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Third Semester B.E Degree Examination, July/August 2021 (CIVIL ENGINEERING)

COMPUTER AIDED BUILDING PLANNING AND DRAWING

Time: 3 Hours
Max. Marks: 100
NOTE:

1. Answer any **TWO** full questions from **PART A** and any **ONE** full question from **PART B**.
2. Assume any missing data suitably.

PART A

- Q1. Draw the cross section of the peripheral feed circular sedimentation tank mechanical Sludge Removal equipment for the given data.
 Diameter of the tank = 17.5m Depth of the tank = 3.0m
 RCC wall & slab thickness = 200mm
 Diameter of influent pipe, effluent pipe and sludge pipe = 200mm. Bed slope = 8%
 Thickness of RCC Baffle slab = 40mm **(25 Marks)**
- Q2. Draw a layout plan of rainwater harvesting and recharging system for a (9 x 12)m area residential building leaving setback of 1.20m on all four sides as per bye laws. Show a cross section details for recharging pit. **(25 Marks)**
- Q3. A One way slab for a hall of internal dimension 7.5 m × 11.8m has the following details:
 a. Thickness of slab = 150 mm
 b. Wall thickness = 230 mm
 c. Main steel along short span = 10 mm # @100mm c/c
 d. Distribution steel = 8 mm # @150mm c/c
 Draw to suitable scale the following:
 1. Plan showing the reinforcement details
 2. Cross section of slab @ mid span along short span
 3. Cross section of slab @ mid span along long span **(25 Marks)**
- Q4. Draw plan and sectional elevation of RCC dog legged staircase for an office building which measures 3m x 6.5m. The vertical distance between the floor is 3.6m (including landing). Thickness of the floor slab is 150mm. Provide steps with tread of 300mm and rise of 150mm. Thickness of waist slab and landing slab is 150mm. Width of stair is 1.5m. Reinforcement details: main steel: 12φ @135 c/c spacing and distribution: 8φ @ 250 c/c spacing. **(25 Marks)**

PART B

- Q5. The line diagram of a residential building is given in **FigQ5**. Draw to scale the following:
 a. Electrical Services
 b. Plumbing and Sanitary Services **(50 Marks)**
- Q6. The line diagram of a Office building is given in FigQ6. Draw to scale the following:
 a. Plan at sill.
 b. Front Elevation.
 c. Section along AA.
 d. Schedule of openings. **(50 Marks)**

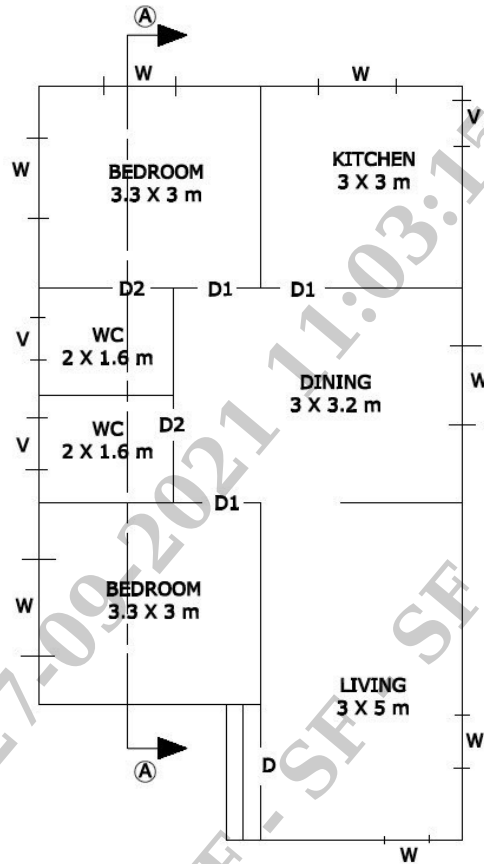


Fig.Q5

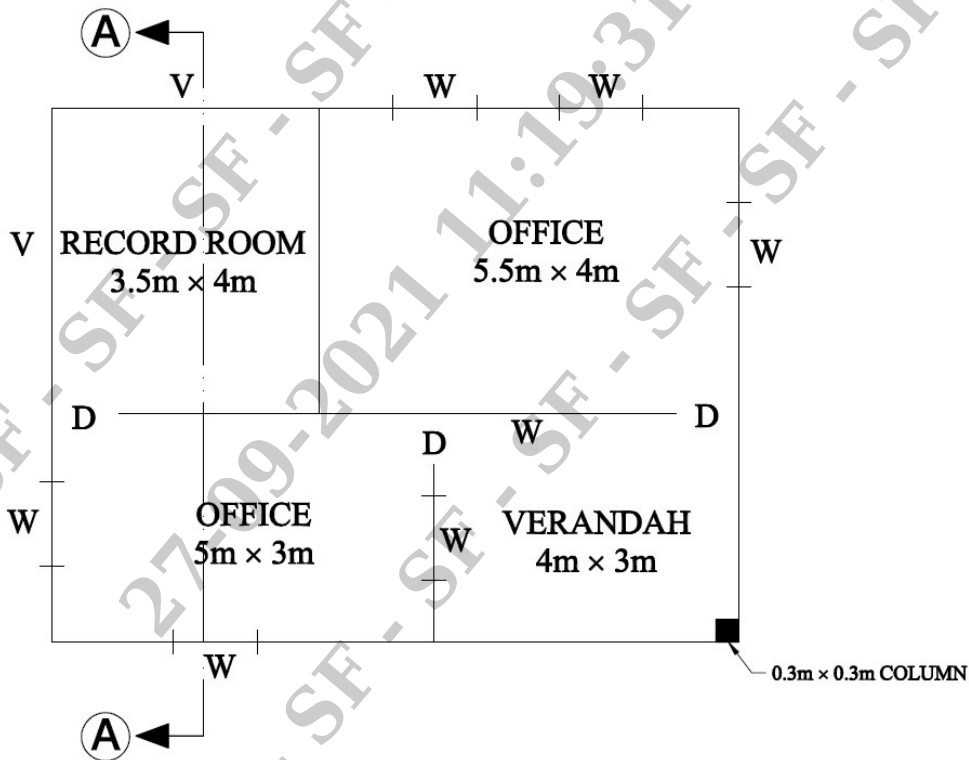


Fig. Q6