

A.C.Patil College of Engineering Kharghar
Mechanical Engineering
Unit Test -1

Subject: ENGINEERING MECHANICS

FIRST YEAR

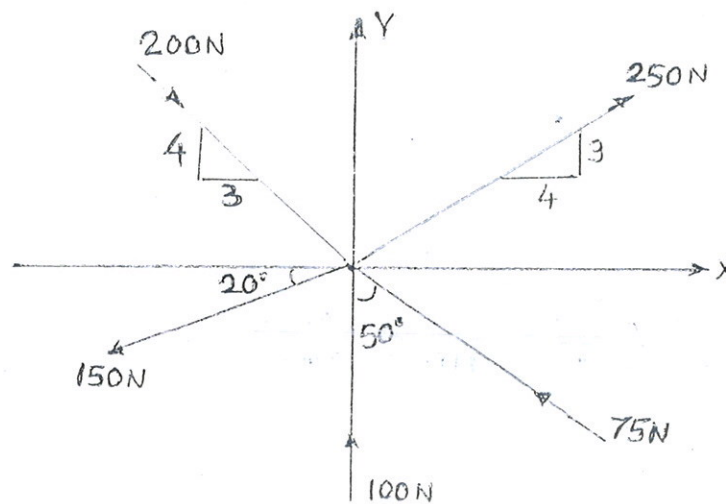
TOTAL: 20 MARKS
DURATION 1 HOUR

- 1) All Questions of (4) marks each.
- 2) Solve any Five out of seven Questions

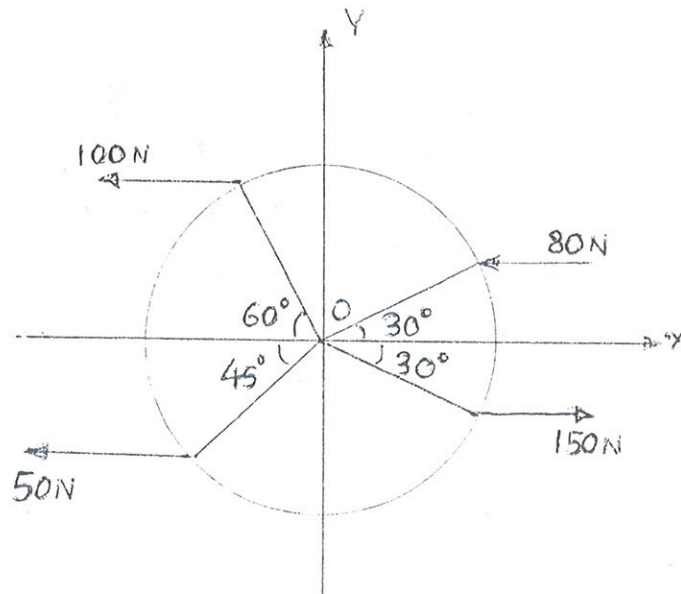
Q.1)

- a) Define F.B.D. with Example. (2)
- b) State Varignon's Theorem (2)

Q.2) Find the magnitude & direction of Resultant of given force system as shown (4)

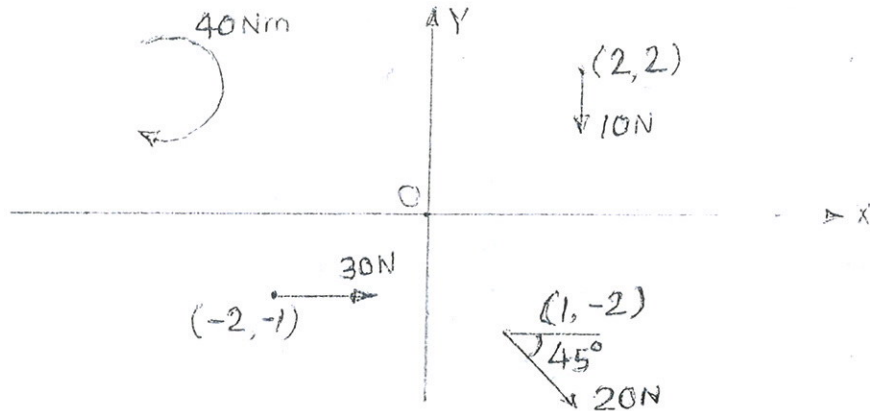


Q.3) Determine the Resultant of the parallel forces shown in fig. & locate it w.r.t. 'O', Radius is 1m (4)

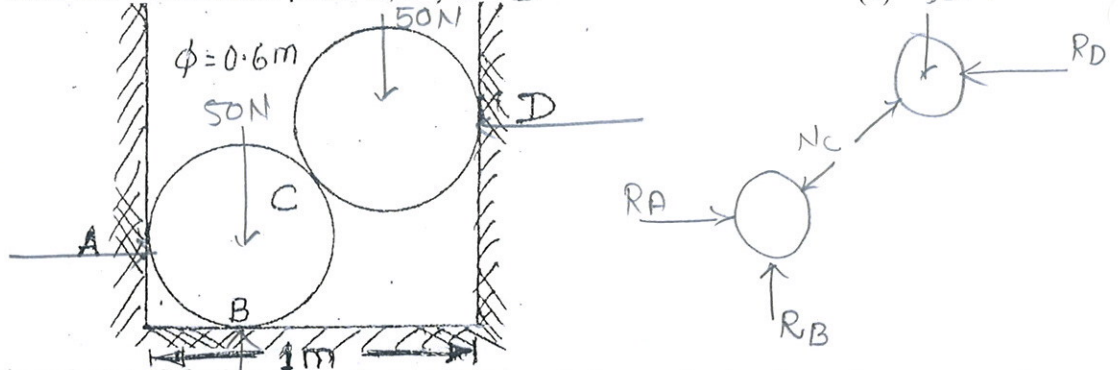


(PTO)

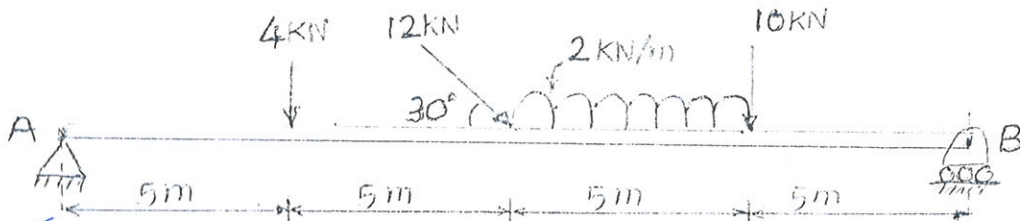
Q.4) Determine the Resultant of force system as shown in fig & replace this Resultant by an equivalent force couple system at origin. (4)



Q.5) Two identical rollers each of weight 50N are supported by FLOOR & vertical wall as shown. Find reactions at point A, B, C & D (4)



Q.6) A beam is hinged at A & roller supported at B. It is acted upon by loads as shown. Find support reactions. (4)



Q.7) Find the centroid of shaded area shown. (4)

