School of Civil Engineering
Civil Engineering
ETE - Jun 2023

Time : 3 Hours   **Marks : 50**

Sem VI - BCE01T5705 - Advanced Concrete Design
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1.	Illustrate one ways slab.	K2 CO4 (2)
2.	Explain Rise and fall in staircase with neat sketch.	K1 CO2 (2)
3.	Explain the use of shear key in retaining walls.	K2 CO3 (2)
4.	Define substructure and foundation.	K1 CO1 (2)
5.	Illustrate the need of deep foundation.	K2 CO5 (2)
6.	Describe the angel of internal friction and angle of repose with their function in detail.	K3 CO2 (5)
7.	Create a design for a rectangular footing with consistent thickness to support an axially loaded column measuring 300mmx550mm. The column carries a load of 1100kN. The soil's safe bearing capacity is 210 kN/m2. Utilize M20 grade concrete and Fe 415 grade steel in the design.	K4 CO6 (6)
8.	Sketch a dog legged stair case showing all its components and explain each in detail.	K3 CO1 (5)
9.	Analyse a a public building liable to overcrowding having a dog legged stair case for an office building in a room having clear dimensions 3.0 m x 6.0 m . height is 3.5 m. Stair are supported on brick walls 230 mm thick at the end of the landings. Use M 20 concrete and Fe 415 Steel. Assume any missing data.	K5 CO4 (8)
10.	Classify the different types of forces acting on retaining walls with their impact on design.	K4 CO3 (8)
11.	Illustrate steps of designing combined footing.	K5 CO5 (8)