

6429

BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL-2019

DCE- FOURTH SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING - II

Time: 3 Hours

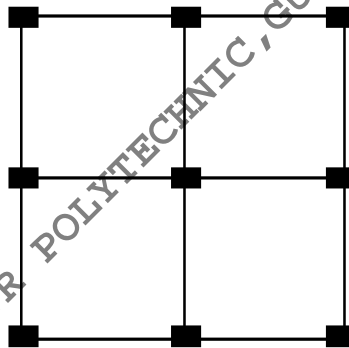
Max. Marks: 60

PART-A

4x5=20M

- Instructions:** 1) Answer **all** questions.
 2) Each question carries **four** marks.
 3) Part-A may be drawn not to scale.
 4) Assume suitable data, if necessary.

- 1) Name the columns in the given diagram with 'column reference scheme'.



- 2) Write any two points where columns and beams are placed in a framed structure with sketch.
 3) Draw the cross section of the square column footing with the following specifications:

Size of column	:	230x230mm
Size of footing	:	1200x1200mm
Thickness of C.C Bed	:	200mm
Thickness of footing at free end	:	150mm
Tapered portion height	:	50mm
All covers	:	50mm

Reinforcement: (i) in footings, #12mm @ 150 mm c/c in bothways

(ii) in columns, 4Nos of 20mm dia with lateral ties of 8mm dia at 150mm c/c

- 4) Prepare a bar bending schedule for the one-way slab, with the following data:

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Size of room : 4400mm x 2000mm (inside)
Wall thickness : 250mm
Slab thickness : 120mm
Main reinforcement : 10mm dia. bars at 150mm c/c. All the bars are cranked on both sides and cranks placed alternately
Distribution reinforcement : 8mm dia. bars at 200mm c/c. All covers are of 25mm

- 5) Prepare a bar bending schedule for the simply supported RC beam, with the following data:

Clear span - 3200mm
Size of the beam - 230mmx350mm
Wall thickness - 230mm
Main reinforcement - 4 nos. of 12mm dia. (all straight bars)
Hanger bars - 2 nos. of 10mm dia.
Stirrups - 6mm dia. 2 - legged bars at 200 mm c/c
All covers are of 25mm

PART-B

20x2=40M

- Instructions:** 1) Answer **all** questions.
2) Each question carries **twenty** marks.
3) Draw **all** questions to scale.
4) Assume suitable data, if necessary.

- 6) Draw the reinforcement details of a lintel- cum- sunshade with the following specification. (10+5+5)

(i) Lintel

Clear span of lintel=1500mm

Size of Lintel=350x200mm

Bearing in either side=230mm

(ii) Reinforcement

Main reinforcement: 12mm dia 4 Nos in which 2 nos straight and 2 nos are cranked at a distance of 280mm from the face of the support at 45°

Hanger bars : 2 nos 10mm dia

Stirrups: 6mm dia two legged stirrups at 150mm centre to centre

(iii) Sunshade

Projection of the sunshade - 600mm

Thickness at the fixed end - 100mm

Thickness at the free end - 60mm

Reinforcement

Main bars - # 10, at 150mm c/c

Distribution bars - # 8, at 150mm c/c

(ii) Covers

Bottom clear cover in lintel - 25mm

Top clear cover in sunshade - 20mm

All the remaining covers - 25mm

Draw the following views to a scale of 1 : 20

i) Longitudinal section of lintel

ii) Cross - section at the mid span of lintel with sunshade

iii) Cross - section of lintel with sunshade near the support

7) Draw the longitudinal section and plan of staircase spanning longitudinally with the following specifications :

Size of the staircase room : 4500 mm x 2000 mm (inside)

Level difference between floors : 3000 mm

Width of the stair : 1000 mm

Landing length : 1000 mm

Tread : 270 mm and Rise : 150 mm

Thickness of waist slab : 150 mm

Bearing on wall : 230 mm

Size of projection into basement : 300 mm x 200 mm

Reinforcement details:

(i) Main reinforcement : 12 mm dia. at 125 mm c/c

(ii) Distribution steel : 10 mm dia. at 150 mm c/c

(iii) Additional bars : 12 mm bars at 125 mm c/c
(at junction of landing slab with waist slab)

Bottom and end clear

Covers to steel : 25 mm

Draw to a scale of 1 : 25 :

(a) Longitudinal section for one flight. 15M

(b) Plan of the staircase room 5M

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