SOLUTION OF TRIANGLE

1. यदि एक त्रिभुज ABC के शीर्ष बिन्दु A(–1, 7), B(–7, 1) तथा C(5, –5) हैं, तो इसके लम्ब–केन्द्र के निर्दशांक हैं :

(1) (3, –3)

(2) $\left(-\frac{3}{5}, \frac{3}{5}\right)$

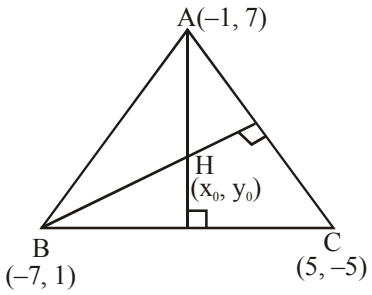
(3) (–3, 3)

(4) $\left(\frac{3}{5}, -\frac{3}{5}\right)$

SOLUTION

1. Official Ans. by NTA (3)

Sol. Let orthocentre is $H(x_0, y_0)$



$m_{AH}.m_{BC} = -1$

$$\Rightarrow \left(\frac{y_0 - 7}{x_0 + 1}\right)\left(\frac{1+5}{-7-5}\right) = -1$$

$\Rightarrow 2x_0 - y_0 + 9 = 0$ ..... (1)

and $m_{BH}.m_{AC} = -1$

$$\Rightarrow \left(\frac{y_0 - 1}{x_0 + 7}\right)\left(\frac{7-(-5)}{-1-5}\right) = -1$$

$\Rightarrow x_0 - 2y_0 + 9 = 0$ ..... (2)

Solving equation (1) and (2) we get

$(x_0, y_0) \equiv (-3, 3)$