

7398**Code : 20AR51I**Register
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V Semester Diploma Examination, February/March-2023
**ARCHITECTURAL DESIGN AND WORKING
DRAWING**

Time : 3 Hours]**[Max. Marks : 100**

- Instructions :** (i) Answer any **one** full question from each Section.
(ii) One full question carries **20** marks.

SECTION – I

1. (a) Develop a sketch of falling water and explain its architectural characteristics. 5 + 5 = 10
(b) Analyse Le-Corbusier's five principles of Architecture taking Villa Savoye as an example. 5 + 5 = 10
2. (a) Identify the architectural features of Gandhi Smarak Sangrahalaya with the help of sketches. 5 + 5 = 10
(b) Categorize Laurie Baker's Cost effective construction techniques. 2 × 5 = 10

SECTION – II

3. (a) Identify various building byelaws with supporting sketches. 2 × 5 = 10
(b) Classify the types of recreation centre. 5 + 5 = 10
4. (a) Sketch and explain the importance of light plane. 5 + 5 = 10
(b) Summarize the aspects of zoning. 1 × 10 = 10

SECTION – III

5. (a) Identify the principles of landscape design. 1 × 10 = 10
(b) Analyse the appropriate reason for site study. 1 × 10 = 10

6. (a) Classify various elements used in landscape design. $2 \times 5 = 10$
 (b) Develop a landscaping design for an open courtyard of size 12 m \times 8 m. 10

SECTION – IV

7. Draw sectional plan and elevation of a RCC column of size 300 \times 300 mm with following reinforcement details : $7 + 7 + 6 = 20$

- Footing size – 1200 mm \times 1200 mm
- Footing reinforcement – 10 mm dia at 150 mm c/c on both sides.
- Column reinforcement – 4 no's of 16 mm dia
- Stirrups – 2 legged 6 mm dia at 200 mm c/c
- Clear cover – for column – 40 mm
for footing – 50 mm

Note :- Missing data may suitably be assumed.

Prepare bar bending schedule and calculate quantity of steel required.

8. Draw sectional plan and elevation of a RCC singly reinforced T-Beam of a hall of size 6 m \times 9 m : $7 + 7 + 6 = 20$

Following are the details of reinforcement :

- Span of the beam is 6 m
- Overall depth of beam 600 mm
- Rib width of beam 300 mm
- End support 230 mm thick BBM wall.
- Longitudinal Reinforcement of beam are 3 No's of 20 mm in bottom row & 3 No's of 20 mm in top row.
- Out of 6 longitudinal bars, 3 bars are bent up at 45° at a distance of 1200 mm from the face of the support.
- 2 Hanger bars of 12 mm dia
- 8 mm dia 2 legged stirrups of 100 mm c/c.

Note : - Assume missing data

Prepare bar bending schedule and calculate quantity of steel required.

SECTION - V

9. Prepare detailed estimate of quantities and abstract estimate along with brief specification for the following items of work for a residential building whose plan & sectional details are given in Figure-1. 10 + 10 = 20

- (a) Size store masonry in cement mortar 1 : 6 for foundation.
- (b) Bed concrete using 1 : 4 : 8 CC for foundation.

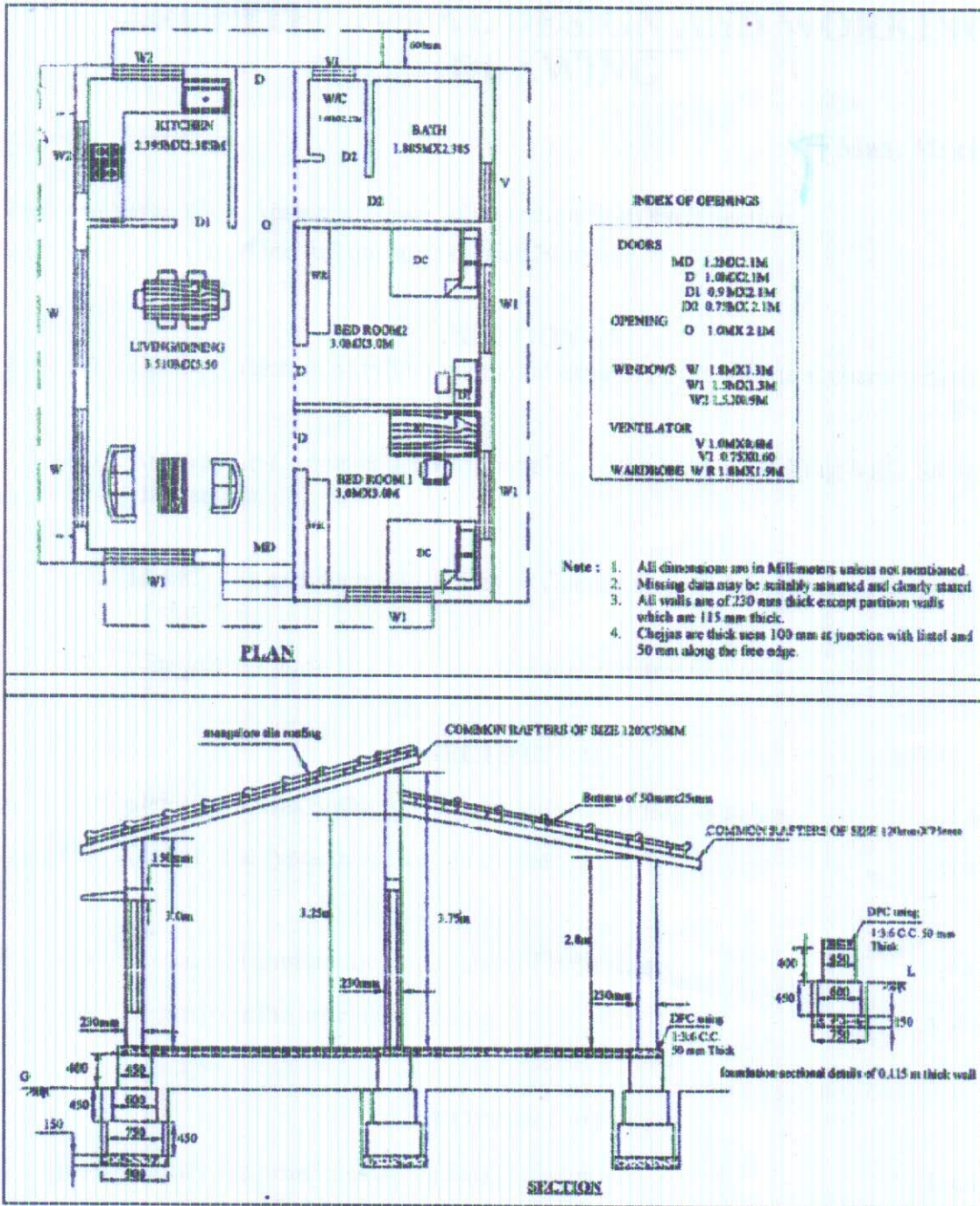


Figure - 1

[Turn over

0. Analyse from first principle the rate for following items of work : $10 + 10 = 20$

- (a) Earthwork excavation for foundation.
- (b) 12 mm thick cement plastering for walls in CM 1 : 6.