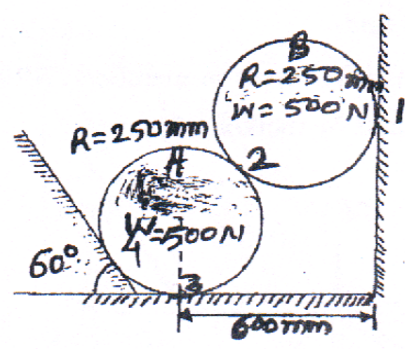Fig 3 a
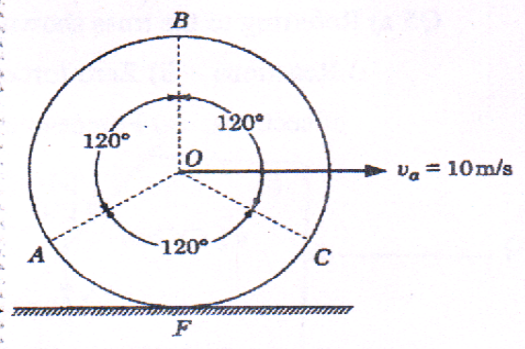

Fig 3.c

c) A wheel of diameter 1 m rolls without slipping on a flat surface as shown in fig.3.c. The centre of the wheel is moving with a velocity of 10 m/s. Find the velocity of the point A, B and C. [6]

Q4 a) A square of side 5cm is cut from the composite area as shown in fig 4.a. Locate the centroid of the remaining area. [4]
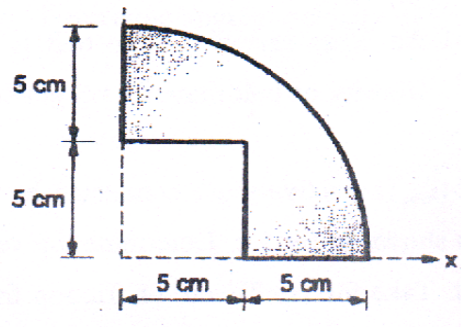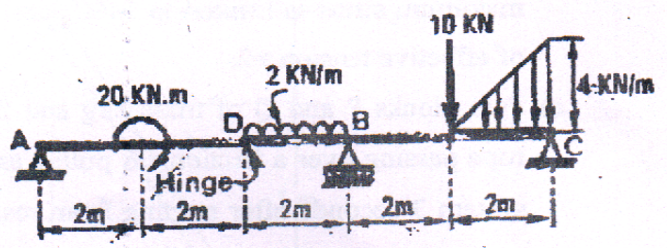

Fig 4.a

Fig 4.b

b) Determine the reactions at supports A, B and C for the beam loaded as shown in fig 4.b. D is an internal hinge 4m from A. [8]

c) The drinking fountain n is designed such that the nozzle is located from the edge of the basin shown in fig.4.c. Determine the maximum and minimum speed at which water can be ejected from the nozzle so that it does not splash over the sides of the basin at B and C which are at the same level. [8]
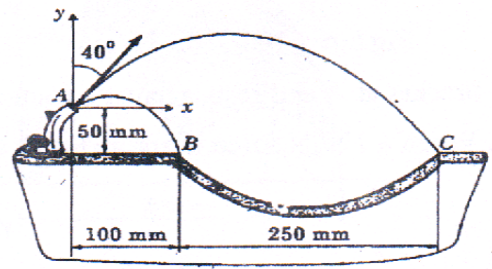

Fig. 4.c

[TURN OVER