Reg.No: | | | | | | | |

SNS College of Technology, Coimbatore-35
(Autonomous)
B.E Internal Assessment Examination II
Academic Year 2022-2023(Odd)
III Semester
19CET203-Mechanics of Solids

A

Time: 1 1/2 Hours **Maximum Marks: 50**

Answer All Questions

PART – A (5 X 2 = 10)

			CO	Blooms
1.	Define point of contra flexure?.	2	CO2	R
2.	Define shear force and bending moment?	2	CO2	R
3.	State the different types of supports.	2	CO2	U
4.	What are the methods for finding out the slope and deflection at a section?	2	CO3	R
5.	Discuss about the maximum deflection in a simply supported beam Subjected to uniformly distributed load over the entire span?	2	CO3	R

PART – B (13+13+14 = 40 Marks)

6.	(a) A simply supported beam of span 10 carries a concentrated load of 10 kN at 2 m from the left support and a UDL of 4 kN/m over the entire length. Sketch the shearing force and bending moment diagrams for the beam.	13	CO2	U
	(or)			
	(b) A cantilever 1.5m long is loaded with a uniformly distribution load of 2 kN/m run over a length of 1.25m from the free end it also carries a point load of 3kN at a distance of 0.25m from the free end. Draw the shear force and bending moment diagram of the cantilever.	13	CO2	U
7.	(a) A Simply supported beam 6 m span carries UDL of 20 KN/m for left half of span and two point loads of 25 KN end 35 KN at 4 m and 5 m from left support. Find maximum SF and BM and their location drawing SF and BM diagrams.	13	CO2	R
	(or)			
	(b) A beam of size 150 mm wide, 250 mm deep carries a uniformly distributed load of w kN/m over entire span of 4 m. A concentrated load 1 kN is acting at a distance of 1.2 m from the left support. If the bending stress at a section 1.8m from the left support is not to exceed 3.25 N/mm^2 find the load w.	13	CO2	R

8.	A beam AB of length 8 m is simply supported at its ends and carries two point loads of 50 kN and 40 kN at a distance of 2 m and 5 m respectively from left support A. Determine, deflection under each load, maximum deflection and the position at which maximum deflection occurs. Take E= 2 x 10^5 N/mm^2 and I = 8.5 X10^6 mm^4.	14	CO3	R
	(or)			
	A Simply supported beam of length 6 m carries a UDL of 20KN/m throughout its length and a point of 30 KN at 2 m from the right support. Draw the shear force and bending moment diagram. Also find the position and magnitude of maximum Bending moment	14	CO2	R

Prepared By Verified By HOD