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Sixth Semester B.Arch. Degree Examination, June/July 2016
Estimating and Costing

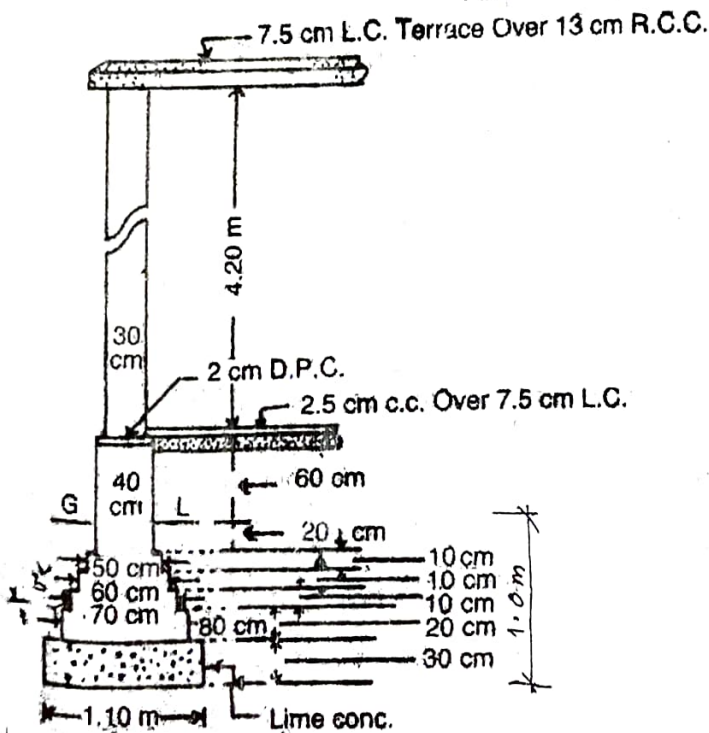
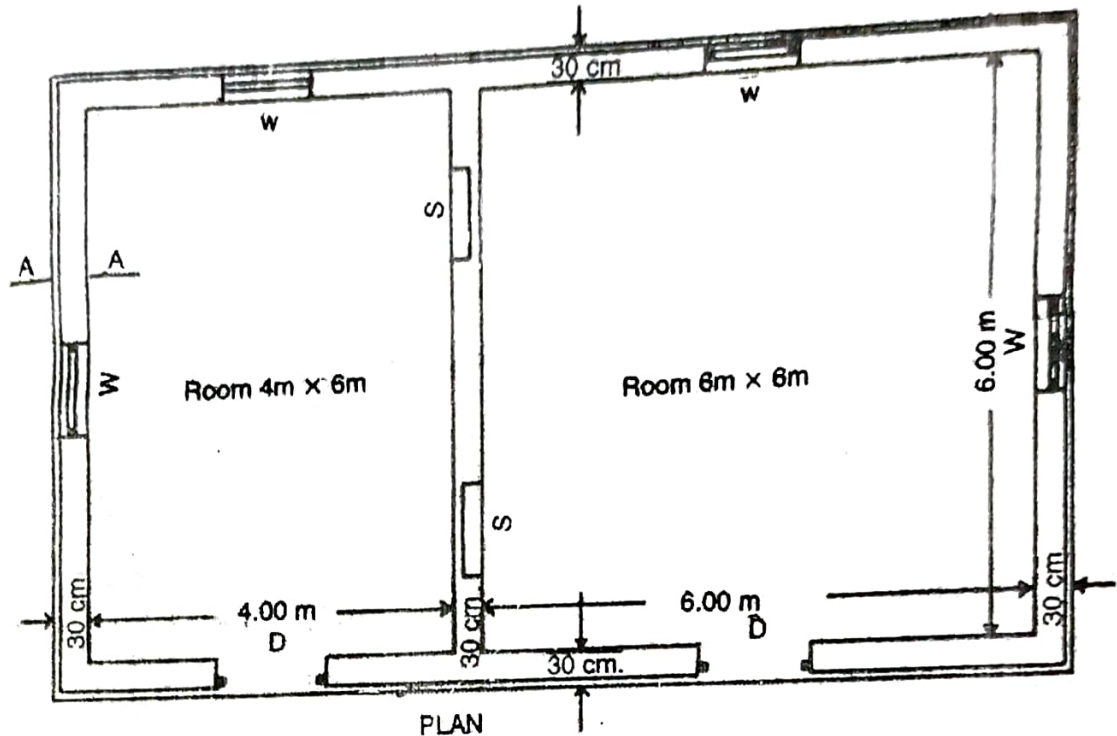
Time: 3 hrs.

Max. Marks: 100

- Note:** 1. Answer any **FOUR** full questions from question 2 to 7.
2. Question No. 1 is compulsory.
3. Missing data, if any, may be suitably assumed.

- 1 Fig. Q.1 shows the details of a small residential unit. Prepare a detailed estimate for below mentioned items of works by "CENTRE LINE METHOD".
- Centre line calculations details. (08 Marks)
 - Earth work excavation for the foundation in hard soil. (08 Marks)
 - P.C.C bed concrete in 1 : 4 : 8 for foundation using 40 mm and down size coarse aggregates. (04 Marks)
 - P/C size tone masonry walls in CM 1 : 6 in foundation and plinth. (10 Marks)
 - P/C burnt brick masonry in cm 1 : 6 for super structure (only main walls). (10 Marks)
- 2 Write the detailed technical specifications for the following items.
- Earth work excavation for the foundation in hard soil.
 - Providing and constructing random rubble masonry for foundations using hammer dressed stones in cm 1 : 6
 - Providing and laying plastering to internal walls in cm 1 : 4 with line rendering. (15 Marks)
- 3 From the 1st principal arrive at the rate for below mentioned items of work.
- Providing and constructing P.C.C bed in 1 : 4 : 8 mix for the foundation using 40 mm down size aggregate.
 - Providing and constructing burnt brick masonry in cement mortar 1 : 8
 - Providing and laying polished Tandoor or Shahbad or Kota tile flooring in cm 1 : 4 over a bed of P.C.C in 1 : 4 : 8. (15 Marks)
- 4
- Explain briefly different types of estimates. (10 Marks)
 - Work charge establishment. (05 Marks)
- 5 Find out the steel quantity and concrete quantity from the following data :
- Cross section of column size : 230 mm × 450 mm
 - Main reinforcement of column : 4 Nos 16 mm ϕ
4 Nos 12 mm ϕ
 - Stirrups : 8 mm ϕ @ 15 cms c/c
 - Height of the column : 4.5 m
 - Column footing : 1.5 m × 1.5 m × 0.45 m flat
 - Footing reinforcements : 10 mm ϕ @ 15 cms c/c both ways
- Calculate the weight of all bars using the formula $d^2/162$ where d is diameter of the bar and give the bar schedule details. (15 Marks)
- 6 Calculate the quantity of earth work for 300 m length for a portion of road in a uniform ground. The height of banks at two ends begin 7.0 and 1.3. The formation width is 6.0 m and side slopes 2 : 1 (horizontal : vertical). Assume that there is no transverse slope. Calculate the quantity using method-I. (15 Marks)
- 7 Fig.Q7 shows the details of septic tank. Prepare the estimate for the following items of work.
- P.C.C bed concrete in 1 : 3 : 6 mix for foundation using 40 mm down size aggregate
 - Burnt brick masonry in cement mortar 1 : 4
 - Plastering to internal walls in cm 1 : 4. (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.



CROSS SECTION OF WALL ON AA.

All Walls are of same section.
Lintels over Doors, Windows and
Shelves are 15 cm thick R.B.

Doors D-1.20 m x 2.10 m
Windows W-1.00 x 1.50 m
Shelves S-1.00 m x 1.50 m

Fig. Q1

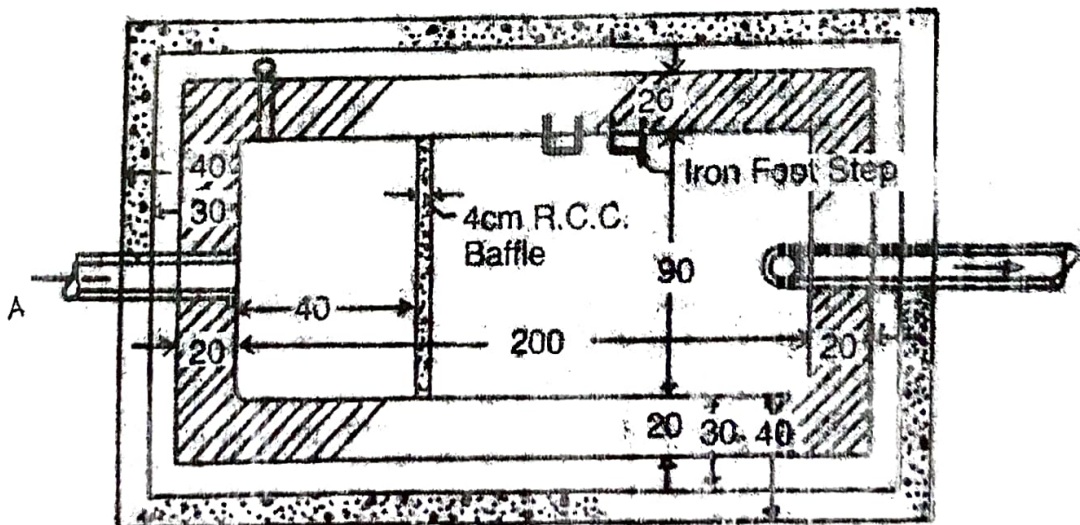
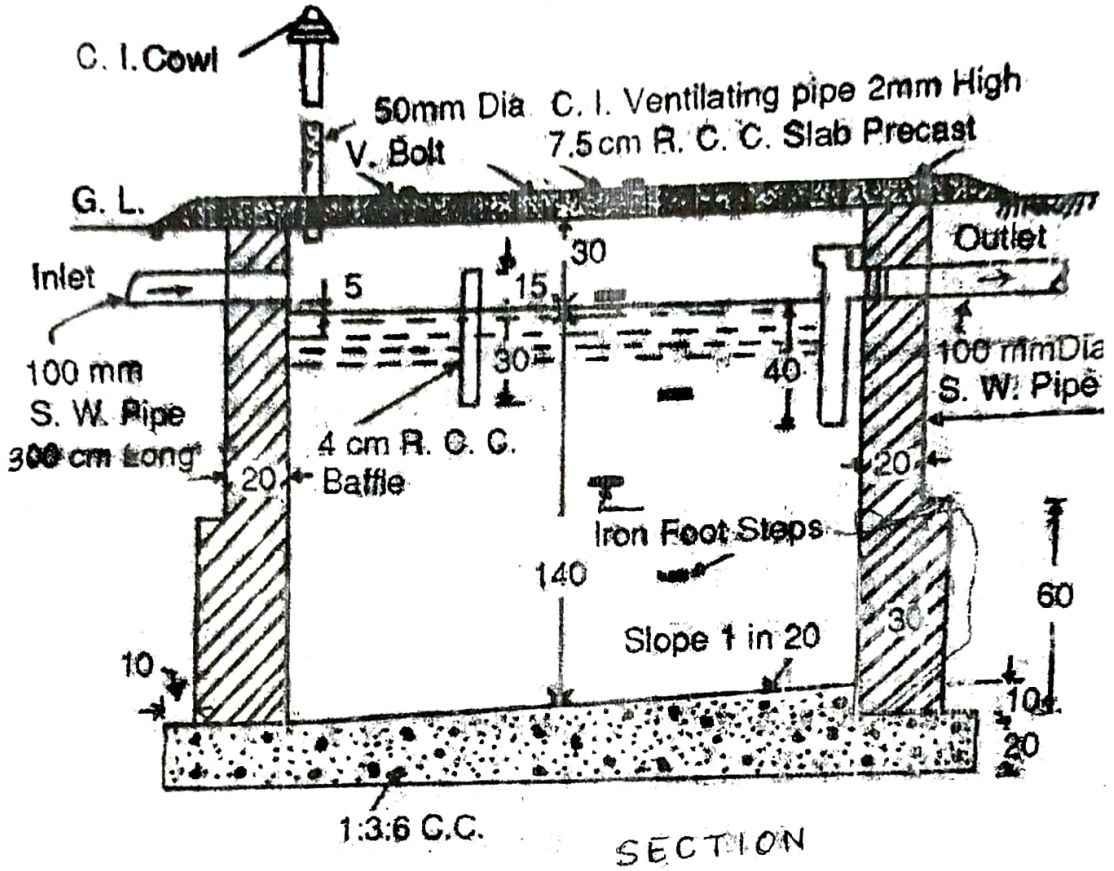


Fig. Q7
 All dimensions in centimeter