

**Sixth Semester B.Arch. Degree Examination, Dec.2019/Jan.2020**  
**Estimating and Costing**

Time: 3 hrs.

Max. Marks:100

**Note: 1. Question No. 1 is compulsory.**

**2. Answer any FOUR full questions from Q.No.2 to Q.No.7.**

**3. Assume any missing data.**

- 1 Fig.Q1 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. (10 Marks)
  - Earthwork excavation for the foundation. (10 Marks)
  - P.C.C bed concrete 1 : 4 : 8. (10 Marks)
  - Size stone masonry in cm 1:6 for foundations. (10 Marks)

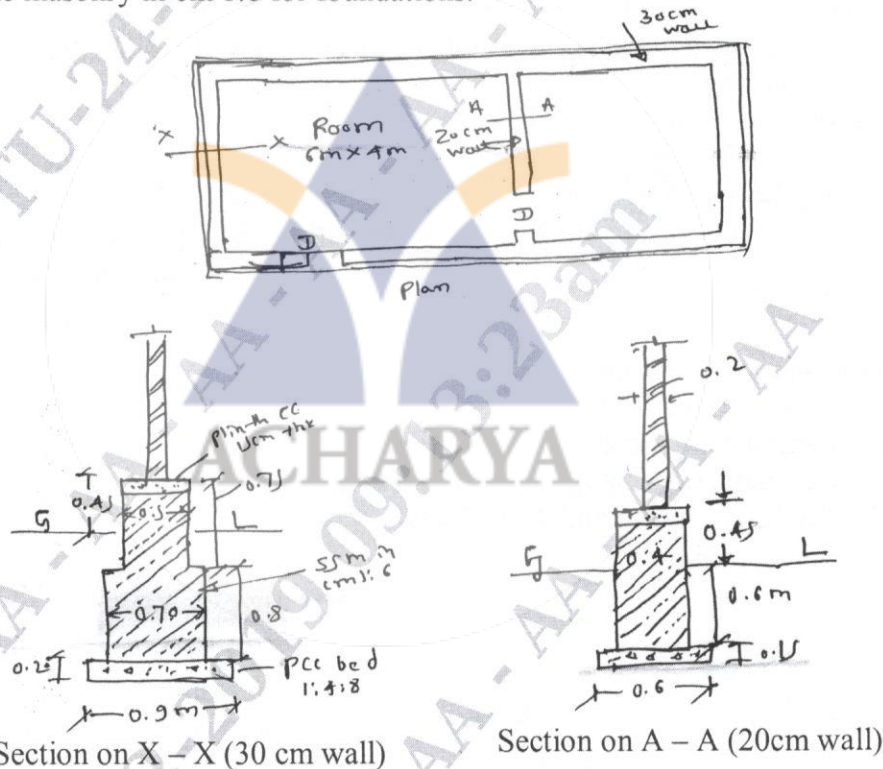


Fig. Q1. All dimensions are in meter.

- 2 Write the detailed technical specifications for the following items :
- Earthwork excavation for 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 interior walls in cm 1:4 with lime rendering. (15 Marks)
- 3 From first principles arrive at the rate for below mentioned items or work :
- Providing and constructing burn brick masonry in cm 1:6.
  - Providing and laying vitrified tiles flooring in cm 1:6 in bed or PCC 1 : 4 : 8.
  - Providing and laying M20 grade concrete for column footing wing 20mm and down size coarse aggregates. (15 Marks)

- 4 a. Explain briefly different types of estimates. (10 Marks)  
 b. Explain Work charge establishments. (05 Marks)
- 5 Find out the steel quantity and concrete quantity from the following data :  
 a. Cross section of column size : 230mm × 450mm.  
 b. Main reinforcement of column : 4 nos 16  $\Phi$   
 4 nos 12mm  $\Phi$   
 c. Stirring : 8mm  $\Phi$  @ 150 mm c/c.  
 d. Height of column : 4.5m  
 e. Column footing : 1.5m × 1.5m × 0.45m flat.  
 f. Footing reinforcement : 10mm  $\Phi$  @ 15cms c/c in bothways.  
 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 A road i) proposed for a length of 400 mts from the leveling work below mentioned details were obtained. Estimate the quantity of earth work from following data :  
 Formation width → 10m.  
 Site slope in filling – 2H : 1V  
 Cutting – 1.5H : 1V.

Chainage	0	40	80	120	160	200	240	280	320	300	400
RL	51	50.9	50.5	50.8	50.6	50.7	51.20	51.4	51.3	51.00	50
FL	52	← downward gradient at 1 : 200 →									

(15 Marks)

- 7 Write short notes on any three  
 a. Measurement book.  
 b. Earnest money deposit and security.  
 c. Reconciliation statement of materials at project size.  
 d. Tender document and its contents. (15 Marks)

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