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BICEE-022

B.Tech. CIVIL ENGINEERING

(BTCLEVI)

Term-End Examination, 2019

BICEE-022 : ADVANCED DESIGN OF FOUNDATION

Time : 3 Hours]

[Maximum Marks : 70

Note : Attempt any **seven** questions in all. All question carry **equal** marks. Use of scientific calculator is permitted.

1. What do you understand by contact pressure ? What are factors that affect the contact pressure distribution ?
[10]
2. Describe the salient features and limitations of Winkler model of Soil behaviour.
[10]
3. Compare diaphragm cellular Cofferdams and circular Cofferdams.
[10]
4. Discuss the procedure for checking the stability of a Cantilever sheet pile wall.
[10]

5. Define the following terms : [10]
- (a) Vibration Isolation
 - (b) Natural Frequency
 - (c) Resonance
 - (d) Damping
 - (e) Degree of freedom
6. In a test block of size 1.5m X 1.0m X 0.75m resonance occurs at frequency of 20 cycles per second in the vertical vibration. Determine the coefficient of elastic uniform compression (C_u), if the mass of oscillator is 70kg and force produced by it at 15 cycles per sec. is 1000N. Also compute the maximum amplitude at 15 cycles per second. [10]
7. What design considerations are assumed in design of foundation for water tanks ? [10]
8. What is a shell foundation ? When are shell foundations preferred ? Describe the different types of shell foundation. [10]

9. Write short notes on **any two** of the following :[2x5=10]

- (a) Dynamic Soil Constants
- (b) Barkan Method of Machine foundation design.
- (c) Types of coffer dams.

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