

Vishnu Waman Thakur Charitable Trust's

VIVA Institute of Technology

At. Shirgaon, Veer Sawarkar Road, Virar(East), Taluka-Vasai, Palghar District - 401305, Maharashtra.

Department of Mechanical Engineering

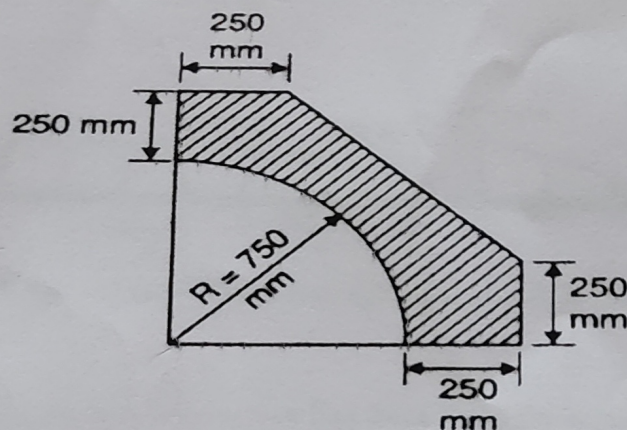
Academic year: 2022-2023

Question Bank to Unit Test I

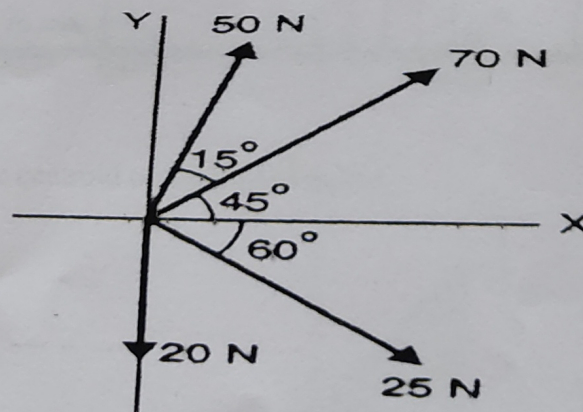
Subject: Engineering Mechanics

Division: FE (All Branches)

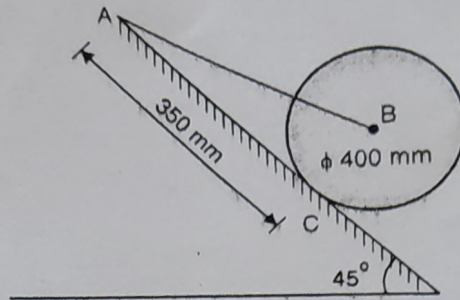
- 1) Determine the centroid of the shaded region.



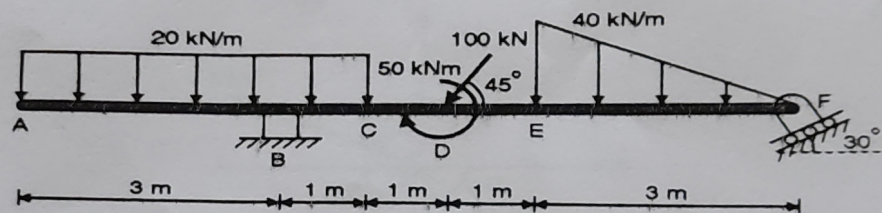
- 2) Determine the resultant of forces acting as given. Find the angle which the resultant makes with positive x-axis



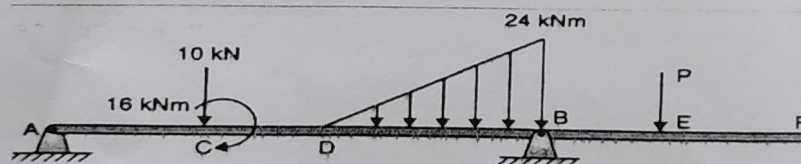
3. The Cylinder B diameter 400 mm and weight 5K_N, is held in position as shown with the help of cable AB. Find the tension in the cable and the reaction developed at contact C.



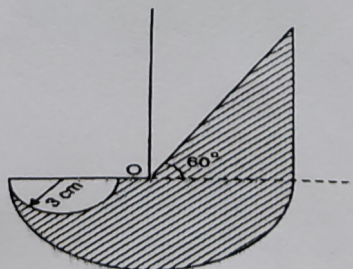
4. For the beam shown, Calculate the support Reactions.



5. If the support reaction at A is zero, then find force P and the support reaction at B.

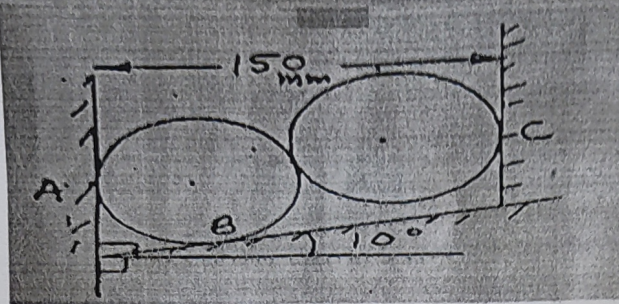


6. Determine the centroid of the shaded region.

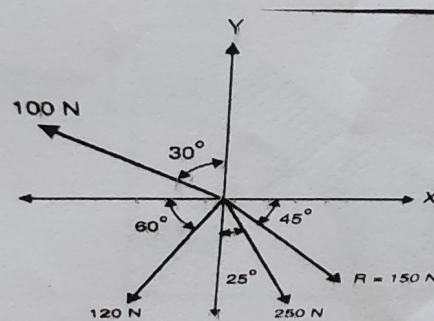


7.

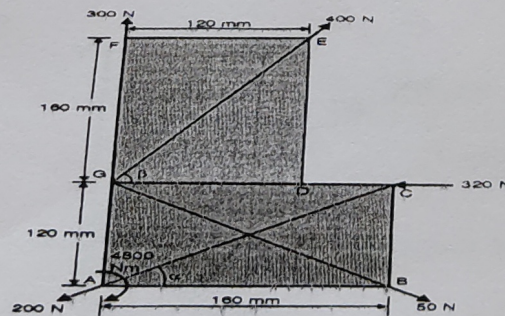
Two identical cylinders dia 100mm weight 200N are placed as shown. All contacts are smooth. Find out reactions at A, B and C. (CO-2) (8)



8. Find fourth force (F_4) completely so as to give the resultant of the system of forces.



9. Find the resultant of coplanar force system and locate the same on AB with due consideration to the applied moment.



10. Write a Short Note on :

1. Condition of Equilibrium
2. Lamis Therom
3. Varignon theorem.