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09ARC6.6

Sixth Semester B.Arch. Degree Examination, June/July 2018

Estimating and Costing

Time: 3 hrs.

Max. Marks:100

**Note: 1. Answer Q.No.1 and any FOUR full questions from remaining.
2. Missing data if any may be suitably assumed.**

- 1 The details of a residential building are shown in Fig.Q1. Estimate the quantities of the following items of work and cost of the respective items in an abstract form.
- Earthwork excavation for the foundation at the rate of 120 Rs/m³ (07 Marks)
 - P.C.C. bed in (1:4:8) below foundation at the rate of 2200 Rs./m³. (07 Marks)
 - S.S.M in CM(1:4) for foundation and plinth at 3500 Rs./m³ (08 Marks)
 - Burnt brick masonry walls in CM (1:6) for super structure at Rs.4000/m³ (10 Marks)
 - Center line length calculations and Number of T-junctions. (08 Marks)

- 2 Write a technical specification for any three of the following:
- First class brick work in super structure in CM (1:6)
 - Cement plastering in CM (1:4)
 - R.C.C. (1:2:4) for roof slab
 - Random rubble stone masonry in CM (1:6) (15 Marks)

- 3 Work out from the first principles, the rate analysis for any three of the following:
- PCC (1:4:8) for foundation bed
 - 12 mm thick plastering in CM (1:6) in superstructure
 - 25 mm thick cement concrete flooring of (1:2:4)
 - Coursed rubble stone masonry in CM (1:6) for foundation. (15 Marks)

- 4 Reduce level (RL) of ground along the centerline of proposed road from chainage 10th to 20th chainage are given below. The formation level at the 10th chainage is 107 M and the road is downward gradient of 1 in 150 upto the chainage 14th and then the gradient changes to 1 in 100 downward. Formation width of road is 10 meters and side slopes of banking are 2:1 (horizontal : vertical). Length of the chain is 30 M. Draw longitudinal section of the road and a typical cross-section and prepare estimate of the earth work at the rate of Rs.275/m³.

Chainage	10	11	12	13	14	15	16	17	18	19	20
R.L. of ground (M)	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.30

(15 Marks)

- 5 The steel quantity is to be computed diameter wise from the following data size of column footing 1.5 × 1.5 m in plan. Steel provided for footing 10 mm ϕ @ 10 cm c/c both ways. Cross section of column 300 × 450 mm. Main reinforcement for column 4 Nos of 20 mm ϕ + 2 Nos of 16 mm ϕ . Lateral ties 8 mm ϕ @ 10 cm c/c (2 legged). Height of column 5.0 m.

Weight of 8 mm ϕ → 0.4 kg/mWeight of 10 mm ϕ → 0.6 kg/mWeight of 16 mm ϕ → 1.6 kg/mWeight of 20 mm ϕ → 2.5 kg/m

(15 Marks)

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.

- 6 The details of a septic tank. Show in Fig.Q6. Estimate the quantities for the following items of work.
 - a. Earth work excavation in foundation
 - b. First class brick work with 1:4 CM
 - c. P.C.C bed (1:3:6) in foundation.

(15 Marks)

- 7 Write short notes on any three of the following:
 - a. Lump sum contract
 - b. Overhead costs
 - c. Schedule of rates
 - d. Bill of quantities

(15 Marks)

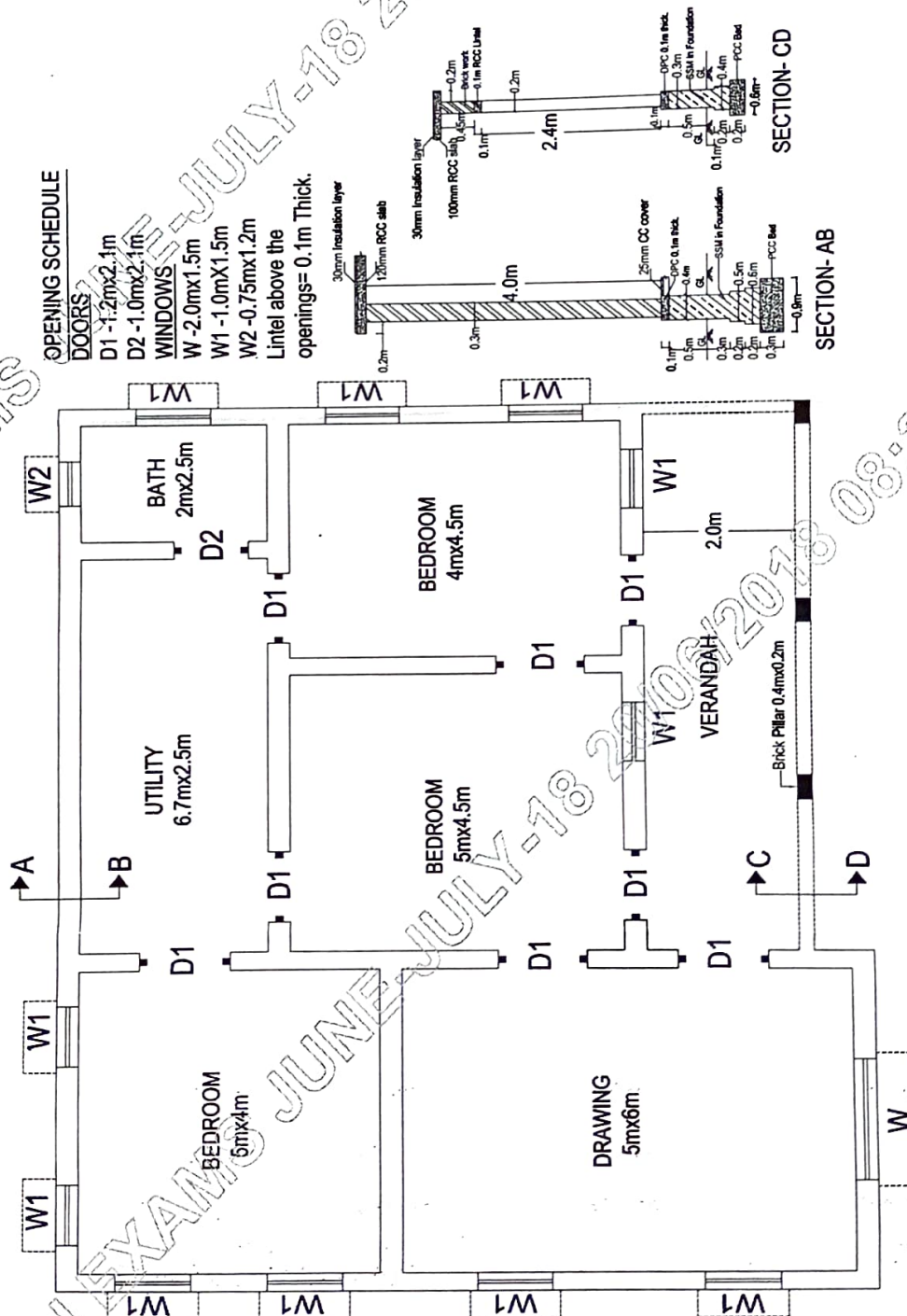


Fig.Q1

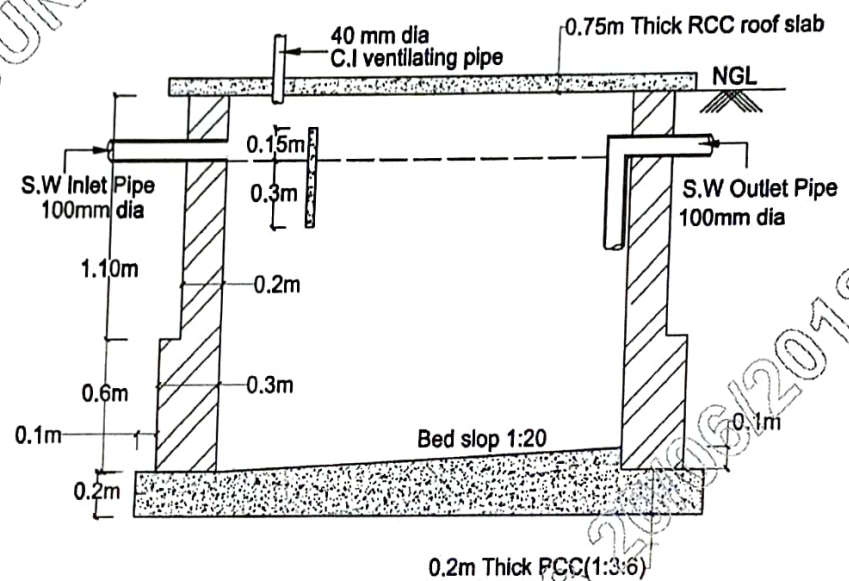
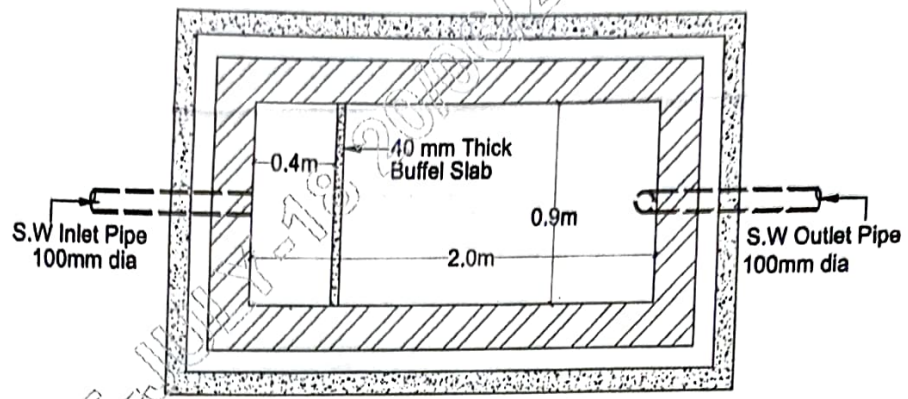


Fig.Q6
