USN										

FIRST Semester B. E. Degree Semester End Examination (SEE), Jan/ Feb 2024

Introduction to Civil Engineering

(Model Question Paper - 1)

[Time: 3 Hours]		[Maximum Marks: 100]

Instructions to students:

i. **Answer FIVE FULL Questions as per choice.**
ii. **Use BLACK ball point pen for text, figure, table, etc.**
iii. **Assume missing data, if any.**

			Marks	**RBT Level**	**CO**
		Module 1			
1.	**a)**	Briefly explain the scope of any four fields of Civil Engineering.	10	L1	CO1
	b)	Explain the role of Civil Engineering in the Infrastructure development of the country?	10	L1	CO1
		OR			
2.	**a)**	Explain the Classification of bricks used in construction?	10	L1	CO1
	b)	Summarize the requirements of good building stones.	10	L1	CO1
		Module 2			
3.	**a)**	List the types of foundations and explain any two of them in detail.	10	L1, L2	CO1
	b)	Describe requirements of good Stone masonry? What are the advantages of stone masonry over brick masonry?	10	L1, L2	CO1
		OR			
4.	**a)**	Explain different types of Lintels and classify types of arches?	10	L1, L2	CO1
	b)	Outline the factors to be considered while selecting Flooring and Roof covering.	10	L1, L2	CO1
		Module 3			

5. **a)** A force of 500 N acts on a body resting on an inclined plane as shown in Fig.5.a. Resolve the force into its

i) X and Y components

ii) components along parallel and perpendicular directions to the inclined plane.

Fig. 5.a

			07	L3, L4	CO2

b) Two forces are acting on a structure at a point O as shown in Fig.5.b. Determine the resultant force acting on the structure.

			07	L3, L4	CO2

Fig. 5.b

A cable passes over the top of a boom of a crane and carries a crate weighing 200 kN at one end as shown in Fig.5.c Determine the force to be applied in the other end of the cable such that the resultant force passes through the center line of the boom. Also determine the resultant force on the boom.
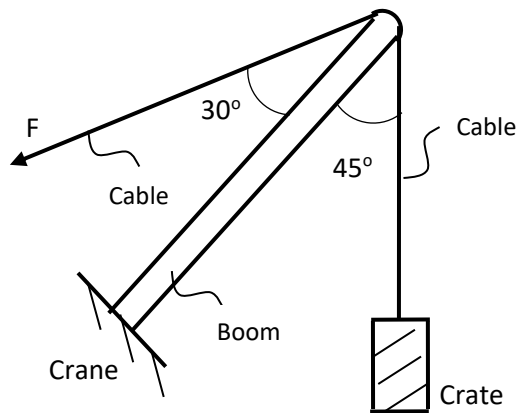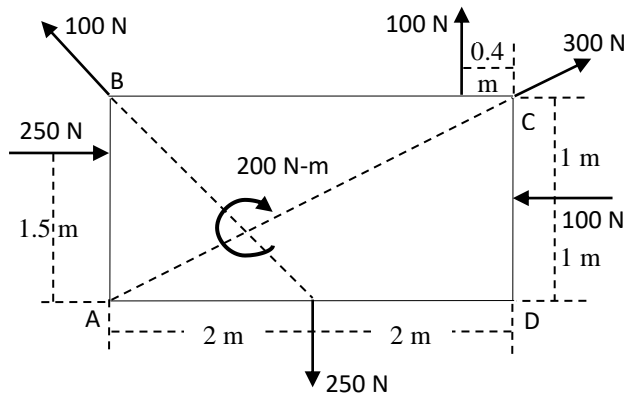

Fig. 5.c

06   L3, L4   CO2

OR

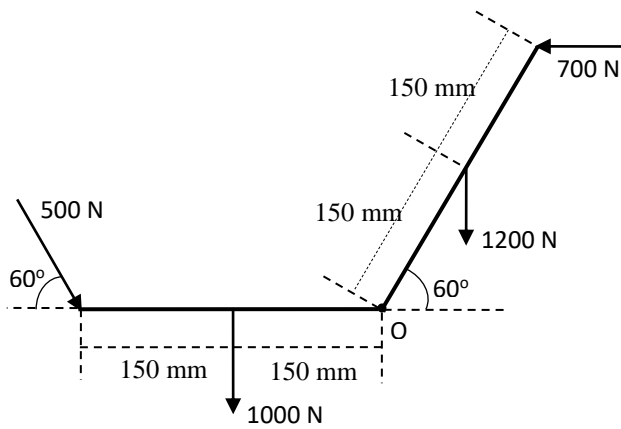**6.   a)**   Determine the magnitude, direction and position of the resultant of the force system with

respect to the point D shown in Fig.6.a

Fig. 6.a

10   L3, L4   CO2

b) Determine the magnitude, direction and position of the resultant of the force system with

respect to the point O shown in Fig.6.b.

Fig. 6.b

Module 4

7. **a)**	Explain different types of beams with neat sketches.	08	L3, L4	CO3

b) Determine the support reactions for the simply supported beam shown in Fig.7.a
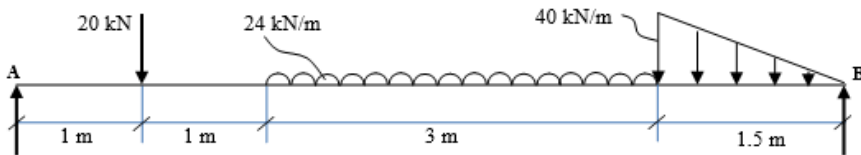
L3, L4	CO3
12	

Fig.7.a

OR

8. **a)**	State and prove Lami's Theorem.	06	L3, L4	CO3

b) Determine the tensions in various segments of the cable shown in Fig.8.b. Also determine the magnitudes of the weights W_1 and W_2 to keep portion BC in level position.
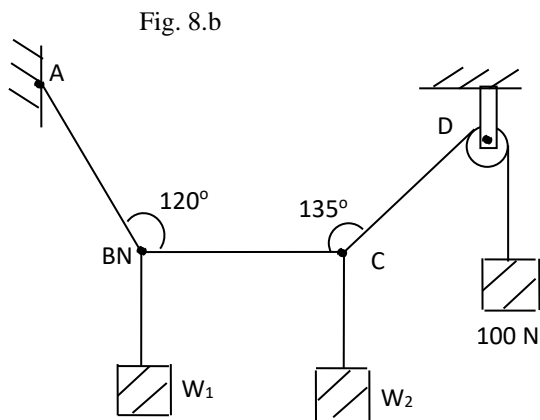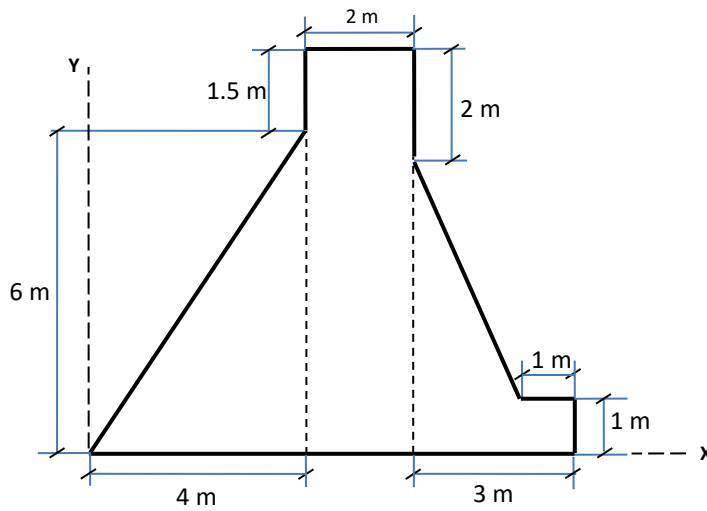
Fig. 8.b

14	L3, L4	CO3

Module 5

9. **a)**	Locate the Centroid of a Triangle from first principle.	10	L4, L5	CO4

b) Locate the centroid of the composite area shown in Fig.9.b with respect to the given
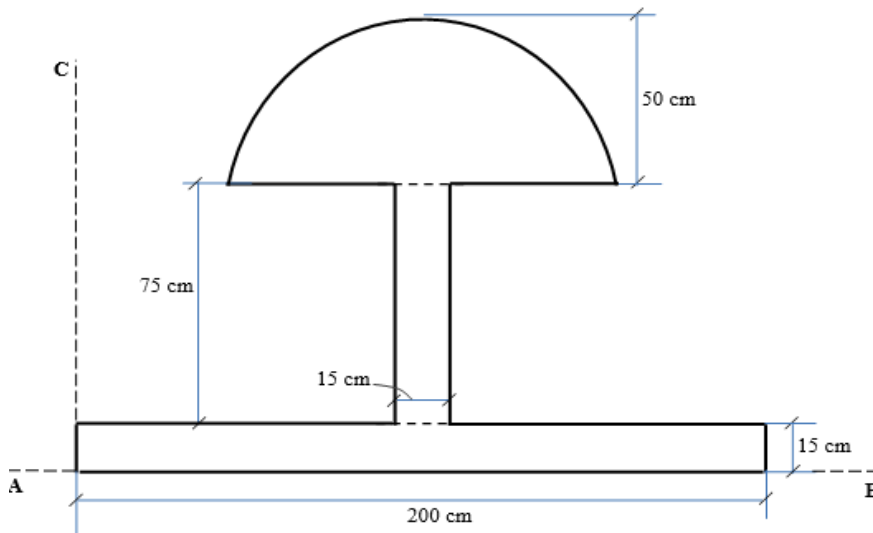

10   L4, L5   CO4

reference axes.   Fig. 9.b

OR

10. a) State and prove Parallel Axis Theorem as applied to Moment of Inertia   10   L4, L5   CO4

b) Find the Polar radius of gyration for the composite section along Horizontal axis as shown in Fig.10.b

10   L4, L5   CO4

Fig.10.b

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