JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1, February 2016

M.Tech. (SE) 2nd Semester, and B.Tech. (Civil) 8th Semester

Course Code: **12M1WCE213**   MAX. MARKS: 15

COURSE NAME: Earthquake Resistant Design of Structures   MAX. TIME: 1 HR.

COURSE CREDITS: 03

NOTE: *All questions are compulsory. Marks are indicated against questions. Carrying of mobile phone is strictly prohibited and will be treated as a case of unfair means.*

1. What is earthquake magnitude and how it differs from intensity? Discuss the different types of earthquake magnitudes, i.e., M_L, M_S, M_B, M_D and M_W in detail.   [5]

2. What are the factors that affect the selection of seismic analysis method? Explain the following methods of seismic analysis discussing the conditions of their suitability:

   (i)   Linear static analysis,

   (ii)   Linear dynamic analysis,

   (iii)   Non-linear static, and

   (iv)   Non-linear dynamic analysis.   [5]

3. Discuss various types of plan and vertical irregularities and the conditions when a building will become irregular as per IS-1893: 2002. Support your answer with suitable diagrams.   [5]

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