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Question Paper Code: 52106

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Second Semester

Civil Engineering

15UCE206-BASIC ENGINEERING MECHANICS

(Regulation 2015)

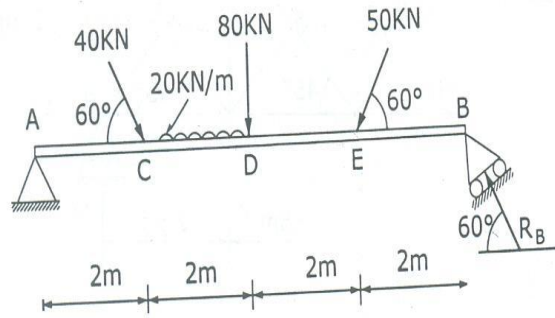
Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

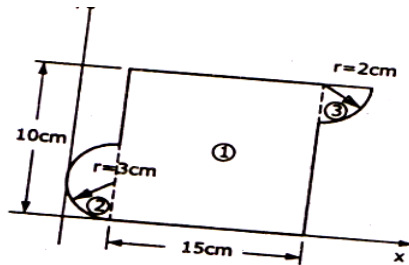
(Answer any six of the following questions)

1. If two forces of 3kg and 4kg act at right angles to each other, their resultant force will be equal to CO1-R
(a) 7kg (b) 1kg (c) 5kg (d) 1/7kg
2. What is not the condition for the equilibrium in three dimensional system of axis? CO1-R
(a) $\sum F_x=0$ (b) $\sum F_y=0$ (c) $\sum F_z=0$ (d) $\sum F \neq 0$
3. The unit of force in S.I. system of units is CO2-R
(a) dyne (b) kilogram (c) newton (d) watt
4. Reactions at the supports of a structure can be determined by equating the algebraic sum of CO2-R
(a) Horizontal forces to zero
(b) vertical forces to zero
(c) moments about any point to zero
(d) all the above
5. The coefficient of friction depends on CO3-R
(a) Area of Contact (b) Shape of surface
(c) Strength of surfaces (d) Nature of surfaces



13. A uniform ladder of weight 1000N and length 4m rests on a horizontal ground and leans against a smooth vertical wall. The ladder makes an angle of 60° with horizontal. When a man of weight 750N stands on the ladder, the ladder is at the point of sliding. Determine the coefficient of friction between the ladder and the floor. CO3-Ana (8)

14. Locate the centroid of the given section as shown in fig.7 CO4-Ana (8)



15. Find the moment of inertia of the section about its centroidal axis as shown in fig. CO5-U (8)

