Department of Mechanical Engineering (NITC)

S1ME **ZZ1001D ENGINEERING MECHANICS** **Tutorial Test 4-Set 1**

Time: One Hour Maximum Marks: 20

1. Determine the horizontal and vertical components of reaction on the beam caused by the pin at *B* and the rocker at A as shown in Fig. 1. Neglect the weight of the beam.
2. A cantilever beam *AB* is pinned at *B* to a simply supported beam *BC* (Fig. 2). For the loads given, find the supporting force system at ***A*.** Determine force components that are normal and tangential to the cross-section of beam *AB.* Neglect the weights of the beams.

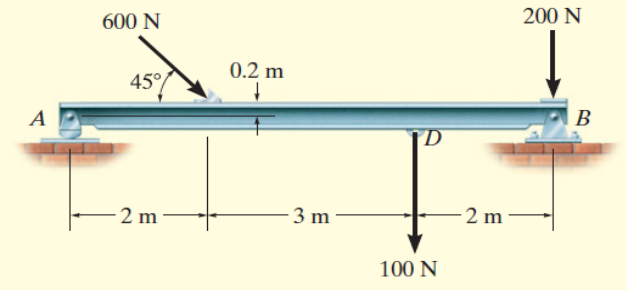

Figure 1

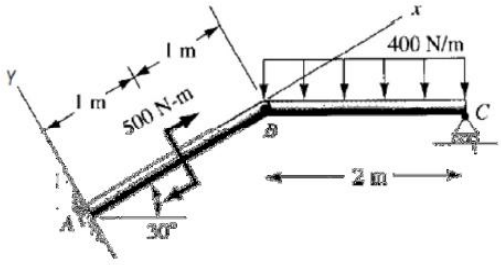

figure 2

----------**P.T.O**----------

Department of Mechanical Engineering (NITC)

S1ME **ZZ1001D ENGINEERING MECHANICS** **Tutorial Test 3-Set 1**

Time: One Hour Maximum Marks: 20

1. Determine the horizontal and vertical components of reaction on the beam caused by the pin at *B* and the rocker at A as shown in Fig. 1. Neglect the weight of the beam.
2. A cantilever beam *AB* is pinned at *B* to a simply supported beam *BC* (Fig. 2). For the loads given, find the supporting force system at ***A*.** Determine force components that are normal and tangential to the cross-section of beam *AB.* Neglect the weights of the beams.

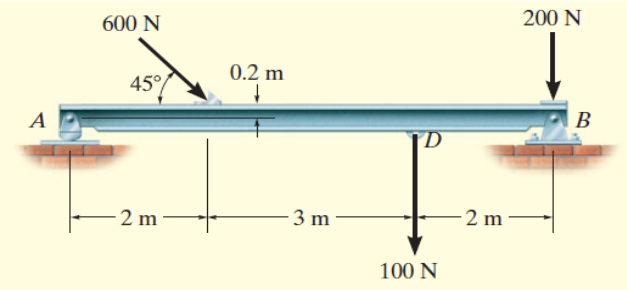

Figure 1

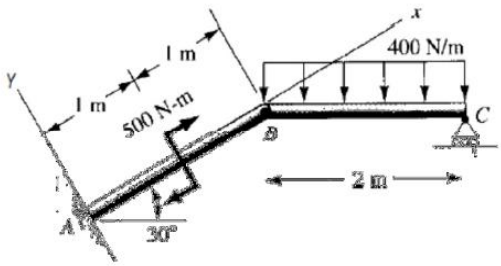

figure 2

----------**P.T.O**----------

3. What is the resultant of the force system transmitted across the section at *A* (Fig. 3)? The couple is parallel to plane *M.*
4. Determine the tension in cables *BD* and *CD* and the *x, y, z* components of reaction at the ball- and socket joint at *A* (Fig. 4).

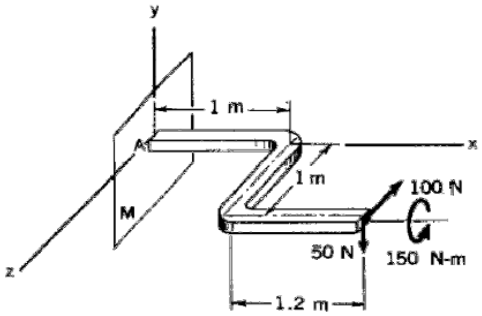

Figure 3

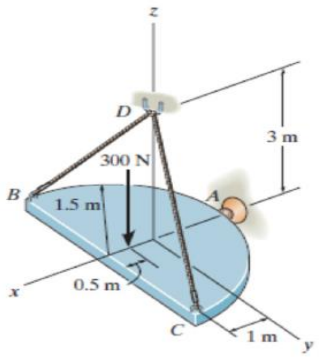

figure 4

3. What is the resultant of the force system transmitted across the section at *A* (Fig. 3)? The couple is parallel to plane *M.*
4. Determine the tension in cables *BD* and *CD* and the *x, y, z* components of reaction at the ball- and socket joint at *A* (Fig. 4).

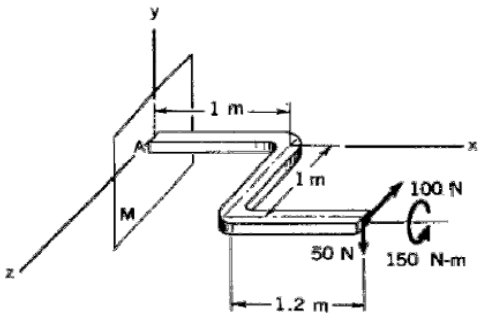

Figure 3

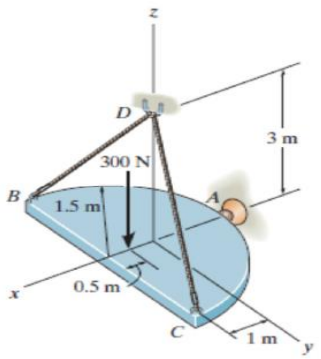

figure 4