

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018**

STRUCTURAL AND IRRIGATION ENGINEERING DRAWING

[Time : 3 hours]

(Maximum marks : 100)

- [Note :—1. Use of steel tables are permitted.
2. Missing data if any may be suitably assumed.
3. A2 size drawing sheet to be supplied.
4. Drawings shall be neat and fully dimensioned.
5. Answer one full question from each unit.]

UNIT — I

Marks

- I An R.C.C beam is reinforced with 7 Nos. of 16mm diameter bars in which 3 Nos. are in compression zone and 4 Nos. are in tension zone it is provided with 10mm diameter stirrups at 200mm c/c. The size of the beam is 300 × 500 mm and clear span is 5000 mm. The thickness of wall is 300mm.
- Draw : (a) Longitudinal sectional elevation. 15
(b) Cross section of the beam at centre and support. 10

OR

- II An R.C.C. cantilever beam resting in R.C.C. column of size 0.30 × 0.45 m of reinforcement of 6 nos. of 16 mm diameter bars. The bearing in column is 0.45m. The size of the beam is 0.30 × 0.60 m at fixed end and 0.30 × 0.30m at free end. Main reinforcement 16mm diameter 4 nos. and compression reinforcement 12mm diameter 2 nos. Two legged stirrups 8mm diameter @ 200mm c/c are provided.
- Draw : (a) Longitudinal section of the beam. 15
(b) Cross section at free end and fixed end. 10

UNIT — II

- III (a) An R.C.C. elevated water tank has following specifications :
- Height of tank above ground level to the bottom of water 9.8 m
Inner dimensions of the tank: 4500 × 4500 × 1500 mm
Thickness of side walls and bottom slab 200 mm
Size of column: 400 × 400 mm
Size of beams : 400 × 300mm
Spacing of beams : 3000 mm
Depth of R.C.C. footing below ground level: 1000 mm
Size of footing: 1500 × 1500 mm
Thickness of footing at column face : 450 mm
Thickness of footing at end : 150 mm
- Draw : (a) The sectional elevation showing all the details 15
(b) Plan 10

OR