MB212

VIT
Vellore Institute of Technology

Continuous Assessment Test – I

Programme Name & Branch: B.Tech & Mechanical

Course Name & Code: MEE 1002 – Engineering Mechanics

Class Number: VL2019201001155, 2228 **Slot:** B2+TB2 **Exam Duration:** 90mins
Maximum Marks: 50

S.No	Section – A (15 x 2 = 30 Marks) Question	CO
1.	A container of weight W is suspended from ring A, to which cables AC and AE are attached as shown in Fig.1. A force P is applied to the end F of a third cable that passes over a pulley at B and through ring A and that is attached to a support at D. Knowing that W = 1000 N, determine the magnitude of P. The tension is the same in all portions of cable $FBAD$.	1

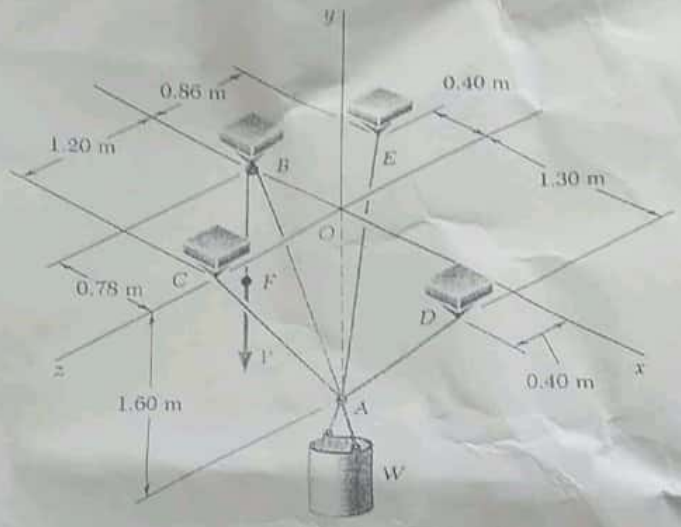

Fig.1.

2.	The frame ACD is hinged at A and D and is supported by a cable that passes through a ring at B and is attached to hooks at G and H as shown in Fig.2. Knowing that the tension in the cable is 450 N, determine the moment about the diagonal AD of the force exerted on the frame by portion BH of the cable.	1

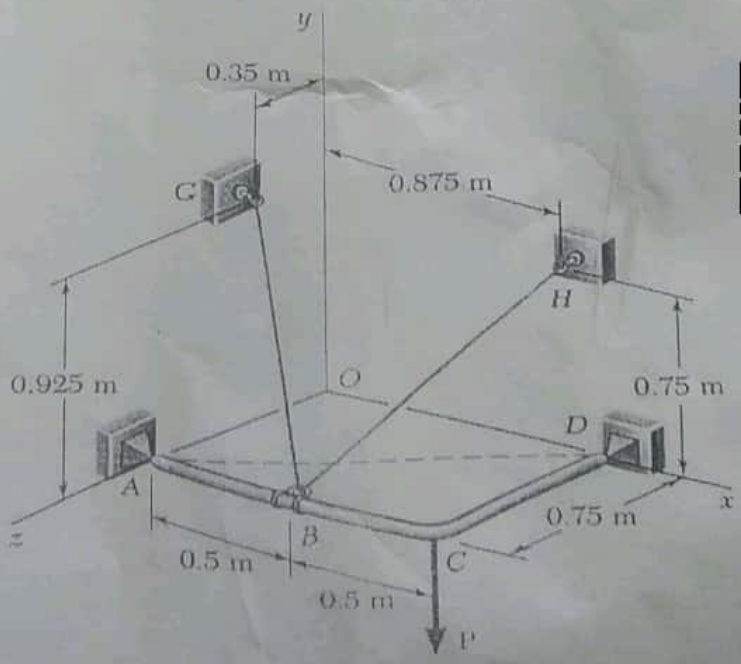

Fig.2.

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Section – B (10 x 2 = 20 Marks)

3. Using the method of joints, determine the force in each member of the truss shown in Fig.3. State whether each member is in tension or compression. 2

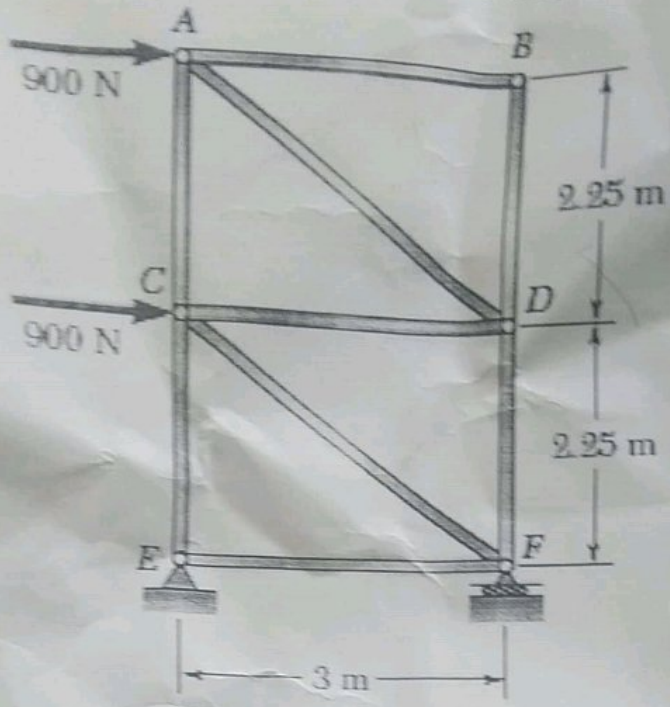

Fig.3.

4. Determine the components of the forces acting on each member of the frame shown in Fig.4. 2

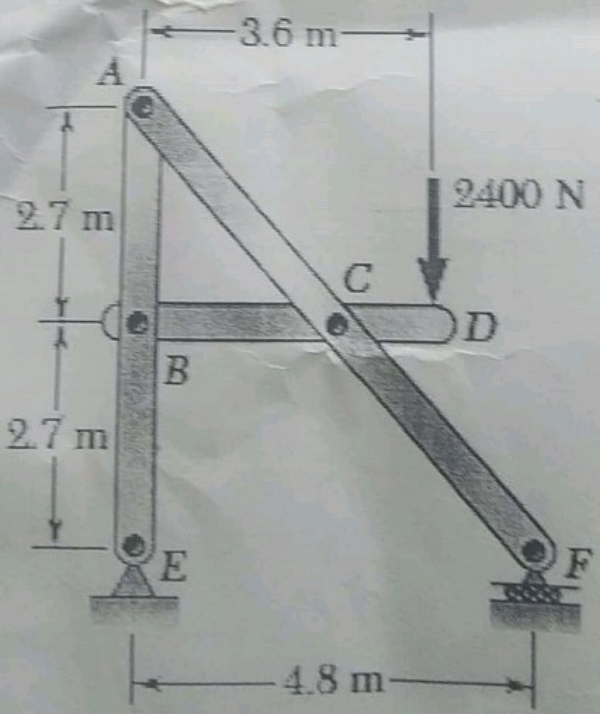

Fig.4.