

CBCS SCHEME

USN

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15ENG4.6

Fourth Semester B. Arch Degree Examination, Dec.2018/Jan.2019 Specification, Quantity and Costing of Buildings

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. What is estimation? Explain the need for estimation and costing. (10 Marks)
b. Write a note on detailed estimation. (10 Marks)

OR

- 2 Write the detailed specification for the following items. (20 Marks)
a. First class brickwork is CM 1:6 is super structure.
b. Erath work in Excavation for foundation in hard soil
c. Providing and laying damp – proof course is PCC 1:3:6.
d. RCC work is proportion 1:2:4.

Module-2

- 3 a. What is a contract? What are the different types of contract? (10 Marks)
b. Write a note on tender document and its content. (06 Marks)
c. Define : i) Administrative and technical sanction
ii) Security retention and EMD. (04 Marks)

OR

- 4 a. Write a note on material safety and workers safety considered during any construction work? Also explains their consideration in specification. (10 Marks)
b. Explain any four standard tests on materials conducted to check the quality and also their inclusion in the specification. (10 Marks)

Module-3

- 5 a. Write note on : (08 Marks)
i) Schedule of rates
ii) Unit rate and lumpsum rate.
b. Fig Q 5(b). Shows plan and section of column footing and column. Calculate the quantity of steel required for 6 such columns and footings. Given weight of bar/meter is 8mm – 0.39 kg/m, 10mm – 0.61kg/m, 20mm – 2.50 kg/m. (12 Marks)

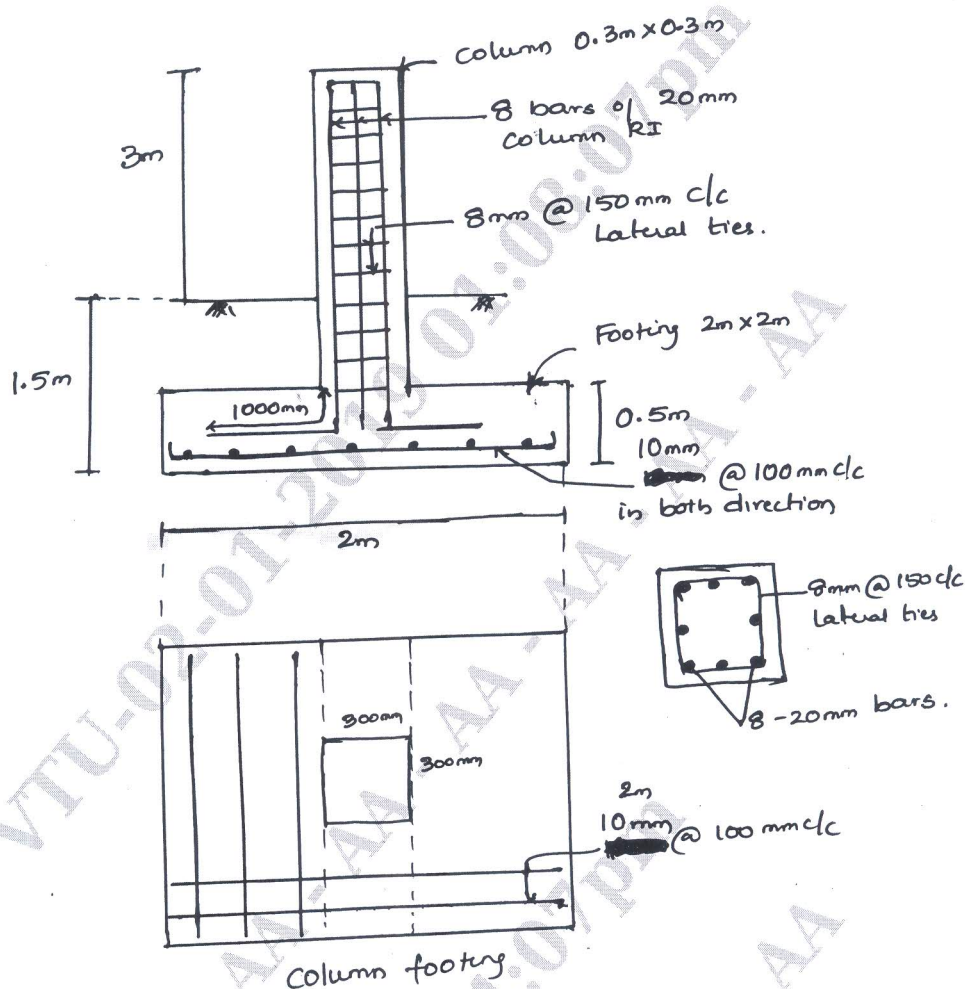


Fig Q5(b)

OR

- 6 Carry out rate analysis for the following items from first principles.
- Cement concrete for foundation bed with 1:4:8 mix.
 - 1st class brickwork in super structure with 20cm x 10cm x 10cm brick with 1:6 cement mortars.
 - 12mm thick cement plastering in CM 1:6
 - RCC work in beams with 1:2:4 [Excluding steel].

(20 Marks)

Module-4

- 7 Prepare a detailed estimate for a residential building for the following items of work. Refer Fig Q7 from plan and C/S. Use CENTRE LINE METHOD.
- Earthwork in excavation @ the rate of Rs 150/m³
 - SSM in CM in foundation @ the rate Rs 2250/m³
 - Cement concrete for slab @ the rate Rs 6000/m³

(20 Marks)

OR

- 8 Refer Fig Q7 and prepare a detailed estimate for the following items of work.
- 1st class brickwork in super structure for main wall
 - 12mm thick cement plastering for interior walls
 - Sal wood work for frames for doors and windows.
 - Providing and laying flooring using modula tiles of size 0.6m x 1.2m in CM 1: 6 on bed of PCC 1 : 4 : 8.

(20 Marks)

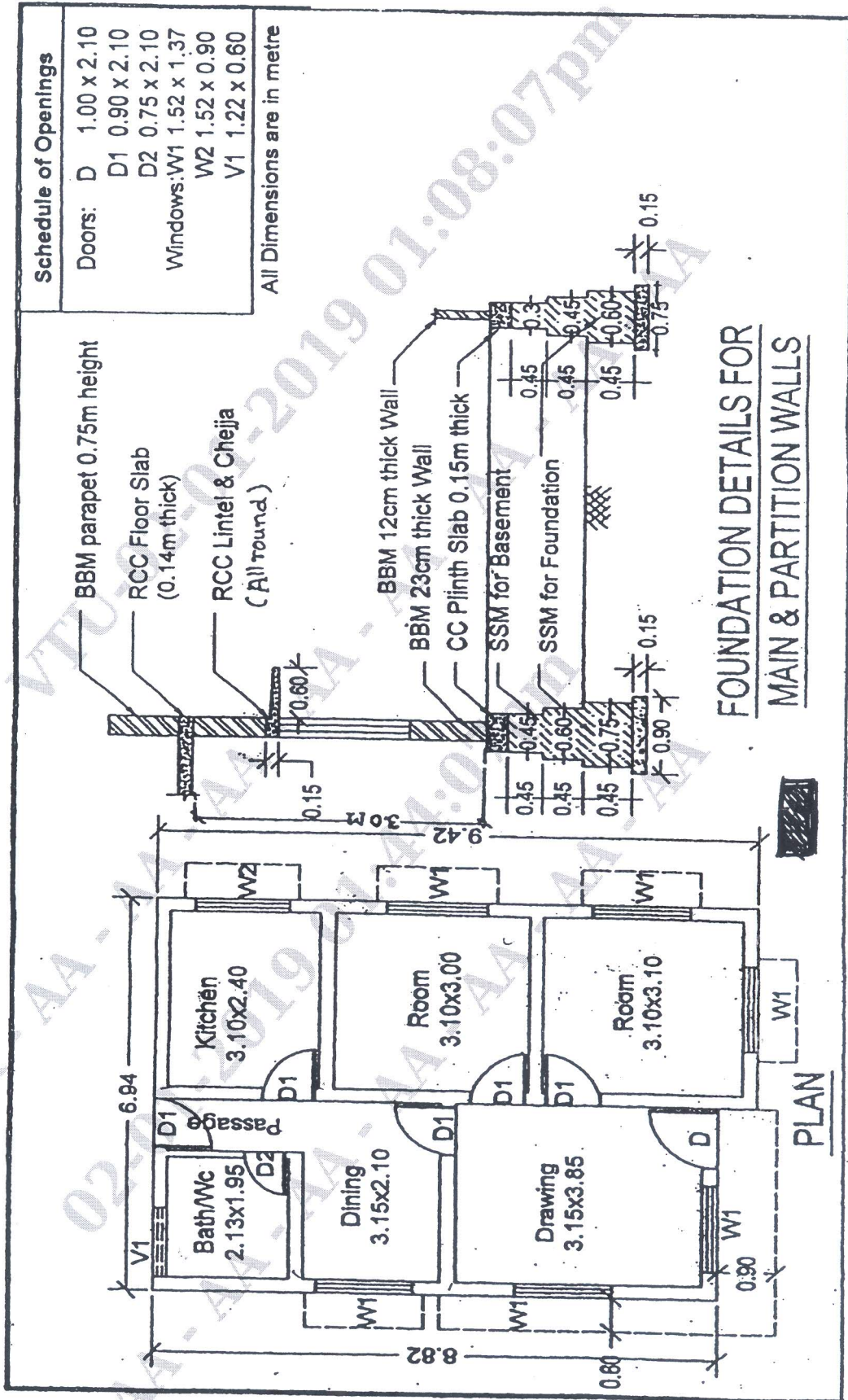


Fig Q7

Module-5

- 9 Estimate the quantity of earthwork for portion of a road with width equal to 8m. Side slope 2:1 in filling and 1.5:1 in cutting. Use 'MEAN AREA METHOD' to calculate the volume of earth work. (20 Marks)

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|-----------------|-------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Chainage (m) | 600 | 630 | 660 | 690 | 720 | 750 | 780 | 810 | 840 | 870 | 900 |
| RL of Ground | 71.20 | 71.25 | 70.90 | 71.25 | 70.80 | 70.45 | 70.20 | 70.35 | 69.10 | 69.45 | 69.70 |
| Formation level | 70 | UPWARD GRADIENT OF / in 200 | | | | | | | | | |

OR

- 10 The details of septic tank are given in Fig Q10. Find the quantities for the following items of work.
- Earthwork in excavation for foundation
 - First class brickwork in 1:4 cement mortar
 - 12mm thick cement plaster for walls and flooring
 - RCC 1:2:4 for cover slab

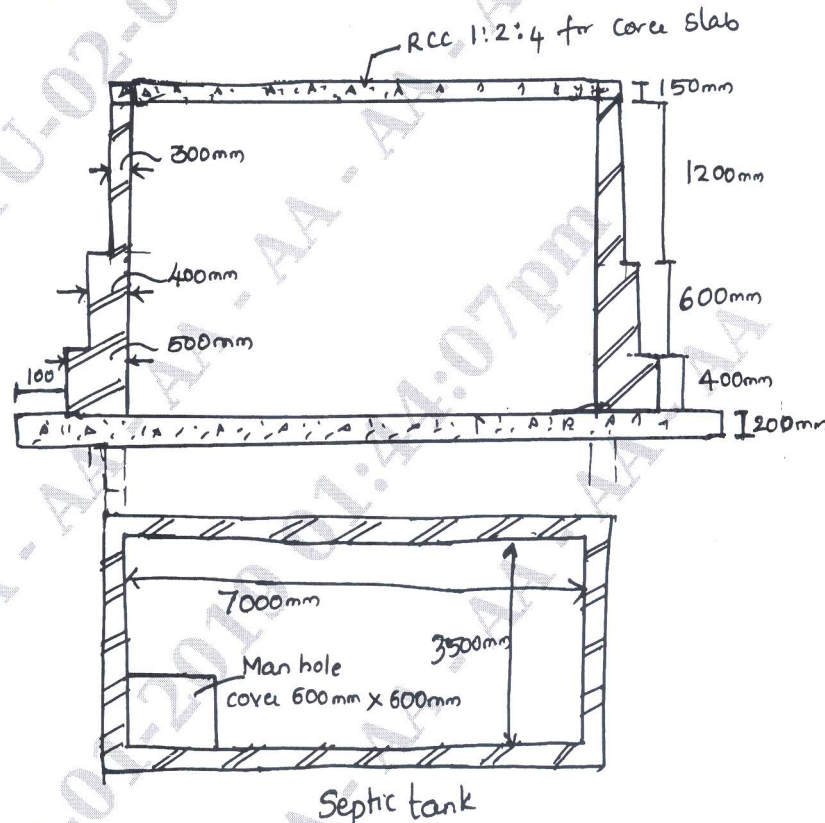


Fig Q10

(20 Marks)
