School of Engineering

B.TECH Civil Engineering
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem VI - G1UA603T - Advanced Concrete Design

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Discuss the limitations of yield line theory?	K1(2)
2)	Differentite cantilever and counterfort retaining wall.	K2(4)
3)	Discuss the guidelines to be considered while designing a staircase .	K2(6)
4)	The gravity loading on a 'waist slab' type flight can be resolved into components normal to the flight and tangential to the flight. Describe their load effects on the waist slab if it is (i) spanning transversely, (ii) spamling longitudinally.	K3(9)
5)	What are the forces acting on a retaining wall?	K3(9)
6)	A square interior panel of an intermediate floor is of effective dimension 3 m x 3 m. The live load on the floor is 2 kN/m2. Finishes is 1.5 kN/m2. Analyse the slab using yield line approach and design the slab. Use M25 concrete and Fe 415 steel.	K5(10)
7)	Discuss in details about advantage and disadvantages of moment redistribution	K4(12)
8)	Design heel slab and toe slab of a cantilever retaining wall for the following data :Stem height -5.5m.,Soil unit weight -18000 N/m3. Angle of repose-30'.,Soil bearing capacity- 160KN/m2.(Use M15 concrete).	K5(15)
9)	Design a plain concrete footing for a column, 300 mm x 300mm, an axial Assuming unit weight of concrete and soil as 24 kN/m3 and 18 kN/m3 respectively, load of 330 kN (under service loads, due to dead and live loads). Assume an actual gross soil pressure allowable soil bearing pressure of 360 KN/m2 at a depth of 1.0 m below groundAssume M 20 concrete and Fe 415 steel.	K5(15)
10)	Design a circular slab of 4.5 meter diameter, simply supported along the edges, to carry a service load of 5 kN/m2.Adopt M20 Grade concrete and Fe 415 Grade steel. Use yield line method for analysis.	K6(18)