answers Key

1. (C)

2. (A)

3. (C)

4. (D)

5. (C)

6. (–5, 8)