

Jaypee University of Information Technology, Wagnaghat

T-1 Examination- February 2019

B. Tech. 7th Semester (Civil Engg.) & M. Tech. 2nd Semester (Structural Engg.)

Course Code: 12M1WCE213

Course Name: Earthquake Resistant Design of Structures Max. Marks: 15

Course Credit: 03

Time: 60 Minutes

Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means. Assume any missing data.

Q .1. Define followings

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|---------------------------------|-----|
| a. Seismology | 1 |
| b. Elastic rebound theory | 1 |
| c. Fault and type of faults | 1.5 |
| d. Movement of plate boundaries | 1.5 |
| e. Earthquake stress waves | 1.5 |

Q .2. _____ seismic wave does not pass through a fluid. 0.5

Q .3. Define earthquake terminology with a neat sketch. 2

Q .4. Explain intensity of earthquake along with different intensity scale in chronological order used to evaluate the effect of earthquake. 2

Q .5. At a recording station a difference in time of arrival between P waves and S waves was observed to be 2.5 seconds. What is the approximate distance from the station at which the event occurred? Assume P wave velocity as 10 km/sec and S wave velocity as 6 km/sec. 2

Q .6. Estimate the moment magnitude of an event with rupture length of 100km, rupture width of 50 km and slip of average fault slip of 2 m. Take modulus of rigidity, μ as 30 GN/m². 2