Fundamentals of Earthquake Engineering for Building Structures – Session 1: Seismology and earthquake effects – February 8, 2021

Due: March 8, 2021, 8:00 am EST – Submit through the online form

Pick the best answer.

1. Earthquakes occur:
   a. In coastal areas
   b. Only at plate boundaries
   c. Mainly at plate boundaries but also in other areas

2. Earthquake intensity ____ with distance.
   a. Increases
   b. Decreases
   c. Remains constant

3. Soft soils generally move ___ than firm soils in an earthquake
   a. More
   b. Less
   c. About the same

4. Earthquake magnitude measures
   a. The amount of energy released
   b. The peak acceleration observed
   c. The level of damage and other effects

5. Earthquake acceleration can be described as
   a. Earthquake magnitude
   b. Earthquake intensity
   c. Earthquake damage

6. Which statement is correct?
   a. A single earthquake can have a range of magnitudes, but only one intensity
   b. A single earthquake can have a range of intensities, but only one magnitude

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7. A Magnitude 7 earthquake releases approximately as much energy as _____ Magnitude 5 earthquakes.
   a. 1.4
   b. 10
   c. 32
   d. 100
   e. 1000

8. Accelerations corresponding to an earthquake of a known magnitude at a known fault may be described as established
   a. Deterministically
   b. Statistically
   c. Stochastically

9. Accelerations corresponding to a defined return period considering multiple sources (faults) can be described as established
   a. Probabilistically
   b. Statistically
   c. Deterministically

10. Which statement is correct?
    a. The “uniform hazard” approach defines a constant acceleration while the “uniform risk” approach defines the probability of a given acceleration.
    b. The “uniform hazard” approach defines a constant return period while the “uniform risk” approach defines a risk of collapse in a given period.
    c. The “uniform hazard” approach is synonymous with the “uniform risk” approach.