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.
   a.   Earthwork excavation for the foundation at the rate of 120 Rs/m^3 (07 Marks)
   b.   P.C.C. bed in (1:4:8) below foundation at the rate of 2200 Rs./m^3.   (07 Marks)
   c.   S.S.M in CM(1:4) for foundation and plinth at 3500 Rs./m^3 (08 Marks)
   d.   Burnt brick masonry walls in CM (1:6) for super structure at Rs.4000/m^3 (10 Marks)
   e.   Center line length calculations and Number of T-junctions.   (08 Marks)

2   Write a technical specification for any three of the following:
   a.   First class brick work in super structure in CM (1:6)
   b.   Cement plastering in CM (1:4)
   c.   R.C.C. (1:2:4) for roof slab
   d.   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:
   a.   PCC (1:4:8) for foundation bed
   b.   12 mm thick plastering in CM (1:6) in superstructure
   c.   25 mm thick cement concrete flooring of (1:2:4)
   d.   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 charges
        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/m^3.

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 tiles 8 mm φ @ 10 cm c/c (2 legged).
        Height of column 5.0 m.
        Weight of 8 mm φ → 0.4 kg/m   Weight of 10 mm φ → 0.6 kg/m
        Weight of 16 mm φ → 1.6 kg/m   Weight of 20 mm φ → 2.5 kg/m   (15 Marks)

6　The details of a septic tank. Show in Fig.Q6. Estimate the quantities for the following item 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
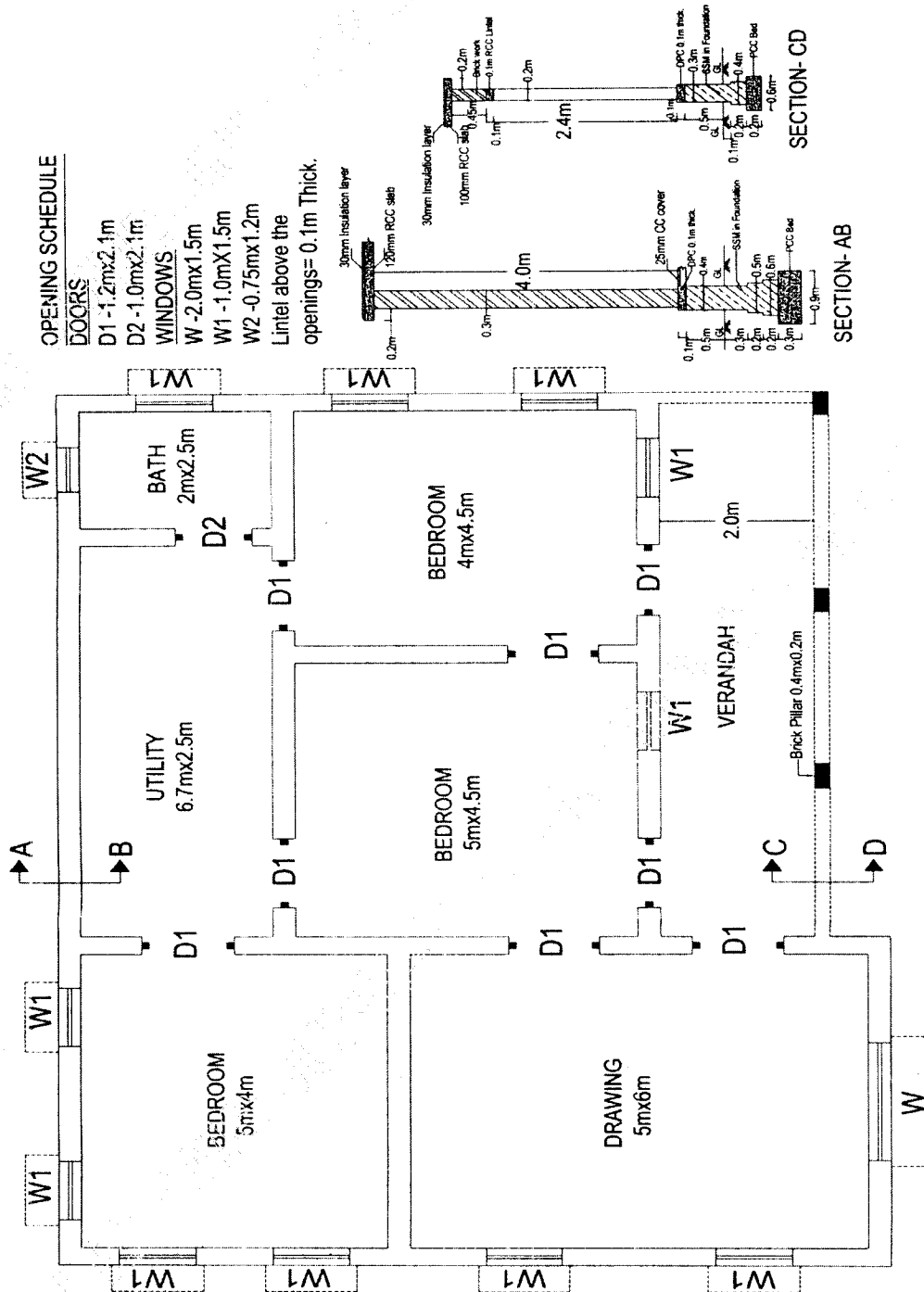　c.　Schedule of rates　　　　　　d.　Bill of quantities　　　　　　　　　(15 Marks
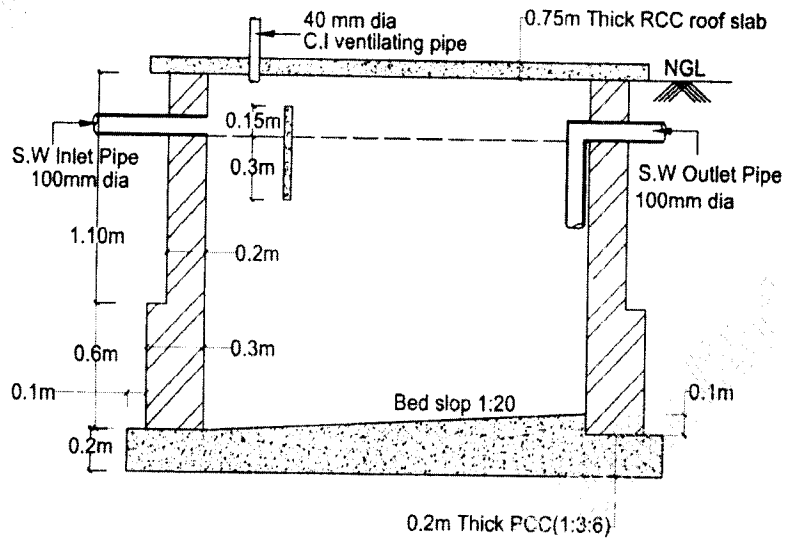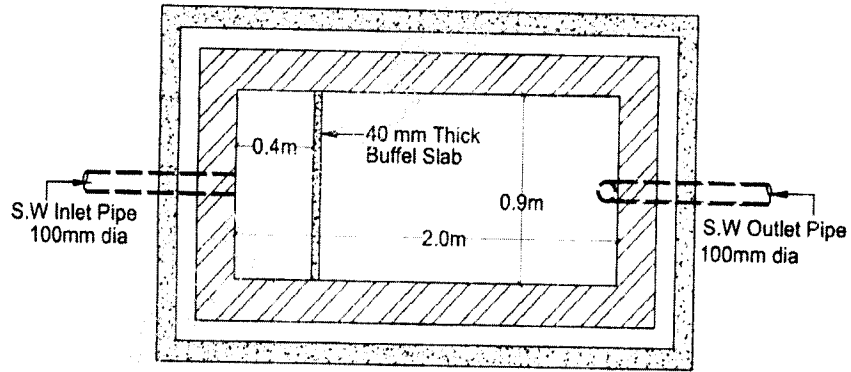

Fig.Q1

Fig.Q6

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