Syllabus

(Ph. D. admission Entrance Test in National Centre for Disaster Mitigation and Management)

- Introduction of Engineering Seismology, Plate margins and earthquake occurrence; Seismic Waves: Body waves and Surface waves; Earthquake Size: Intensity, Magnitude; Local site effects; Seismicity of India.
- Sources of Dynamic Loading; Concept of Simple Harmonic Motion, Inertia force, Damping Force, Damped and Un-damped free vibrations of a Single Degree of Freedom System. Forced Vibration of Single Degree of Freedom System, Harmonic Loading, Periodic Loading, Irregular loading. Ground Motion Characteristics. Equation of motion under support excitation. Multi Degree of Freedom system, Normal Mode theory.
- Dynamic actions on buildings wind versus earthquake; Basic Aspects of Seismic Design; Virtues of Earthquake Resistant Buildings; Earthquake design as per Indian Standards.

MODEL QUESTIONS

Q-1 Which of the following describes the build-up and release of stress during an earthquake?
a) the Modified Mercalli Scale
b) the elastic rebound theory
c) the principle of superposition
d) the travel time difference

Q-2 The amount of ground displacement in a earthquake is called the _____ .
a) epicenter
b) dip
c) slip
d) focus

Q-3 The point where movement occurred which triggered the earthquake is the _____ .
a) dip
b) epicenter
c) focus
d) strike

Q-4 Which of the following sequences correctly lists the different arrivals from first to last?

a) P waves ... S waves .... Surface waves
b) Surface waves ... P waves .... S waves
c) P waves ... Surface waves ... S waves
d) S waves ... P waves .... Surface waves

Q5 How do rock particles move during the passage of a P wave through the rock?

a) back and forth parallel to the direction of wave travel
b) back and forth perpendicular to the direction of wave travel
c) in a rolling circular motion
d) the particles do not move

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