Printed Pages : 12 **EME102**

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4301 **Roll No.** | | | | | | | | | | |

B. Tech.

(SEM. I) ODD SEMESTER THEORY EXAMINATION 2010-11

ENGG. MECHANICS

Time : 3 Hours *Total Marks : 100*

Note :— (1) Attempt **all** questions. Marks are indicated against each question.

(2) Assume missing data suitably, if any.

SECTION—A

1. Attempt **all** parts :— **(10×2=20)**

Note : In parts (i) and (ii), choose the correct choice :

(i) A body of weight 100 N is resting on a rough horizontal table. The friction force acting on it is :

(a) 20 N

(b) 10 N

(c) 0

(d) The question cannot be answered without knowing the co-efficient of the friction.

(ii) First moment of area about an axis is zero. The axis :

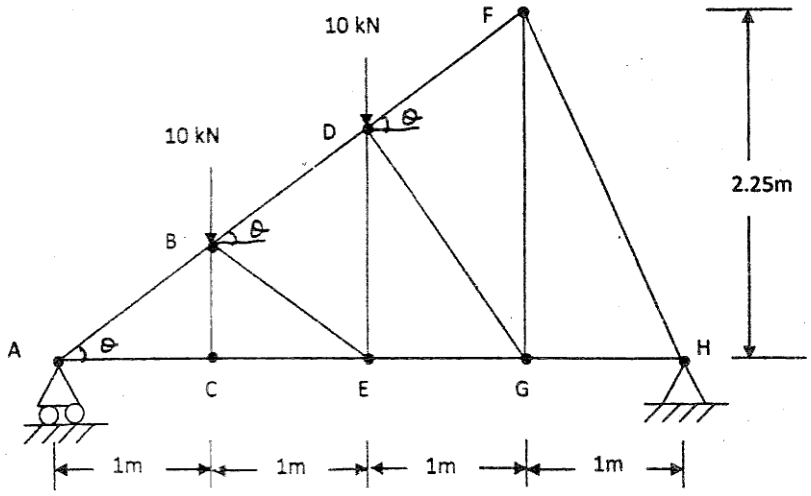
(a) Must be an axis of symmetry

(b) Must pass through CG

(c) Both (a) and (b)

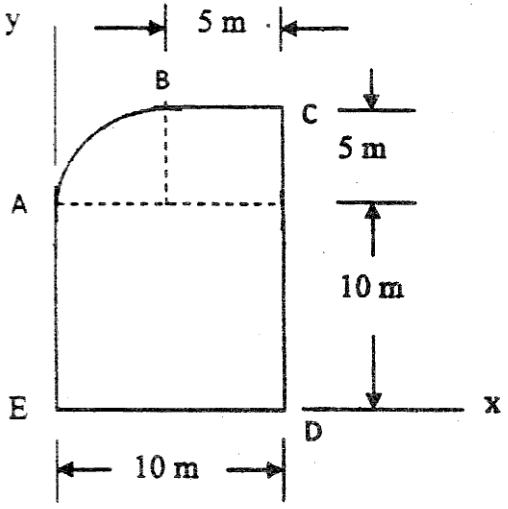
(d) None

(b) For the simply supported truss shown in figure, find the forces in the members BD, DE, EG, and CE.

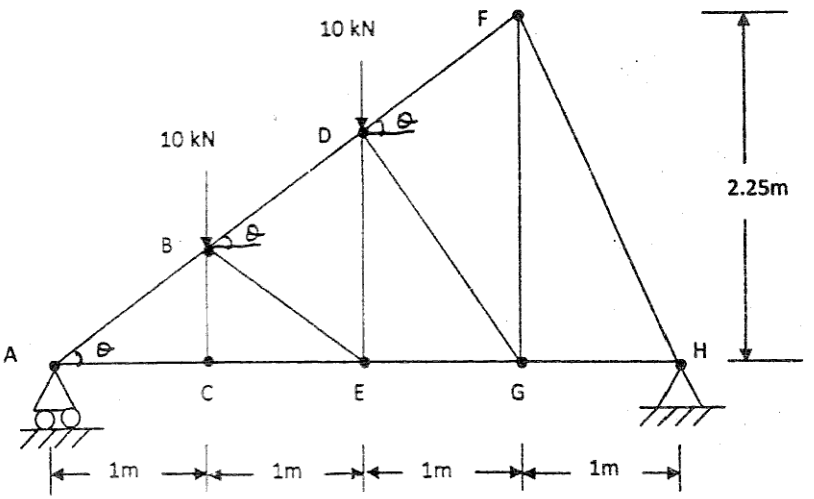


5. Attempt any **two** parts of the following :— **(5×2=10)**

(a) A wire is bent into a closed loop A-B-C-D-E-A as shown in figure in which portion AB is circular arc. Determine the centroid of the wire.



(b) For the simply supported truss shown in figure, find the forces in the members BD, DE, EG, and CE.



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