

# CBCS SCHEME

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18ENG74

## Seventh Semester B.Arch. Degree Examination, Jan./Feb. 2023 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 a. What is Estimation? Explain the need for estimation and costing. (10 Marks)
- b. Write a note on detailed estimate. (10 Marks)

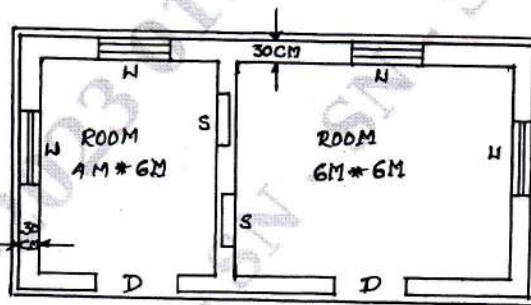
OR

- 2 Prepare an approximate estimate of building project with total plinth area of all building is 800 sqm and from following data:
  - i) Plinth area rate R.S. 4500 per sqm.
  - ii) Cost of water supply @ 7½% of cost of building.
  - iii) Cost of sanitary and electrical installations each @ 7½% of cost of building.
  - iv) Cost of architectural features @ 1% of building cost.
  - v) Cost of roads and Lawns @ 5% of building cost.
  - vi) Cost of P.S. and contingencies @ 4% of building cost.
 Determine the total cost of building project. (20 Marks)

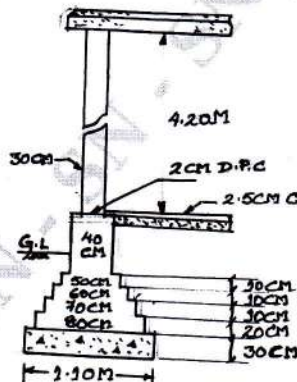
### Module-2

- 3 Estimate the quantities of the following item of a two roomed building from Fig.Q.3.
  - i) Earth work in excavation in foundation.
  - ii) Cement concrete in foundation.
  - iii) Size stone masonry in CM1:6 for foundation and plinth.
  - iv) 2.5CM D.P.C
  - v) First class brick work in CM 1:4 for super structure.
 Use Long wall-short wall method. (20 Marks)

Fig.Q.3



PLAN



Note :- (i) Lintels over door, windows and shelves are 15CM thick.  
 (ii) Doors D - 2.2 \* 2.2M  
 Windows W - 1.00 \* 1.5M  
 Shelves S - 1.00 \* 1.5M

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 4 a. What is Tender? What are the contents of a tender? (08 Marks)  
 b. Write short notes on the following:  
 i) Administrative sanction and technical sanction.  
 ii) Security retention and earnest money deposit.  
 iii) Measurement book and its importance.  
 iv) Valuation and different methods of valuation. (12 Marks)

**Module-3**

- 5 Write a detailed specification for the following:  
 a. First class brick work in CM(1:6)  
 b. Cement plastering in CM (1:6)  
 c. 25CM thick cement concrete flooring (1:2:4)  
 d. Earth work in excavation for foundation. (20 Marks)

OR

- 6 Prepare a detailed estimate of a R.C.C. roof slab of 3M clear span 12CM thickness and 6m clear long. Slab bearing on masonry is 150mm allround. Reinforcement consists of 12mm diameter main bars. 12cm C/C alternate bent up and distribution 6mm diameter at 18cm C/C. R.C.C work in centering and shuttering but excluding reinforcement is RS.7,500/m<sup>3</sup>. Providing and tying reinforcement is RS.90 per kg. Do sketching and prepare schedule of bars.  
 Assume  $\frac{d^2}{162}$  to derive weight of all bars in kg per meter, where d in the diameter of the bar in mm or 7850kg per cumt as density. (20 Marks)

**Module-4**

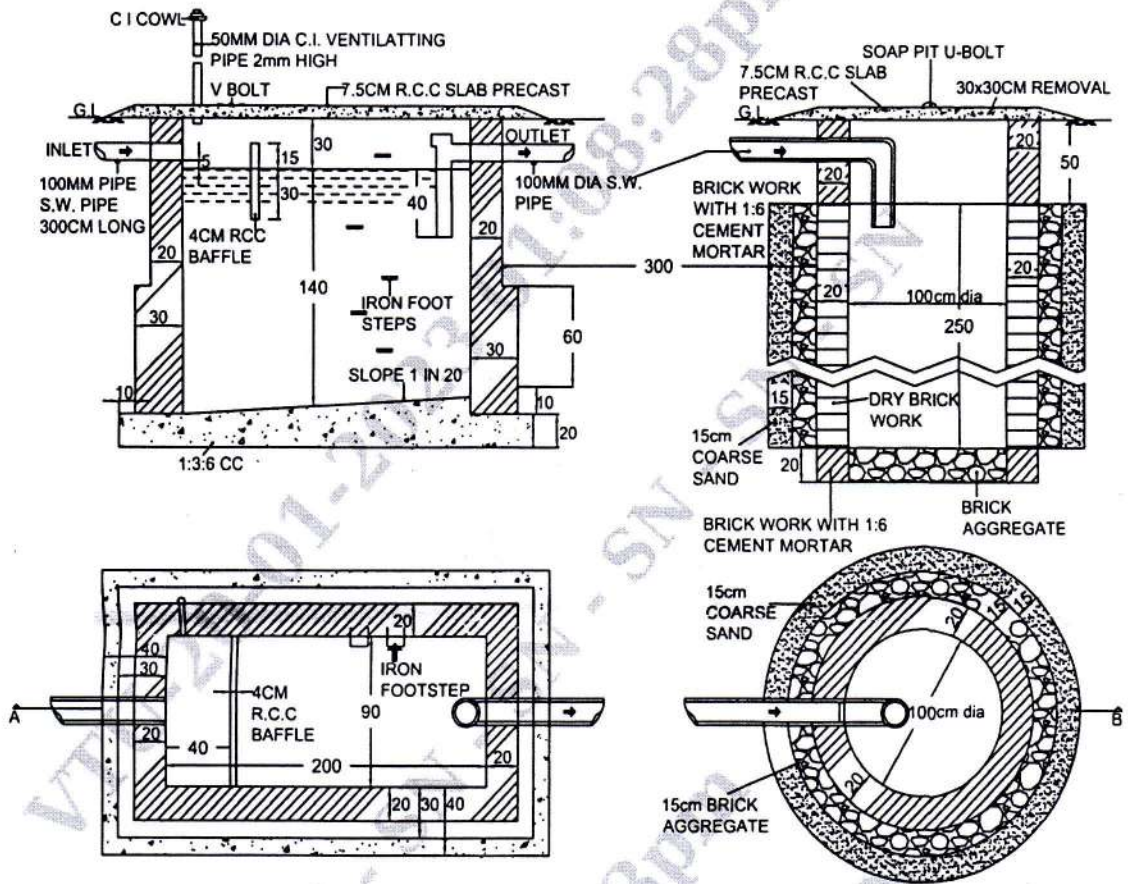
- 7 From first principle workout the rate per unit for the following. Given: cement = Rs.320/bag  
 fine aggregate = Rs.120/m<sup>3</sup> and coarse aggregate Rs.750/m<sup>3</sup>.  
 a. Cement concrete of 1:4:8 for foundation bed.  
 b. First class brick work in CM 1:6 super structure.  
 c. Random stone masonry in CM1:6 for foundation.  
 d. 12mm thick internal plastering in CM 1:4 for brick wall. (20 Marks)

OR

- 8 a. What is rate analysis? Describe the factor affecting rate analysis of an item. (10 Marks)  
 b. Write short note on:  
 i) Schedule of rates  
 ii) Unit rate and lump sum rate. (10 Marks)

**Module-5**

- 9 Prepare a detailed estimate for a septic tank with soak pit shown in Fig.Q.9 for the following items of work.  
 a. Earth work in excavation  
 b. First class brick work in CM 1:4 for side wall  
 c. R.C.C (1:2:4) for cover slab with 1% steel reinforcement for septic tank and soak pit. (20 Marks)



PLAN

ALL DIMENSIONS ARE IN CENTIMETER UNLESS OTHERWISE SPECIFIED

Fig.Q.9

OR

- 10 Define the following:
- Certificate of virtual completion
  - R.A bill and final bill
  - Liquidated damages
  - Payment certificate.

(20 Marks)

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