Name: Enrolment No:	MANIPAL UNIVERSITY JAIPUR

Odd Semester Mid-Term Examination, December 2024
Faculty of Engineering, School of Civil, Biotechnological & Chemical Engineering
Department of Civil Engineering
BTech – Civil Engineering

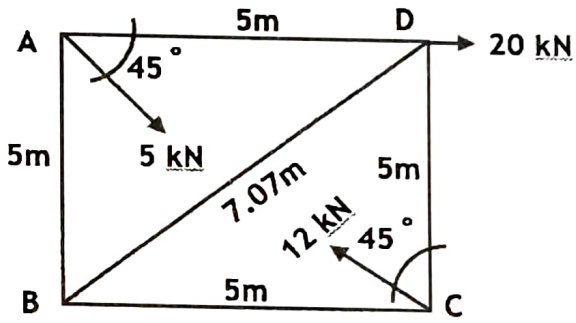
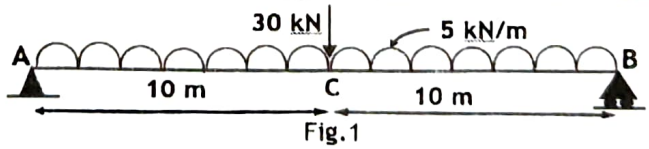
Course Code: CIV1001	Course: Engineering Materials and Mechanics	Semester: 1
Time: 1.5 hrs.		Max. Marks: 30

Instructions: All questions are compulsory.
Missing data, if any, may be assumed suitably.
Calculator is allowed

SECTION A

S.No.		Marks	CO
Q A1	A first-class brick should have a water absorption limit of less than _____.	02	CO1
Q A2	State True or False: a. The C_3A compound in cement is responsible for the early strength of the cement mixture. b. PVC and nylon are examples of thermoplastic materials.	02	CO1
Q A3	What chemical compound is added to Rapid Hardening Cement to produce Extra Rapid Hardening Cement?	02	CO1

SECTION B

Q B1	Calculate the moment generated at the centre of the AB line. 	4	CO2
Q B2	The table shows the engineering properties of four different polymers. Now from the data, which property is dominating for each polymer and how is that property going to influence its application?	(2+4)	CO1,5
Q B3	Draw the shear force and bending moment diagrams for the beam shown in Fig.1.  Fig.1	6	CO3,5

Types of Fiber	Tensile Strength (MPa)	Young's Modulus (GPa)	Ultimate Elongation (%)	Specific Gravity
Rayon	420-630	7	10-25	1.5
Nylon	770-840	4.2	16-20	1.1
Polyester	735-875	8.4	11-13	1.4
Acrylic	210-420	2.1	25-45	1.1