

17501

11819

4 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Figures to the right indicate full marks.
(4) Use of Non-programmable Electronic Pocket Calculator is permissible.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any THREE of the following:** **12**
- (i) State the purpose of estimating and costing.
 - (ii) Describe in brief revised and supplementary estimate.
 - (iii) Prepare an estimate for two span bridge of 40 m each, the cost of existing bridge is Rs. 50,000/- per meter.
 - (iv) Draw standard format of measurement book and abstract sheet.
- b) **Attempt any ONE of the following:** **6**
- (i) State standard mode of measurement for following items.
 - (1) DPC
 - (2) Wood work for door frame
 - (3) Skirting
 - (4) Ornamental cornice
 - (5) Honeycombed brickwork
 - (6) Form work
 - (ii) Describe in brief rules of deduction for opening as per IS 1200 for brickwork and plastering.

P.T.O.

- 2. Attempt any TWO of the following:** **16**
- a) Describe in brief procedure for preparing approximate estimate of Irrigation project and highway project.
 - b) Prepare approximate estimate for high school building from following data:
 - (i) Proposed plinth area = 2500 sqm.
 - (ii) Plinth area rate = 4000 / sqm.
 - (iii) Water supply charges = 3% of cost of building
 - (iv) Electric installation charges = 10% of cost of building
 - (v) Contingencies = 3% of overall cost of building
 - c)
 - (i) Describe in brief center line method for taking out quantities.
 - (ii) State the approximate percentage of steel requirement for following R.C.C. members.
 - (1) Footing
 - (2) Column
 - (3) Beam
 - (4) Slab
- 3. Attempt any FOUR of the following:** **16**
- a) Describe in brief DSR.
 - b) State data required for detailed estimate.
 - c) Define:
 - (i) Provisional sum
 - (ii) Provisional quantities
 - d) Enlist any four software used for estimation in civil engineering.
 - e) Define:
 - (i) Lead and Lift
 - (ii) Task work

4. a) Workout quantities of any three items of work for Figure No. 1

12

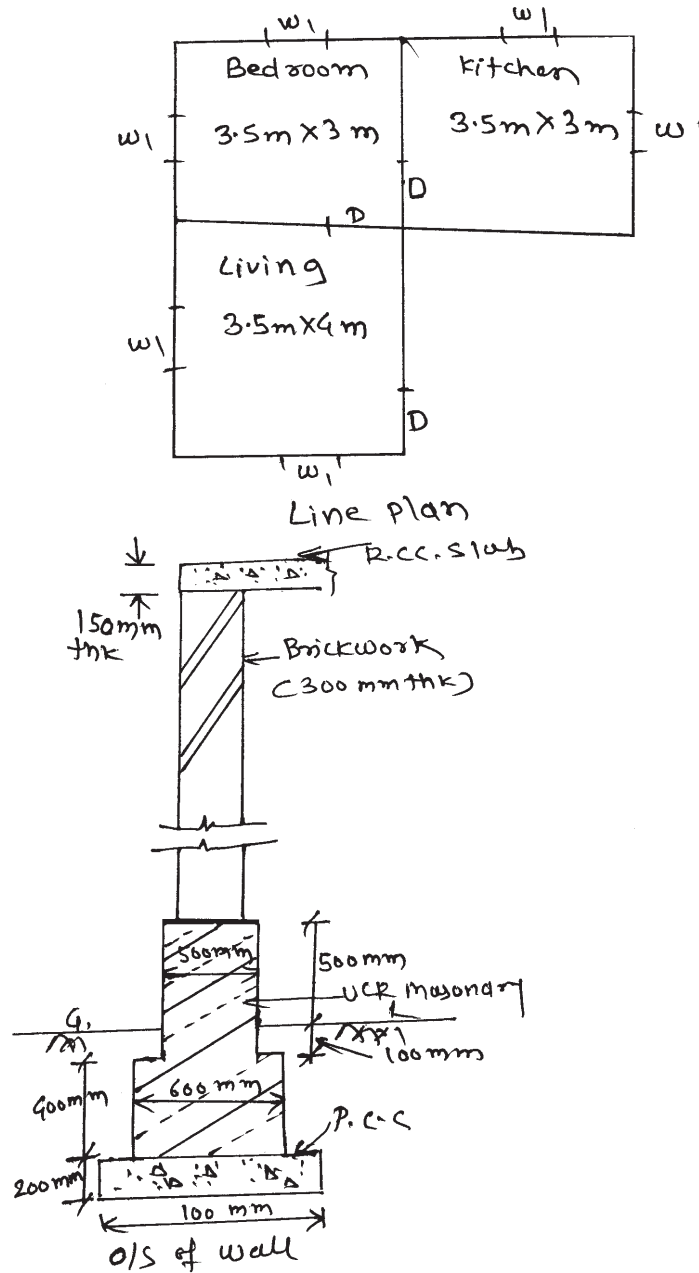


Fig. No. 1

- (i) Earthwork in excavation
- (ii) P. C. C. (1 : 4 : 8)
- (iii) U. C. R. Masonary in foundation
- (iv) Mosaic flooring

b) Attempt any ONE of the following:

6

(i) Find out total quantity of steel and prepare BBS from following data:

(1) Size of room = 6 m × 4 m

(2) Thickness of slab = 120 mm

(3) Main bars bentup alternatively = 12 mm dia
along shorter span @ 140 mm c/c

(4) Distribution bars = 6 mm dia
along longer span @ 125 mm c/c

(ii) Find out total quantity of material required for 25 m³ concrete. The proportion of concrete is 1 : 2 : 4

5. Attempt any TWO of the following:

16

a) Calculate quantity of earthwork from following data:

(i) Formation level of starting chainage = 107

(ii) Formation width of road = 10 m

(iii) Down gradient of road = 1 in 150

(iv) Side slope = 2 H : 1V

Chainage m	300	330	360	390	420
Ground level m	105	105.6	105.4	105.9	105.45

b) Prepare rate analysis for 12 mm thick cement plaster in C.M. (1:4) in super structure.

c) Prepare rate analysis for brickwork in super structure (1 : 6) proportion.

6. Attempt any TWO of the following:

- Define rate analysis and state factors affecting rate analysis. Explain in brief importance of rate analysis.
- Workout the quantity of following items for septic tank (size $2\text{ m} \times 4\text{ m}$) and height 1.5 m . The top of slab of septic tank is 20 cm above GL.
 - Earth work in excavation
 - P.C.C. (15 cm thick) at bottom
 - B.B. Masonary (250 mm thick)
 - R.C.C. slab at top (15 cm thick)
- Find quantity of earth work in excavation and cement concrete for circular community well (Refer Figure No. 2)

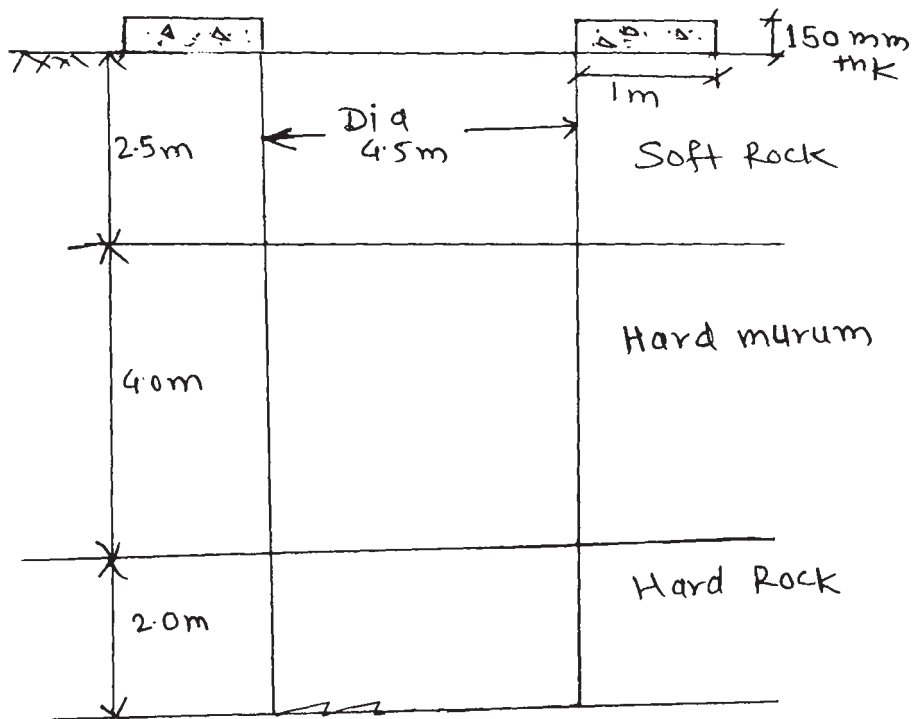


Fig. No. 2