MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(GOVERNMENT AIDED AUTONOMOUS ENGINEERING COLLEGE)

DEPARTMENT OF CIVIL ENGINEERING

SECOND SESSIONAL EXAMINATION, OCTOBER 2026
S3 CIVIL
B24CE2T01 MECHANICS OF SOLIDS

Time – 1 Hour 30 Minutes **Max: 40 Marks**

PART-A (4x3=12 marks)
Answer All Questions

1	Derive the relationship between load intensity, shear force, and bending moment for a beam.	(CO3)
2	For a simply supported beam of span L with an anti-clockwise moment m at the centre, draw the SFD and BMD.	(CO3)
3	What do you mean by the term section modulus. Find the section modulus of (i) Rectangular Section (ii) Circular section.	(CO4)
4	Find the deflection at free end of a cantilever beam of span 'l' with point load 'W' at free end. Also calculate the maximum slope.	(CO4)

PART – B
Answer All Questions

5	A simply supported beam of 5 m length has point loads of 25 kN at 1 m, 50 kN at 3 m, and a UDL of 30 kN/m over the last 2 m. Determine the reactions and draw the SFD and BMD.	(CO3)

(14 marks)

6	A T beam has the following dimensions: Flange size: 100 mm x 10 mm, Web thickness: 10 mm, Overall depth: 200 mm. If the shear force acting on the beam is 40 kN, draw the shear stress distribution across the depth.	(CO4)

(14 marks)

VISION

To develop a department proficient in all aspects of civil engineering blending theory and practice

MISSION

1. To impart the right combination of civil engineering fundamentals and use of modern tools to the students
2. To encourage learning with due emphasis given to professional ethics and traditional norms.
3. To enhance the knowledge base of students in liaison with practice and research
4. To encourage life-long learning

Question No.	1	2	3	4	5	6	**Total Marks**
CO Mapping	CO3	CO3	CO4	CO4	CO3	CO4	
Bloom Taxonomy Level	2	2	1	2	4	4	
Max. Marks	3	3	3	3	14	14	40

	Prepared by	**Scrutinized by**	**Approved by**
Name	Dr. Anu James	Prof. Nidhin B Parappattu	Dr. Elson John (HOD CE)
Signature			