

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - NOV 2023**

Semester : Semester I - 2023

Course Code : CIV1003

Course Name : Sem I - CIV1003 - Elements of Engineering Mechanics

Program : B. TECH

Date : 6-NOV-2023

Time : 9:30AM - 11:00AM

Max Marks : 50

Weightage : 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(2 X 5 = 10M)

1. Describe the concept of Rigid body and Particle. Also mention any 4 assumptions made in Engineering Mechanics.

(CO1) [Knowledge]

2. Define a Moment and a Couple. Write their properties.

(CO1) [Knowledge]

PART B

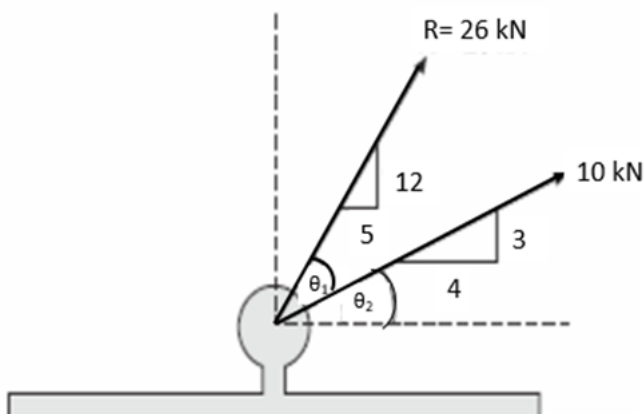
ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

3. Two forces F_1 and F_2 are acting at an angle of 120° . The bigger force is 40N and the resultant is perpendicular to the smaller one. Determine the magnitude of the smaller force and resultant.

(CO1) [Comprehension]

4. 26 kN force is the resultant for two forces, one of which is shown in figure as 10 kN. Determine other force .



(CO1) [Comprehension]

PART C

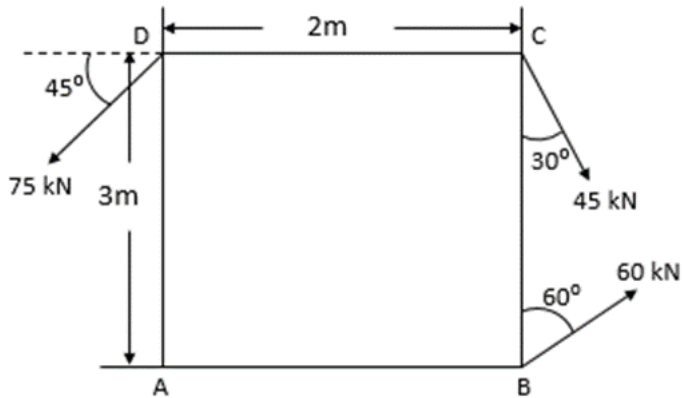
ANSWER ALL THE QUESTIONS

(1 X 20 = 20M)

5. Mechanics is the area associated to mathematics and physics stating the relationships between force, matter, and motion among physical objects. Based on the concepts relating to engineering mechanics

(i) State the Principle of transmissibility and superposition of force system. .

(ii) Also, for the non- concurrent force system shown in the figure, determine the magnitude, direction and distance of the resultant from the point 'A' for the system of forces.



(CO1) [Application]