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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.

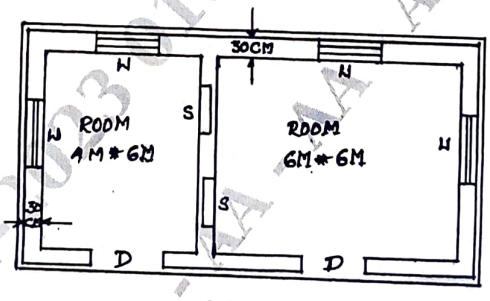
Determine the total cost of building project. **(20 Marks)**

Module-2

3 Estimate the quantities of the following item of a two roomed building from Fig.Q.3.

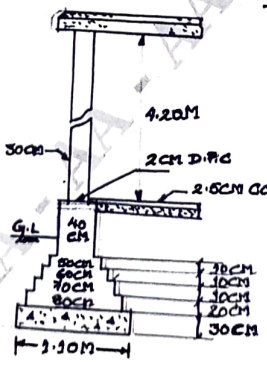
i) Earth work in excavation in foundation.
ii) Cement concrete in foundation.
iii) Size stone masonry in CM1:6 for foundation and plinth.
iv) 2.5CM D.P.C
v) First class brick work in CM 1:4 for super structure.

Use Long wall-short wall method. **(20 Marks)**



PLAN

Fig.Q.3



Note :-(1) Lintels over door, windows and shelves are 25cm thick.
(11) Doors D - 1.2*2.1M
WINDOWS W - 1.00*1.5M
Shelves S - 1.00*1.5M

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 alround. 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^3. 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^3 and coarse aggregate Rs.750/m^3.

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)**

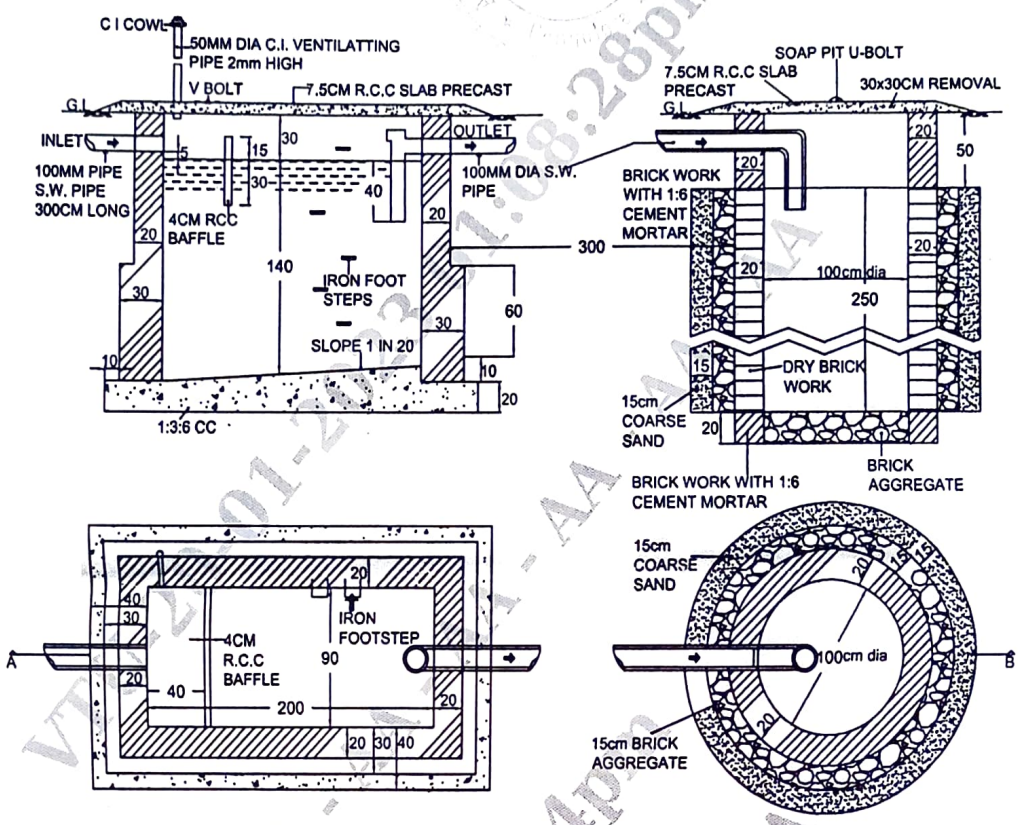
Module-5

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:

a. Certificate of virtual completion
b. R.A bill and final bill
c. Liquidated damages
d. Payment certificate. **(20 Marks)**

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