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C09-C-607

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BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2018

DCE—SIXTH SEMESTER EXAMINATION

STRUCTURAL ENGINEERING DRAWING

Time : 3 hours]

[Total Marks : 60

PART—A

5×4=20

- Instructions :** (1) Answer **all** questions. Each question carries **four** marks.
(2) Answer the questions for not to scale.
(3) Assume suitable data, if necessary.

1. State the four important guide lines for fixing the dimentions of various component parts of stairs.
2. State four important points to be considered in positioning and orientation of columns.
3. Draw the cross-section of an Isolated square column footing with the followings specifications :

Column :

Size of column : 400 × 400 mm

Reinforcement : 4 nos - 20mm dia,
lateral ties - 8mm dia at 230mm centre to centre.

Footing : Projection of bar in to footing by 500mm.

Size of fooling : 2000 × 2000mm

Reinforcement : 12mm dia at 150mm centre to centre both ways.

Over all depth : 600mm (uniform)

Thickness of C.C bed : 200mm (1:4:8)

Covers : 50mm

4. Prepare the bar bending schedule of simply supported one way slab with the following specifications:

Specifications:

Room internal dimensions : 2500 × 6000mm

Wall thickness : 300mm

Slab thickness : 120mm

Reinforcement:

- a) Main bars : 10mm dia at 150mm centre to centre alternate bars cranked by 45° at 400mm from either side of support.
- b) Distribution bars : 8mm dia at 200mm centre to centre.
- c) Covers : 20mm
5. Draw the reinforcement details at 'Beam Column' joint for earthquake resistant structure.

PART-B

20×2=40

Instructions : (1) Answer *all* questions. Each questions carries **twenty** marks.

(2) Draw all questions to suitable scale.

(3) Assume suitable data where ever necessary.

6. Draw the following views of a simple supported singly reinforce beam with given specifications:

a) Longitudinal section

b) Cross - Section at the middle.

c) Cross - Section at the end.

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[Contd...]

Specifications*

Size of beam : 230 × 450mm

Clear span : 3500mm

Width of support : 300mm

Bearing : 300mm

Reinforcement:

a) Bottom bars : 4 nos - 16mm dia, out of which 2 nos cranked at 1/7 of span at 45°

b) Top bars : 2 nos - 10mm dia.

c) Stirrups : 8mm dia at 200mm centre to centre at middle span and 150mm centre to centre at end span. (800mm on either side)

d) Covers : 25mm

7. Draw the reinforcement details of a simply supported two-way slab: (corner not held down)

a) Top plan

b) Bottom plan

c) Cross-Section along short span at mid span.

d) Cross-Section along long span at mid span.

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Specifications:

Room internal dimensions : 3500 × 5500mm

Width of wall : 300mm

Thickness of slab : 150mm

Bearing : 300mm

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Reinforcement Details:

- a) Short span : 12mm dia at 120mm centre to centre, alternate bars cranked at 1/7 of span.
- b) Long span : 10mm dia at 200mm centre to centre, alternate bars cranked at 1/7 of span.
- c) Anchor bars : 8mm dia at 150mm centre to centre in cranked portion.

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