

CBCS SCHEME



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15ARC/ENG46

Fourth Semester B.Arch. Degree Examination, Feb./Mar. 2022 Specification, Quantity and Costing of Buildings

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 Write short notes on:

- Detailed estimate. (05 Marks)
- Contingencies. (05 Marks)
- Work charged establishment. (05 Marks)
- Cubic Rate estimate. (05 Marks)

OR

- 2 a. Explain in detail the types of specification. (07 Marks)
b. Write detail specification for PCC Bed of 1 : 4 : 8 for foundation. (07 Marks)
c. What is estimation? What is the purpose of estimation? (06 Marks)

Module-2

3 Explain the following:

- List any four material testing equipments to be kept in the site lab. (07 Marks)
- List any two test each to be conducted on the following materials – cement, brick, concrete. (07 Marks)
- List out safety measures to be followed during multistorey building construction. (06 Marks)

OR

- 4 a. Explain in detail the different methods used to calculate the quantities of building items. (10 Marks)
b. Explain in detail administrative sanction and technical sanction. (10 Marks)

Module-3

5 Carryout the rate analysis for the following items:

Cement – 320 Rs./Bag, Sand – 120/m³, Steel – 49 Rs./kg

Coarse aggregate – 750 Rs./m³, Brick – 15 Rs./No.

- Cement concrete of 1 : 5 : 10 for bed in foundation. (10 Marks)
- 12 mm thick cement plastering in 1 : 3 in ceiling. (10 Marks)

OR

6 Explain the following:

- Schedule of Rates. (05 Marks)
- Public work department. (05 Marks)
- Escalation clause. (05 Marks)
- Rate analysis. (05 Marks)

Module-4

- 7 Refer Fig. Q7, estimate the cost of 2 roomed building by calculating following items using long wall short wall method. (04 Marks)
- a. Earthwork in Excavation at the rate of 150 Rs./m³. (04 Marks)
 - b. PCC bed (1 : 4 : 8) at the rate of 4500/m³. (04 Marks)
 - c. SSM in CM(1 : 5) for foundation and plinth at the rate of 2200 Rs./m³. (04 Marks)
 - d. DPC (1 : 3 : 6) at the rate of 600 Rs./m². (04 Marks)
 - e. Brick work in superstructure – 3700 Rs./m³. (04 Marks)

All walls are of same section
 Lintels over doors, windows and shelves are 15 cm thick RB
 Doors D – 1.2 m × 2.1 m
 Windows W – 1.0 m × 1.5 m
 Shelves S – 1.0 m × 1.5 m

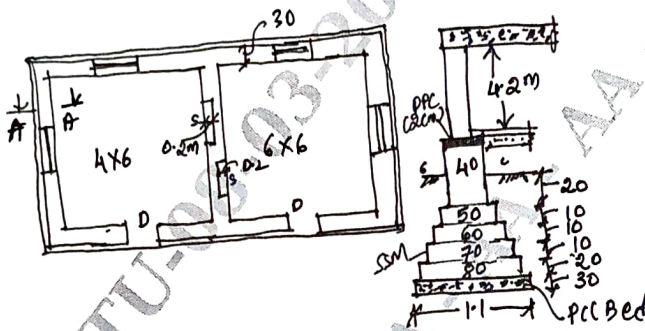


Fig. Q7

OR

- 8 Estimate the cost of a RCC column by calculating following items. Refer Fig. Q 8. (20 Marks)

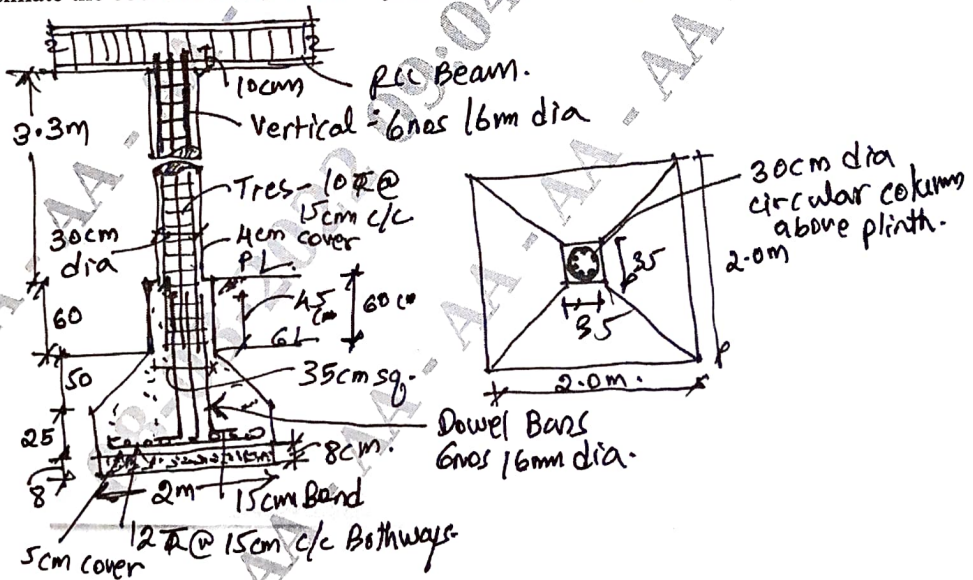


Fig. Q8

Module-5

- 9 Calculate the quantity of earthwork for 200 m length for a portion of a road in an uniform ground the heights of banks at the two ends being 1.0 m and 1.6 m. The formation width is 10 m and side slopes 2 : 1 (Horizontal : Vertical). Assume that there is no transverse slope. (Calculate using midsection, mean section and Prismoidal method) (20 Marks)

OR

- 10 Prepare a detailed estimate of a septic tank from the given drawings, Fig. Q10 by calculating following items.

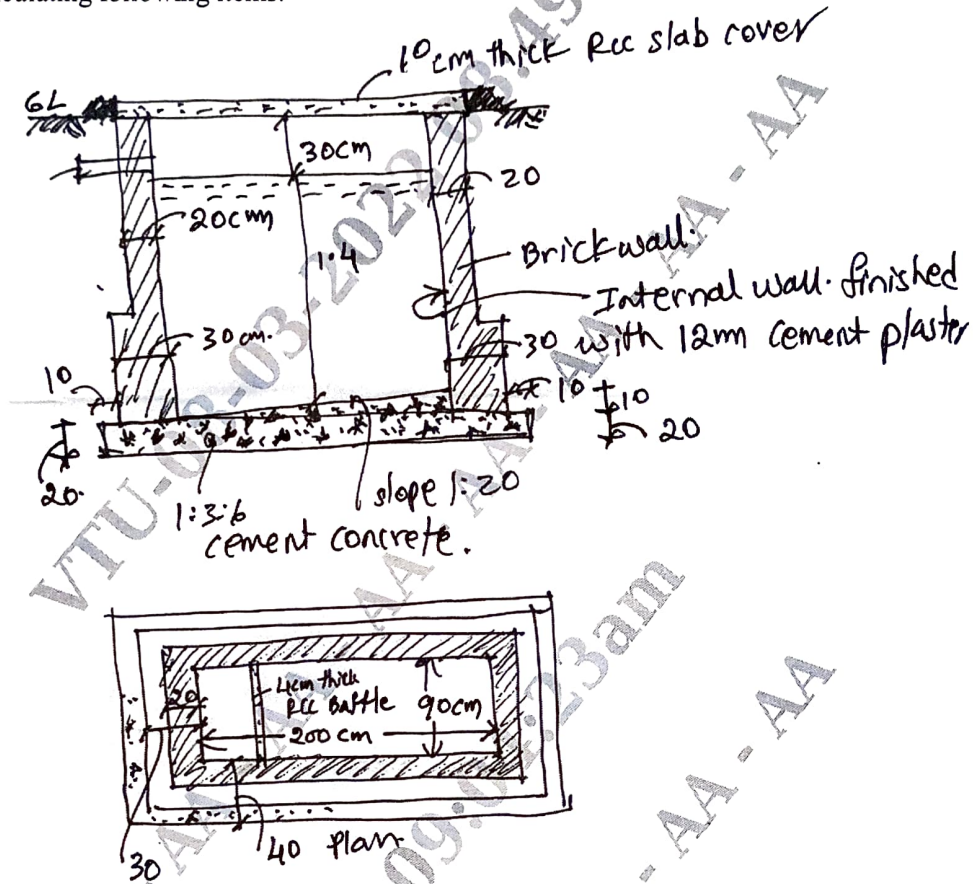


Fig. Q10

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|---|------------|
| a. Earthwork in Excavation. | (04 Marks) |
| b. Cement concrete 1 : 36 in foundation. | (04 Marks) |
| c. Brick work in 1 : 4 cement mortar. | (04 Marks) |
| d. Internal wall plastering of 12 mm thick cement mortar. | (04 Marks) |
| e. 10 cm thick RCC slab cover for septic tank. | (04 Marks) |
