

T.Y. Diploma : Sem. V
[CE/CR/CS/CV]
Estimating and Costing
Prelim Question Paper



Time: 4 Hrs.]

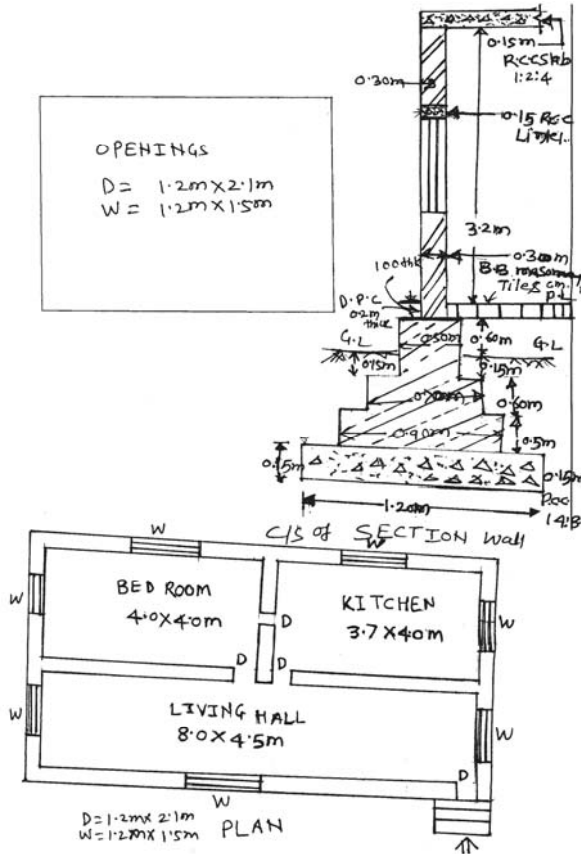
[Marks : 100

Instruction : (1) All questions are compulsory.

- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data, if necessary.
- (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (6) Formula sheet is allowed.

1. (a) Attempt any **THREE** of the following : [12]
 - (i) What is estimating & costing and state two purpose of estimating & costing.
 - (ii) Differentiate between Revised and Supplementary estimate.
 - (iii) State the modes of measurement for following item of work:
 - (1) Skirting
 - (2) Expansion joint
 - (3) Dado
 - (4) Brick wall (100 mm thick)
 - (iv) State the rules of desired accuracy in taking measurement as per IS1200.

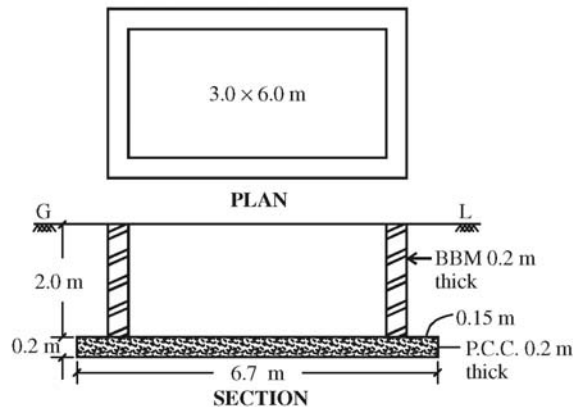
(b) Attempt any **ONE** of the following : [6]
 - (i) List different types of detailed estimate.
 - (ii) What is bar bending schedule? State any two advantages of preparing bar bending schedule.
 - (iii) State the local rate of following materials :
Murrum, Traditional Bricks, Cement, Rubble
2. Attempt any **TWO** of the following : [16]
 - (a) Describe the procedure for preparing approximate estimate of road project.
 - (b) Prepare approximate estimate of a bridge having 5 spans of 40 m each using following data :
 - (i) Cost of existing bridge ₹ 1.2 cr.
 - (ii) Existing bridge having 3 span of 50 m each.
 - (c) (i) Describe in brief long wall short wall method for taking out quantities.
(ii) Describe in brief prismatic method for finding out earthwork quantities.
3. Attempt any **FOUR** of the following : [16]
 - (a) A R.C.C. Lintel size 250 × 150 mm & clear span of 1.5 m is reinforced with 4 bars of 10 mm ϕ @ bottom & 3 bars of 8 mm ϕ @ top. The stirrups of 6 mm ϕ are provided 150 mm c/c. Bearing of lintel is 150 mm. Calculate the total I quantity of steel reinforcement.
 - (b) What is prime cost & pay work?
 - (c) Enlist any four software used for estimation in Civil Engineering.
 - (d) What is work charged establishment & contingencies?
 - (e) Define : (i) Day work (ii) Lead and Lift
(iii) Work change establishment (iv) Task work
4. (a) Attempt the following : [12]
 - (i) Workout quantities of following any three items and enter the same in standard format for measurement sheet with description of item Refer Fig. (any four):
 - (i) Earthwork in excavation
 - (ii) P.C.C. in foundation bed
 - (iii) U.C.R. masonry in foundation and plinth
 - (iv) Brick masonry
 - (v) Internal plaster
 - (vi) Flooring



4. (b) Attempt any **ONE** of the following :

[6]

- (i) Work out the quantity of following items for septic tank having internal size 1.5 m × 3.5 m and height 1.50 m. The top of slab of septic tank is 20 cm above ground level.
 - (i) Earthwork in excavation.
 - (ii) P.C.C. (M15) 15 cm thick
 - (iii) B.B. masonry in C.M. (1:6) 300 mm thick.
 - (iv) R.C.C. slab M20 on septic tank 12 mm thick
15 cm offset is provided for P.C.C. on all sides of septic tank.
- (ii) Find quantity of brickwork, P.C.C., excavation and internal plaster for a underground water tank. (Fig. 1)



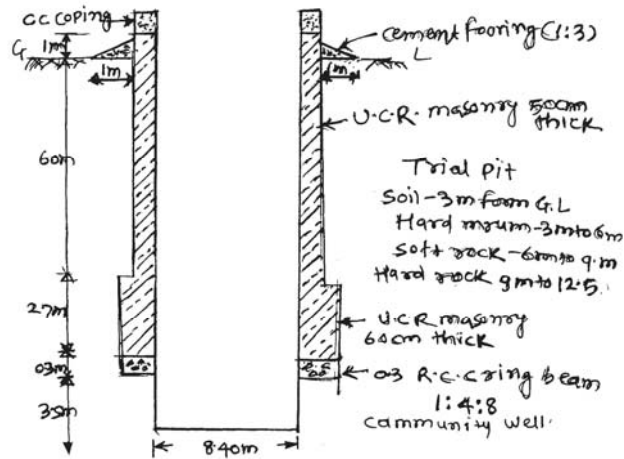
All dimensions are in metre.

5. Attempt any **TWO** of the following :

[16]

- (a) R.C.C. slab of overall size 5500 mm × 3000 mm and thickness 175 mm is provided with 12 mm main bars bent-up alternately and placed at distance 150 mm c/c. The distribution steel of 8 mm diameter is provided at distance 200 mm c/c. Find out the quantity of steel, prepare bare bending schedule take cover 15 mm.

- (b) Calculate the quantity of excavation and UCR masonry work and enter in standard measurement sheet with brief description of item of work for community well as shown in Figure.



- (c) Prepare rate analysis for brick work in superstructure in c.m (1:6) proportion.

6. Attempt any **FOUR** of the following :

[16]

- How will you consider electrification work, plumbing work in estimation?
- Define rate analysis, state purpose of rate analysis.
- Write down the approximate percentage of steel required for various R.C.C. members.
- Explain prismoidal formula method for finding earth work for road.
- Define: (i) Centage charges (ii) Prime cost
(iii) Load factor (iv) Task work

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T Y Diploma Sem-V: Paper Discussion Schedule

Branches	Date	Day	Timing	Centres
Civil Group	3 Nov. 2018	Saturday	6.30 p.m. to 8.30 p.m.	Thane