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**BICEE-022**

# B.Tech. CIVIL ENGINEERING (BTCLEVI)

## Term-End Examination

**June, 2016**

00126

## BICEE-022 : ADVANCED DESIGN OF FOUNDATION

*Time : 3 hours* *Maximum Marks : 70*

***Note :*** *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted. Assume suitable data, if required.*

**1.** Discuss with the help of neat sketch contact pressure distribution under rigid and flexible footings. *14*

**2.** Determine the coefficient of elastic uniform compression, if a vibration test on a concrete block of 1·2 m cube gave a resonant frequency of 40 Hz in vertical vibration. The weight of the oscillator used was 600 N. *14*

**3.** (a) What are the functions of anchored bulkhead ? *4*

(b) Explain how the principle of active and passive earth pressure helps in reducing the deflection of sheet pile. *5*

(c) Differentiate between the free earth support and fixed earth support methods of design of sheet piles. *5*

**4.** Name the different models which are used in the analysis of soil structure interaction. Describe the Winklers model in detail. *14*

**5.** What is a coffer dam ? Name the different types of coffer dams with sketches and discuss their advantages and disadvantages. *14*

**6.** What is shell foundation ? Explain the method of design of foundation for a steel chimney. *14*

**7.** Write short notes on any ***two*** of the following : *2×7=14*

(a) Two parameter models for soil structure interaction

(b) Assumptions of Coulomb's Wedge Theory for determination of earth pressure

(c) Resonance of machine foundation