Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.ARCH - SEMESTER– II • EXAMINATION – WINTER • 2014

Subject Code: 1025004 **Date: 29-12-2014**

Subject Name: Structure-II

Time: 10:30 am to 12:30 pm **Total Marks: 50**

Instructions:

1. **Attempt all questions.**
2. **Make suitable sketches wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define the following terms: 1) Stress 2) Hooke's Law 3) Lateral Strain 4) Normal Stress 5) Tangential Stress	**05**
	(b)	Enlist the types of beams and explain the difference between the statically determinate beams and statically indeterminate beams with suitable example.	**05**
Q.2	**(a)**	Explain Truss with neat sketch and also the assumptions regarding the plane truss.	**05**
	(b)	Explain: 1) Prismatic and Non-prismatic elements. 2) Various types of trusses as per the stability. 3) Compound Element	**05**
		OR	
Q.2	**(a)**	Explain the following terms with suitable example: 1) Point of Contraflexure 2) Critical Point 3) Composite Element	**05**
	(b)	Explain the different types of support conditions with suitable example and sketches.	**05**
Q.3	**(a)**	Explain the following terms: 1) Shear Force 2) Bending Moment.	**04**
	(b)	Draw the shear force and bending moment diagrams for simply supported beam AB, having span as 'L' m and carrying UDL of 'w' kN/m over the half length of the beam, starting from the left end A.	**06**
		OR	
	(b)	Find out the support reaction in of simply supported beam as shown in the Fig. 1.	**06**
Q.4	**(a)**	Draw the shear force and bending moment diagrams for the beam shown in the Fig. 2.	**10**
		OR	
	(a)	Draw the shear force and bending moment diagrams for the beam shown in the Fig. 3.	**10**
Q.5	**(a)**	A bar of circular cross section tapered from 35 mm at one end to 30 mm at other end in 500 mm length is subjected to axial pull of 120 kN. If elongation observed is 0.4 mm, what will be the modulus of elasticity of material?	**05**
	(b)	Find out the reaction and the member forces for AH, BH, and BG of the plane truss as shown in Fig. 4.	**05**

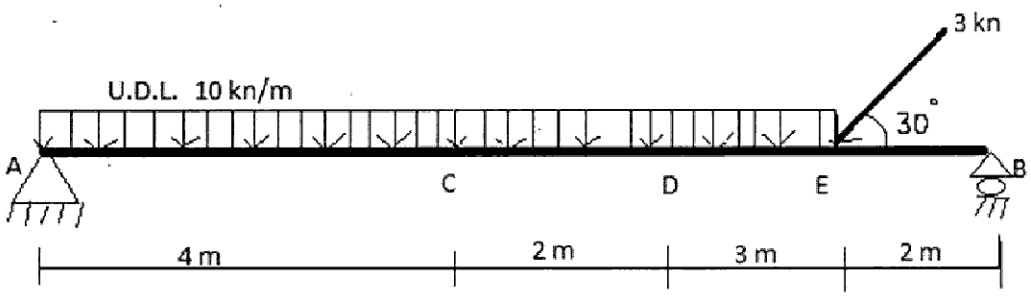

Fig. 1

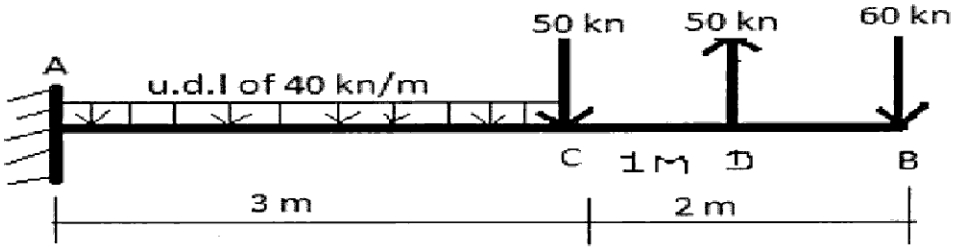

Fig. 2

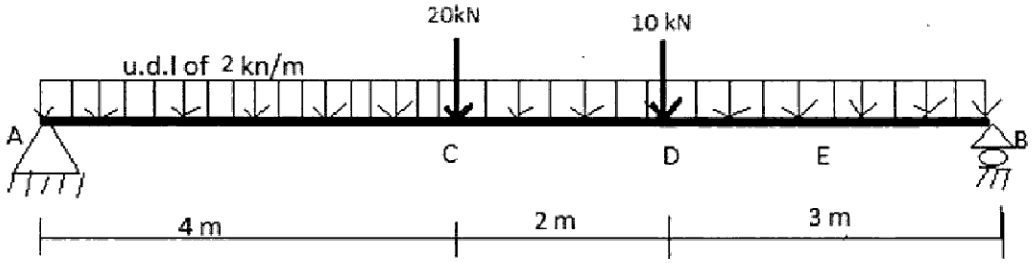

Fig. 3

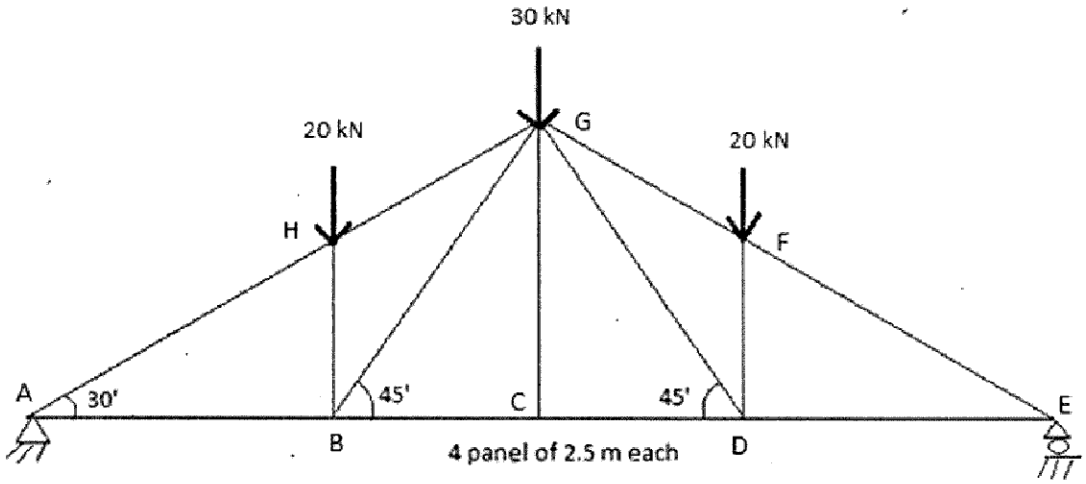

Fig. 4

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