



12. (a) Explain with neat examples of Multi-Degree-of-Freedom systems.

Or

(b) Derive the orthogonality relation between the modal shapes of a two degrees of freedom.

13. (a) Write in detail about Seismograph with neat schematic diagram and their classifications.

Or

(b) Explain the plate tectonics theory and its mechanism.

14. (a) Discuss briefly about the response spectrum and design spectrum.

Or

(b) Define liquefaction. What are the factors that affect liquefaction? What are the measures taken to reduce the possibility of liquefaction?

15. (a) Write in brief on the design philosophy and methodology of earthquake resistant design.

Or

(b) Discuss seismic active control methods and its concepts.