

Third Semester B.E Degree Examination, December 2019
(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 Plan, sectional Elevation and cross section of a slab type combined footing with given details. Size of column=(450x450)mm, Size of Footing=(2.2x4.2)m, Depth of footing=600mm, Centre to centre distance between the column=2m, Thickness of PCC bed in 1:3:6=100mm, Column reinforcement details: Longitudinal steel of #8-20 ϕ with lateral ties of 2L 8 ϕ @200c/c, Footing Reinforcement details: Bottom reinforcement of 12 ϕ @ 100c/c both ways and Top reinforcement of 12 ϕ @ 150c/c both ways. (25 Marks)
- Q2 Draw two consecutive courses for corner joints of the following walls in English bond.
a) One brick thick wall: 200x200
b) One and half brick thick wall : 300x300 (25 Marks)
- Q3 Draw plan and sectional elevation of an open newel stair with a rectangular well for an office building with the following data: Inside dimensions of staircase = 4.5m x 5.4m. Height between the floors is 3.6m. Thickness of the floor slab and landing slab is 150mm. Width of landing=1.5m. Width of stair = 1.5m. Tread=300mm, riser=150mm. Waist slab thickness = 150mm. Reinforcement details: Main steel:12 ϕ @150 c/c spacing and Distribution: 8 ϕ @ 250 c/c spacing. (25 Marks)
- Q4 Draw the longitudinal section and cross section of a rectangular RCC beam simply supported with the following data: Clear span = 4.8m Bearing at the supports = 300mm Width of beam = 300mm Overall depth of beam = 500mm Main reinforcement consists of #5 - 20 ϕ bars in two layers. Provide #2 - 12 ϕ as anchor bars. Stirrups: 2L 8 ϕ @ 180 c/c near the supports up to 1.20m and @ 220 c/c in the remaining portion. (25 Marks)

PART B

- Q5 Line diagram of School building is given in figure Q5. Draw to scale the following:
a) Plan at sill
b) Front elevation
c) Section along AA
d) Schedule of Openings (50 Marks)
- Q6 Line diagram of Single Storey residential building is given in figure Q6. Draw to scale the following:
a) Electrical Services
b) Plumbing and Sanitary Services (50 Marks)

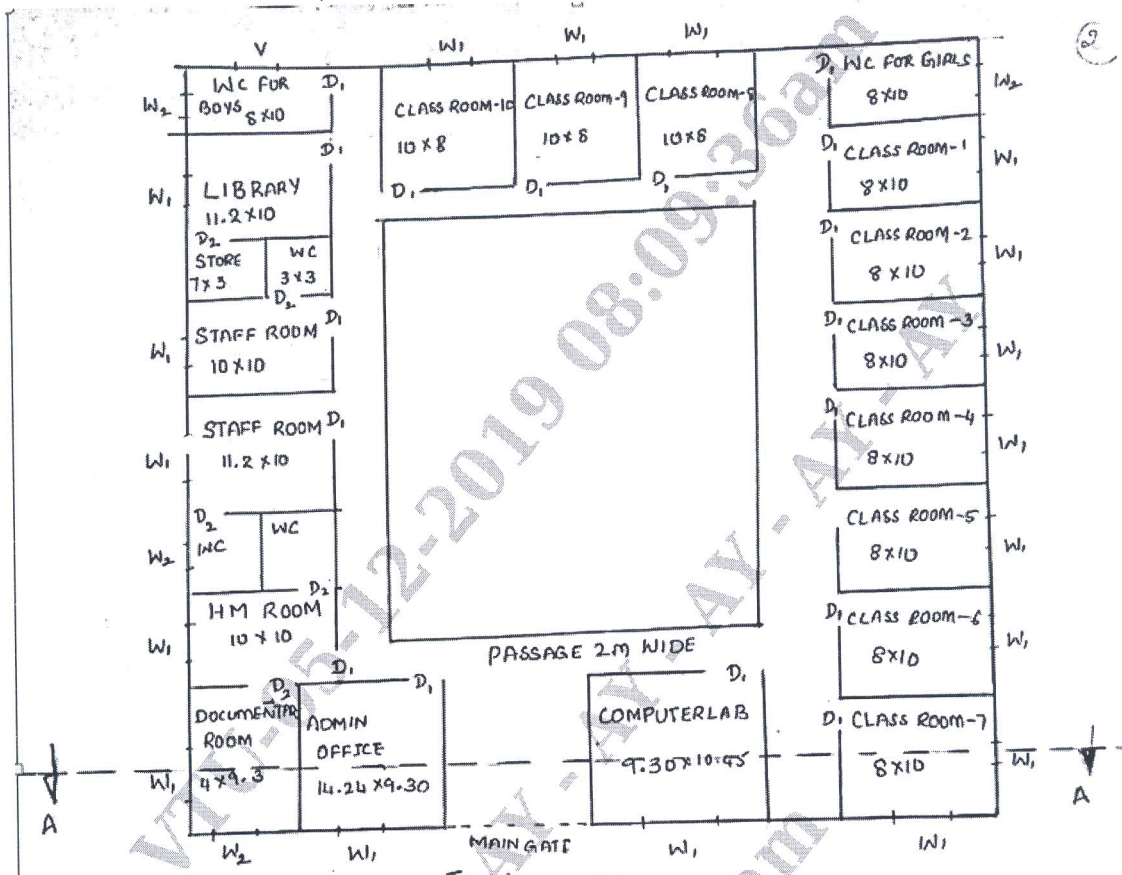


Figure Q5.

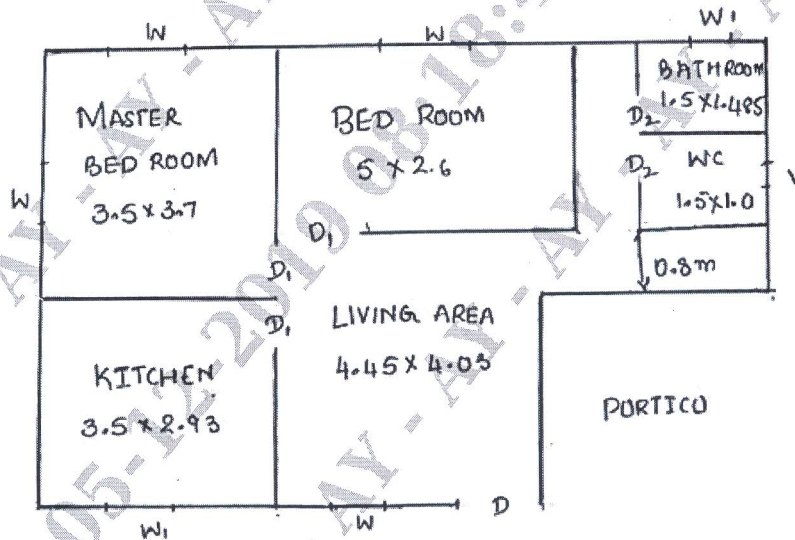


Figure Q6.