

HARIS IQBAL

7926 (A)

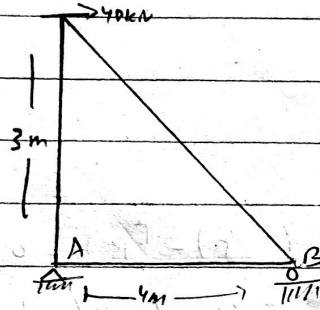
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STRUCTURE - I

Assignment :- 2 11 July 20

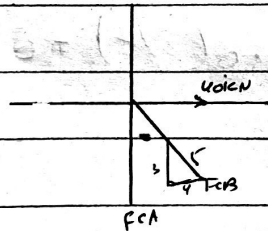
Sir Amjad Islam

⇒ Question :- 1



First of all we analysis Joint C

60



$$\rightarrow \sum F_x = 0$$

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

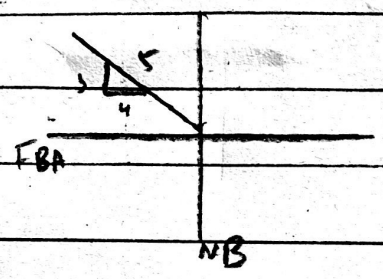
$$F_{CB} = 50.0kN (C)$$

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

$$50(3/5) - F_{CA} = 0$$

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

Now we



$$\rightarrow \sum F_x = 0 \quad 50(4/5) - F_{BA} = 0$$

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

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

$$N_B - 50.0(3/5) = 0$$

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

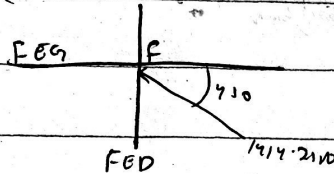
$$F_{EF} = 1414.21 \text{ N (C)} = 1.414 \text{ kN (C)}$$

$$\pm \rightarrow \sum F_x = 0$$

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

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

Joint (F)



$$\pm \rightarrow \sum F_x = 0$$

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

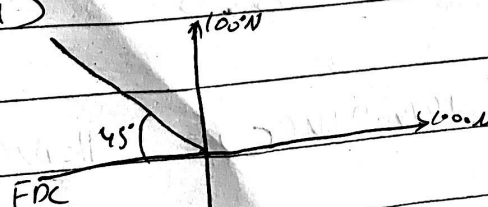
$$F_{EG} = 1000 \text{ N (C)} = 1 \text{ kN (C)}$$

$$\pm \uparrow \sum F_y = 0$$

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

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

Joint (D)



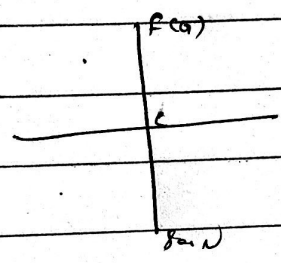
$$1000 - 600 - F_{DG} \sin 45^\circ = 0$$

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

$$\pm \rightarrow \sum F_x = 0; 1000 + 565.59 \cos 45^\circ - F_x = 0$$

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

Joint (C)



$$\pm \uparrow \sum F_y = 0$$

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

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

\Rightarrow Symmetry.

$$F_{BC} = F_{DC} = 1.41 \text{ kN (T)}$$

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

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

$$F_{HG} = F_{FG} = 1.6 \text{ kN (C)}$$

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

$$F_{AB} = F_{ED} = 1.6 \text{ kN (T)}$$

