

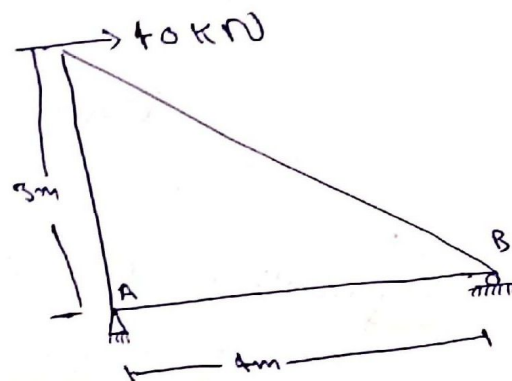
Question # 01 :->

(1)

Answer :->

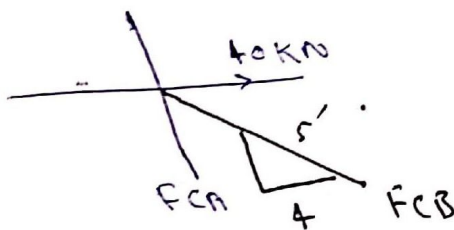
Solution :->

Given that



First of all we  
analyse joint (A)

So,



$$\rightarrow \sum F_x = 0$$

$$40 - F_{CB} \left(\frac{4}{5}\right) = 0$$

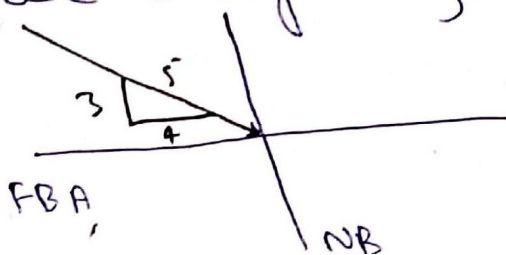
$$F_{CB} = 50.0 \text{ kN (C)}$$

$$+\uparrow \sum F_y = 0$$

$$50 \left(\frac{3}{5}\right) - F_{CA} = 0$$

$$F_{CA} = 30.0 \text{ kN (T)}$$

Now we analyse joint (B).



$$(P - T = 0) \Rightarrow$$

$$\rightarrow \sum F_x = 0 \quad \text{so } (4/5) - F_{BA} = 0$$

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$$F_{BA} = 40.0 \text{ KN (T)}$$

$$\uparrow \sum F_y = 0 \quad N_B - 50.0(3/5) = 0$$

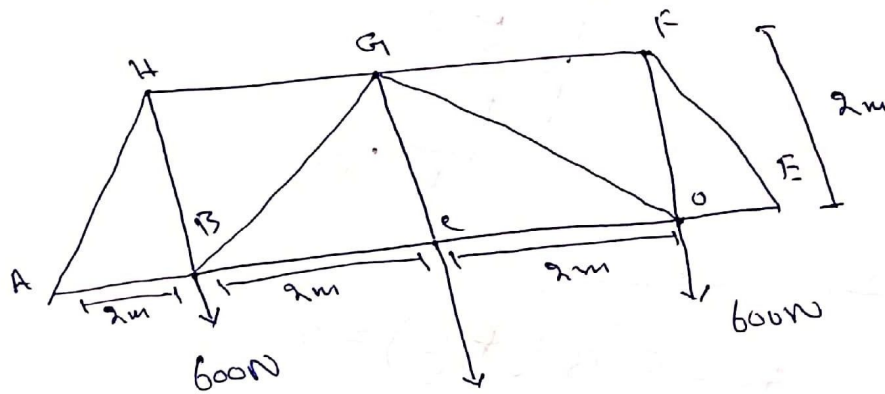
$$N_B = 30.0 \text{ KN}$$



Question No # 02 :-

Answer :-

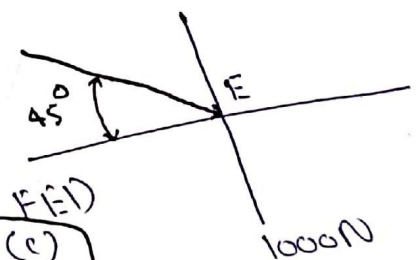
Solution :- Given that :-



Now we analyse Joint (E)

$$\uparrow \sum F_y = 0$$

$$1000 - F_{EF} \sin 45^\circ = 0$$



$$F_{EF} = 1414.21 \text{ N (C)} = 1.4 \text{ KN (C)}$$

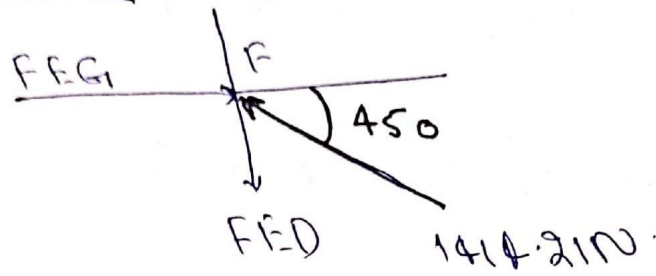
$$\rightarrow \sum F_x = 0;$$

$$1414.21 \cos 45^\circ - F_{ED} = 0$$

$$F_{ED} = 1000 \text{ N (T)} = 1 \text{ KN (T)}$$

$$(P - T - C) \Rightarrow$$

Joint (F)



$\rightarrow \sum F_x = 0$

$F_{FG} - 1414.21 \cos 45^\circ = 0$

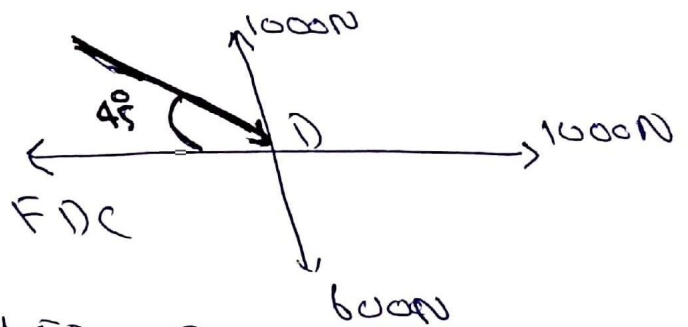
$F_{FG} = 1000 \text{ N (C)} = 1 \text{ kN (C)}$

$\uparrow \sum F_y = 0$

$1414.21 \sin 45^\circ - F_{FD} = 0$

$F_{FD} = 1000 \text{ N (T)} = 1 \text{ kN (T)}$

Joint (D)



$\uparrow \sum F_y = 0$

$1000 - 600 - F_{DG} \sin 45^\circ = 0$

$F_{DG} = 565.69 \text{ N (C)} = 566 \text{ N (C)}$

$\sum F_x = 0; 1000 + 565.69 \cos 45^\circ - F_{DC} = 0$

$F_{DC} = 1400 \text{ N (T)} = 1.4 \text{ kN (T)}$

Join (C)

Joint (C)

④

$$+\uparrow \sum F_y = 0$$

$$F_{CG} - 800 = 0$$

$$F_{CG} = 800 \text{ N (T)}$$

Due to symmetry

$$F_{BC} = F_{DC} = 1.4 \text{ kN (T)}$$

$$F_{HB} = F_{FD} = 1.0 \text{ kN (T)}$$

$$F_{BG} = F_{DG} = 5.66 \text{ N (T)}$$

$$F_{HG} = F_{FG} = 1.0 \text{ kN (C)}$$

$$F_{AH} = F_{EF} = 1.41 \text{ kN (C)}$$

$$F_{AB} = F_{ED} = 1.0 \text{ kN (T)}$$

