**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)