

TERM TEST- I, SEM-I

Maximum marks: 20

Minimum marks: 08

Date : 11/09/2014

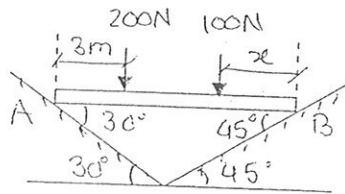
Time allowed: 1 hour

Instructions: Question 1 is compulsory and attempt any three from remaining questions.

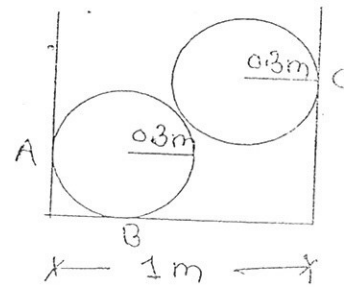
Q 1. Attempt any four.

- (a) State principle of transmissibility of forces. (2x4)
- ~~(b)~~ State Lami's theorem.
- ~~(c)~~ What is free body diagram? Explain briefly.
- (d) What are the conditions of equilibrium for coplanar concurrent force system?
- (e) What are the assumptions made in the analysis of trusses?
- (f) State Varignon's theorem and state its application.
- ~~(g)~~ Define (i) Centroid (ii) Comoment of force or (iii) Couple.

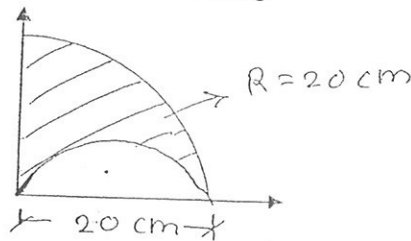
Q 2. A bar AB 12 m long rests in horizontal position as shown in fig. on smooth planes. Find distance x at which the load P=100 N is to be placed to keep the bar in equilibrium. Neglect weight of the bar. (4)



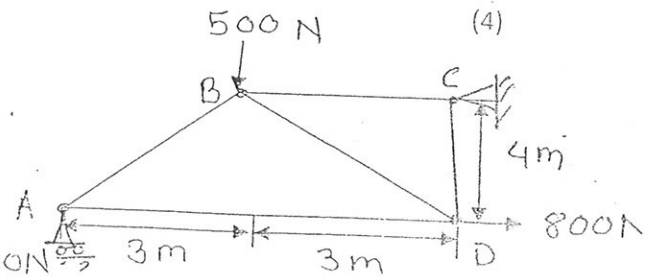
Q 3. The cylindrical rollers of 100 N each are placed inside a cup. Find reactions at points of contact. (4)



Q 4. Determine centroid of shaded area as shown in fig.



Q 5. Determine force in each member of the truss shown in fig. Indicate whether the members are in tension or compression.



Q 6. Determine the resultant of the coplanar system shown in fig.

