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School of University Polytechnic

Diploma in Civil Engineering
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem V - N1DB501T - Design of Reinforced Cement Concrete StructureGeneral 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) State that statement is true or false: 1. Steel used in RCC is mild steel. [True/False] 2. Partial factor of safety of steel is less than concrete. [True/ False] K1 (2)
- 2) Discover True/ False: 1. In singly reinforced beam, reinforcement is provided in compression zone. [T/F] 2. The distance between concrete face to centre of main reinforcement is called effective span. [T/F] K2 (4)
- 3) Explain with diagram to show how pretensioning is done K2 (6)
- 4) Write a short note on post tensioning. K3 (9)
- 5) Determine the concept of pretensioning. K3 (9)
- 6) Evaluate the types of column according to loading K5 (10)
- 7) Point out the concept of prestressed concrete and its types. K4 (12)
- 8) Examine the type of section and the depth of neutral axis in a beam 260mm x 400mm. The beam is singly reinforced beam with 5 bars of 12mm diameter. Use M25, Fe415 and IS 456:2000 code. K5 (15)
- 9) Solve and comment on the type of section if a singly reinforced beam of 260mm x 340mm is reinforced with 4 bars of 16mm diameter. Find the depth of neutral axis. Use M20, Fe415 and IS 456:2000 code. K5 (15)
- 10) Design a singly reinforced beam of 300mm x 500mm is reinforced with 4 bars of 20mm diameter. Comment on the type of beam and find the moment of resistance. The grade of concrete and steel is M20 and Fe415 respectively. K6 (18)