Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination – June – 2017**

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| **Code :** | **14CE3013** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DESIGN OF STRUCTURES FOR DYNAMIC LOAD** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | An increase in tensile [yield strength](https://en.wikipedia.org/wiki/Yield_strength) occurs at the expense of compressive [yield strength](https://en.wikipedia.org/wiki/Yield_strength)” Identify this effect and discuss the beahaviour. | CO1 | 10 |
| b. | Discuss the behavior of soil subjected to cyclic loading. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Outline the various Lifeline Protection Technologies. | CO1 | 10 |
| b. | Explain the earthquake resistant design of buried structures. | CO1 | 10 |
| 3. | a. | Enumerate the step by step procedure for push over analysis. | CO1 | 12 |
|  | b. | Differentiate the design of structures for blast, earthquake and wind loads. | CO2 | 8 |
| (OR) | | | | |
| 4. |  | A 150 m tall RC cylindrical chimney of uniform cross section (A = 9 m2, I =9 m4) has weight of 25 kN/m3 and E = 3.4X104N/mm2. Determine the base moment and shear under earthquake conditions. The structure is located in seismic zone III and is supported on raft foundation. Take damping factor as 5% and importance factor as 2. | CO2 | 20 |
| 5. |  | Differentiate the aeroelastic and aerodynamic effects. Explain in detail the procedure of wind load analysis using wind tunnel test. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Discuss the mechanism of damage of buildings subjected to blast and the procedure for analysis of structures subjected to blast load. | CO2 | 20 |
| 7. |  | A building of size 15x 15 m in plan and 33m in height is located in Mumbai at a distance of 200m from the sea face. Determine the distribution of Wind pressure along the height of the building. Assume suitable data. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Compare the structural control methods with emphasis on application. Briefly discuss on base isolation. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Discuss on system identification with respect to base isolation technique. | CO3 | 20 |

ALL THE BEST