



ROLL NO.	
ID NO.	

PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 80

Max Time: 120 Mins

Weightage: 40 %

ENDTERM FINAL EXAMINATION

I Semester AY 2017-18

Course: **CIV 101 Elements of Civil Engineering**

29 DEC 2017

Instructions:

- Write legibly
- Scientific and non programmable calculators are permitted

Part A

[4 Q x 5 M= 20 Marks]

- Explain different types of supports in the analysis of beams
- State and explain Lami's theorem
- Distinguish between centroid and Centre of gravity.
- Determine the support reactions for the beam shown in Figure-1 at A and B.

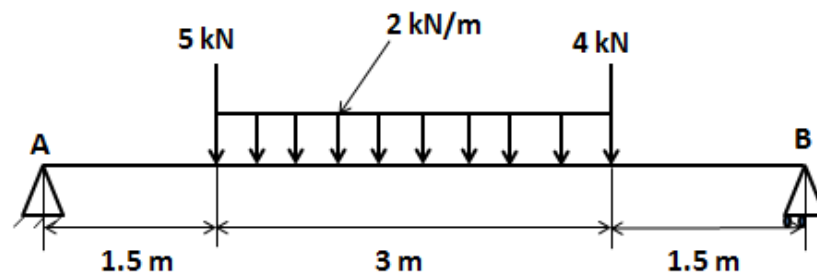


Figure-1

Part B

[2 Q x 10 M= 20 Marks]

- Determine the support reactions for a beam loaded as shown in Figure-2.
- Determine the reactions at the surfaces of contact and the tension in the string AB shown in Figure-3. The radii of spheres, $R_1 = R_2 = R_3 = 200$ mm.

Part C

[2 Q x 20 M= 40 Marks]

- Determine centroid of a rectangle by method of integration.
 - Determine the centroid of the lamina shown in Figure- 4
- Determine the moment of inertia of the unequal I –section about its centroidal axes shown in Figure-5

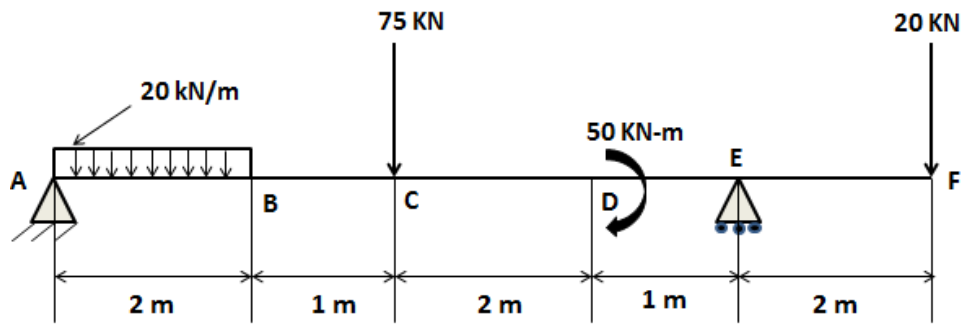


Figure-2

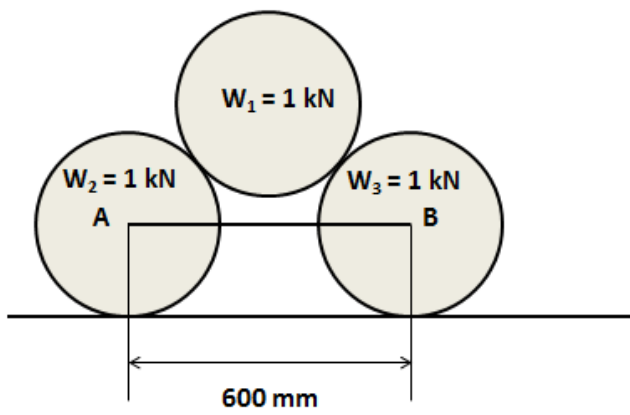


Figure-3

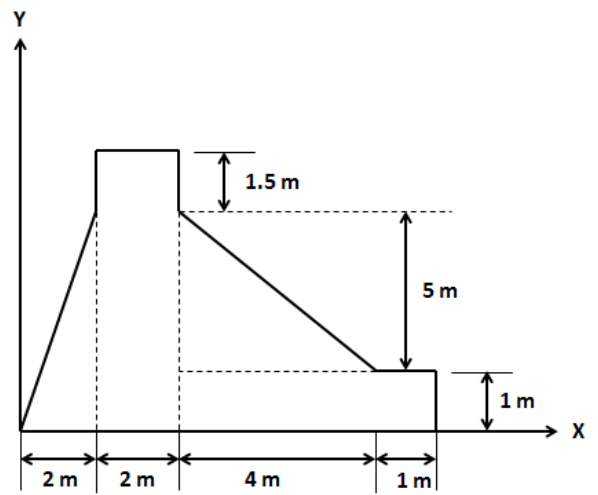


Figure-4

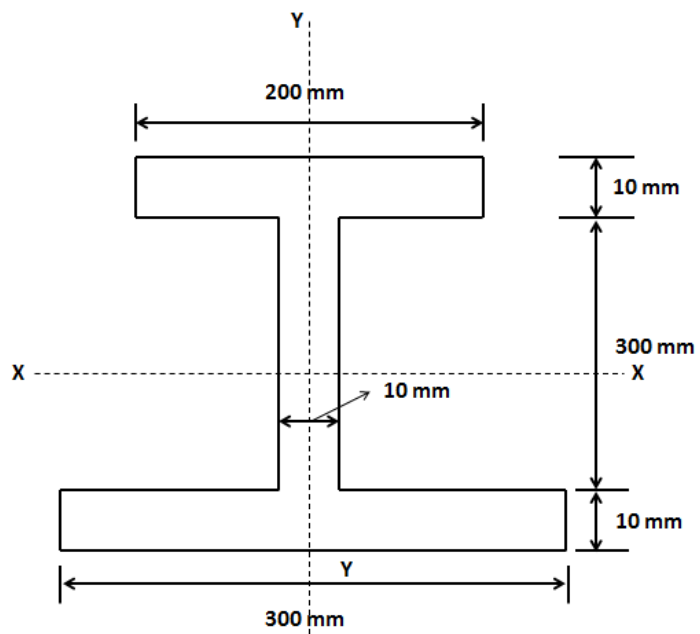


Figure-5

Max Marks: 40

Max Time: 60 Mins

Weightage: 20 %

TEST 2

I Semester AY 2017-2018

Course: **CIV 101 Elements of Civil Engineering**

26 OCT 2017

Instructions:

- i. Write legibly
- ii. Scientific and non programmable calculators are permitted

Part A

(3 Q x 4 M= 12 Marks)

1. Define a couple. Mention its characteristics.
2. Define free body diagram and list the types of forces acting on a free body.
3. Find the magnitude of two equal forces acting at a point with an angle of 60° between them, if the resultant is equal to $30\sqrt{3}$ N.

Part B

(2 Q x 6 M= 12 Marks)

4. Determine the magnitude & direction of the resultant of the coplanar concurrent force system shown in Figure-1.

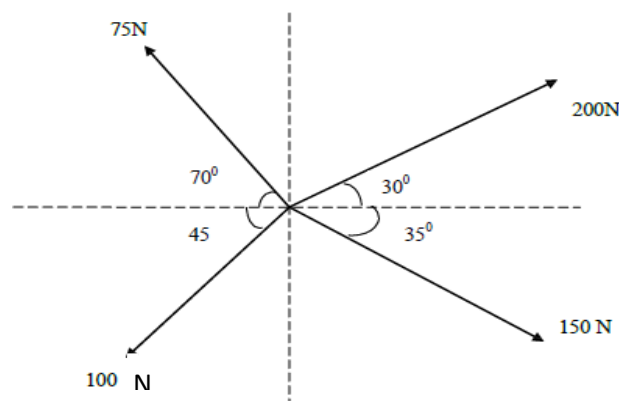


Figure-1

5. Two cables are connected at A and B as shown in Figure-2. A force of 30 KN is applied at C. Determine the forces in the cables CA and CB.

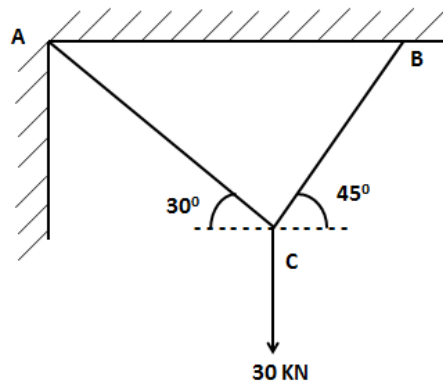


Figure - 2

Part C

(2 Q x 8 M= 16 Marks)

6. Four forces acting on a hook are shown in Figure -3. Determine the direction of the force 150 N such that the hook is pulled in the X – direction. Determine the resultant force in the X –direction.

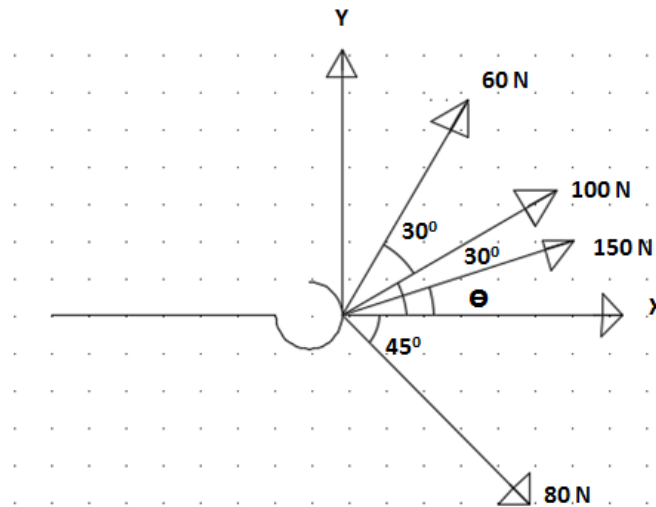


Figure-3

7. 26 kN force is the resultant of two forces, one of which is shown in figure -4. Determine other force.

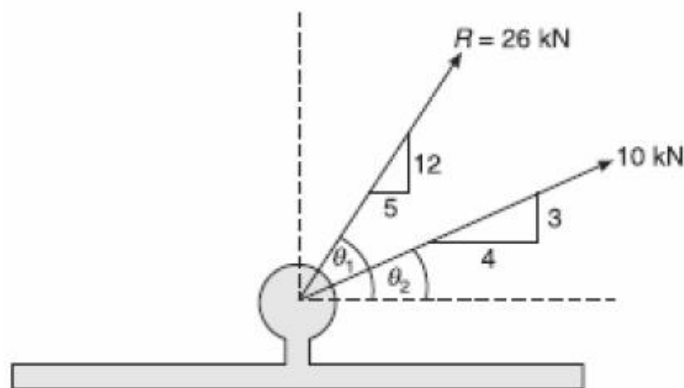


Figure-4



PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 40

Max Time: 60 Mins

Weightage: 20 %

TEST 1

I Semester 2017-2018

Course: **CIV 101 Elements of Civil Engineering**

18 SEPT 2017

Instructions:

- i. Write legibly
 - ii. Scientific and non programmable calculators are permitted
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Part A

(3 Q x 4 M= 12 Marks)

1. Define the following and also mention the units
 - a) Density
 - b) Specific Gravity
2. Define the following mechanical properties of building materials
 - a) Elasticity
 - b) Hardness
 - c) Impact Strength
 - d) Wear
3. List the constituents of good brick earth

Part B

(2 Q x 6 M= 12 Marks)

4. What is infrastructure? What is the role of Civil Engineers in Infrastructural development?
5. What are the requirements of good quality bricks?

Part C

(2 Q x 8 M= 16 Marks)

6. List the main disciplines of civil engineering and mention the purpose and application of any two disciplines.
7. Explain the formation of three important types of rocks with the help of rock cycle diagram