माफक- 010

Earthquake Resistant Design of Buildings
(1090)

P. Pages : 2

Time : Four Hours

Max. Marks : 100

Instructions to Candidates :
1.	Do not write anything on question paper except Seat No.
2.	Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3.	Students should note, no supplement will be provided.
4.	Attempt **any five** questions.

1.	a)	What is earthquake ? How do human activities induce earthquakes.	**10**

	b)	Explain the plate tectonics theory and its mechanism.	**10**

2.		Discuss the following **any five**.	**20**

		i)	Response factors.

		ii)	Response spectra.

		iii)	Resonance.

		iv)	Restoring force.

		v)	Damping.

		vi)	Body waves & surface waves.

		vii)	Rayleigh waves & love waves.

3.	a)	Define liquifaction. What are the factors that affect liquifaction.	**10**

	b)	To ensure the safety of structure during an earthquake what are the important considerations from the view point of soil.	**10**

4. a) How do functional requirement affect the building structure from the point of view of earthquake resistance.   **10**

    b) Simplicity and symmetry are the key to making a building earthquake resistant. Explain the concept with the help of example.   **10**

5. a) Discuss how to increase the following for a building in an earthquake prone area.   **10**

        i)   Period of vibration.

        ii) Energy dissipation capacity.

        iii) Ductility.

    b) State the Assumptions made in the analysis of earthquake resistant design of buildings.   **10**

6. a) Define shear wall, How are these classified.   **5**

    b) What is the difference in the structural behaviour of long and short shear walls.   **5**

    c) Discuss the concept of flanged shear walls.   **5**

    d) What are the principles of earthquake resistant design of R.C.C. buildings.   **5**

7. a) State the reasons for the Poor performance of masonary buildings in sesmic areas.   **10**

    b) Describe the various earthquake resistant features that can be introduced in a masonary building to make it earthquake resistant.   **10**

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