R16

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Regular Examinations November/December 2018
DESIGN & DRAWING OF REINFORCED CONCRETE STRUCTURES
(Civil Engineering)

Time: 3 Hours   Maximum Marks: 60

PART-A

Answer any **ONE** question.   1X 24 = 24 Marks

1) Design a simply Supported roof slab for a room of size 7.5 m X 3.5 m. The slab carries a live load of 7 KN/m^2. Use M_{30} and Fe_{500} steel. Draw all the structural detailing.

(OR)

2) Design an isolated footing for a column of size 300 mm X 500 mm subjected to an axial load of 1600 KN. The safe bearing capacity of the soil is 170 KN/m^2. Use M_{20} and Fe_{415} steel. Draw all the structural detailing.

PART-B

Answer any **THREE** questions.   3X12 = 36 Marks

3) A rectangular beam of width 300 mm is subjected to a uniformly distributed load of 14 KN/m over an effective span of 7.5m.Determine the depth required for the beam and the area of tensile reinforcement. Use M_{25} concrete and Fe_{415} steel.

4) A rectangular beam of size 200 mm wide and 500 mm effective depth has reinforced with 4 bars of 25 mm dia. The beam has to resist 400 KN shear force at support section. Assume M_{25} and Fe_{415} steel, Design the shear reinforcement for the section.

5) Design a two way slab for a room of size 8 m X 4.5 m.If the live load is 8KN/m^2, use M_{30} and Fe_{500} steel. Edges of the simply supported corners not held down.

6) Design the reinforcement in a column of size 300 mm X 600 mm, subjected to a factored axial load of 2200 KN. The column has unsupported length of 3.5 m and is braced against side way in both the directions.Use M_{30} concrete and Fe_{500} steel.

7) Design a rectangular footing of uniform thickness for an axially loaded column of size 250 mm X 500 mm.Load on column is 1200 KN; SBC of soil is 200 KN/m^2, use M_{25} and Fe_{415}.

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