Karunya University
(Karunya Institute of Technology and Sciences)
(Declared as Deemed to be University under Sec.3 of the UGC Act, 1965)

End Semester Examinations - 2015-16 Even Semester - May 2016

14CE3013 Design of Structures for Dynamic load

Set B

Time : 3 hrs
Total Marks: 100

1. a. Compare the behaviour of Concrete and steel under cyclic load (8)

   b. Enumerate the step by step procedure for push over analysis (12)

OR

2. Explain how buried structures are designed to resist earthquakes. (20)

3. Explain the difference in the design of structures for blast, earthquake and wind loads (20)

OR

4. What are different methods for design against blast? Draw the pressure distribution diagram? Explain the types of blast. (20)

5. A building of size 12 x 12 m in plan and 30m in height is located in Chennai at a distance of 150m from the sea face. Determine the distribution of Wind pressure along the height of the building. If the building was to be located in Coimbatore what will be the distribution of the wind pressure. Assume suitable data. (20)

OR

6. a. Describe aeroeleastic and aerodynamic forces? How the variation in Reynolds number affects the Formation of eddies? (10)

   b. Explain the wind tunnel test (10)

7. Compare the structural control methods with emphasis on application. Briefly discuss on base isolation. (20)

OR

8. For a building, the dynamic properties (natural periods, and mode shapes) for vibration in the X-direction have been obtained by carrying out a free vibration analysis as given in the table. Obtain the design seismic force in the X-direction by the dynamic analysis method and distribute it with building height of 15 m. The building is located in zone 4 in hard soil. (20)

Natural Period (sec)	Mass kg	0.840	0.230	0.150
		Mode 1	Mode 2	Mode 3
Roof	2000	1.00	1.00	1.00
3rd Floor	3500	0.86	0.18	-0.76
2nd floor	3500	0.69	-0.56	-0.45
1st floor	3500	0.42	-0.92	0.98

9. Write a brief note on System Identification. (20)

Wishing you All the Best