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NATIONAL INSTITUTE OF TECHNOLOGY CALICUT

**ZZ1001 ENGINEERING MECHANICS**

**Interim Test - II - Monsoon Semester 2013**

Time: 1hr Max Marks: 20

- *Answer **all** questions.*
- *Read questions carefully before attempting to answer.*

1. Determine the support reactions of the simply supported beam with loads as shown in Figure.1 [5]

2. The truss in Figure. 2 is pinned to the wall at point F and supported by a roller at point C. Calculate the force in members BC, BE and DE using method of sections. Tabulate the results. ( Take $\tan\theta = 2.5$. ) [5]

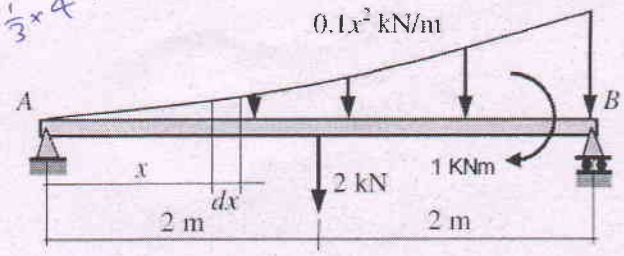


**Figure 1.**

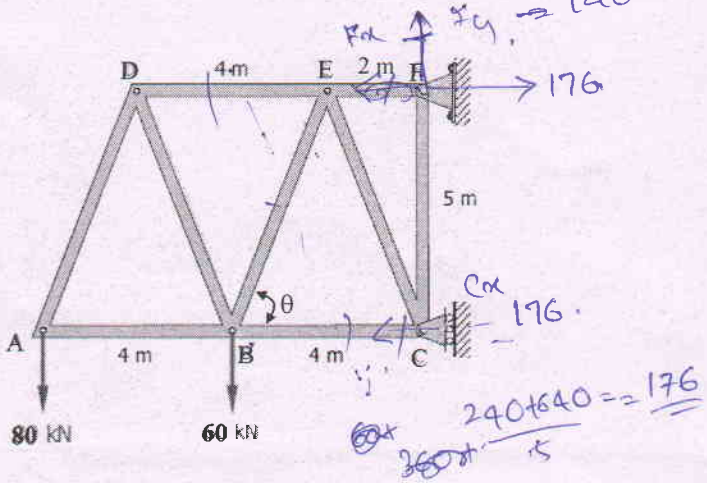


**Figure 2.**

3. For the blocks shown in Figure 3, determine the force *P* required to produce impending motion of block *B* down the plane. The co-efficient of static friction between the blocks and the planes is 0.5. The weight of block A is 500N and the weight of block B is 800N. [5]

4. Determine the coordinates of the centroid of the shaded area given in Figure 4 [5]

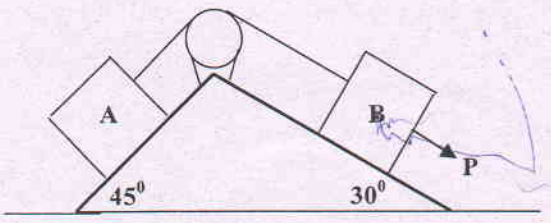


**Figure 3.**

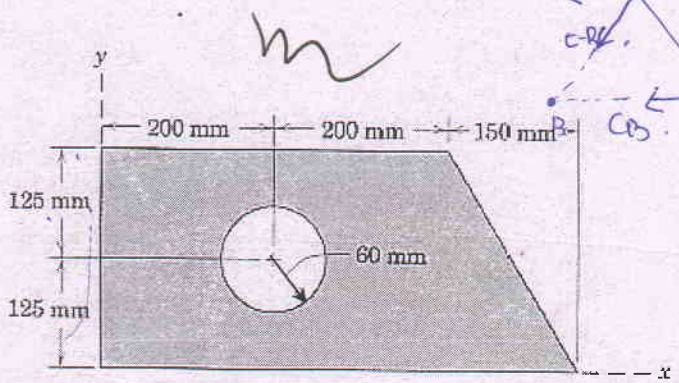


**Figure 4.**