17501

15162

4 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Answer ***each*** *next main question on a* ***new*** *page.*
(3) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(4) Figures to the ***right*** *indicate* ***full*** *marks.*
(5) Assume suitable data, if necessary.

Marks

1. A) Attempt **any three** of the following : **12**

a) State the meaning of terms estimating and costing. Enlist its purposes.

b) Enlist types of estimates. Mention the situations when supplementary estimate is prepared.

c) State mode of measurement for

i) P.C.C. (1 : 2 : 4)

ii) Manholes and inspection chambers

iii) Wood work for door frame

iv) 10 cm thick brick wall.

d) Explain cubic content method of approximate estimate.

B) Attempt **any one** of following : **6**

a) Draw the standard formats of measurement sheet, abstract sheet and face sheet.

b) Describe the following terms and state purpose of each

i) Contingencies

ii) Work charged establishment

iii) Centage charges.

2. Attempt **any two** of following : **16**

a) Describe how will you prepare an approximate estimate for a cinema theatre of 1000 seats by using service unit method.

b) Prepare approximate estimate of a town hall building having plinth area equal to 1500 m^2.

i) Plinth area rate Rs. 4,000 per m^2

ii) Water supply and sanitary installation – 5 % of cost of building

iii) Electric installation – 10 % of cost of building

iv) Other services – 5 % of cost of building

v) Contingencies – 3 % of overall cost of building

vi) Supervision charges – 8 % of overall cost of building.

P.T.O.

Marks

c) Calculate quantity of earthwork of road with following data using mean area method

Distance m	160	200	240	280	320	360
G.L. m	50.60	50.70	51.20	51.40	51.30	50

Formation width = 12 m. Formation R.L. of starting chainage 160 m. Is 51.20 m having falling gradient 1 in 40 side slope 2 : 1.

3. Attempt **any four** : **16**

a) State and explain factors affecting process of rate analysis.

b) Enlist the data required for detailed estimate and write necessity of each.

c) Give the hire charges for following machinery/equipments :

i) Concrete mixer

ii) Truck

iii) Vibrator

iv) Rammer.

d) Describe D.S.R. State its uses.

e) Calculate the quantities of following items of work for a circular community well as shown in Figure No. 3 :

i) Excavation in soft murum

ii) RCC Ring Beam.

f) State the rules of deduction for plastering as per IS : 1200.

4. A) Workout quantities of **any three** items of work for figure no. 1 **12**

i) Earthwork in excavation

ii) U.C.R. masonry in C.M. 1 : 6 in foundation and plinth

iii) Brickwork in C.M. 1 : 5 in superstructure, Thk. – 30 cm

iv) R.C.C. work in roof slab (M20 concrete).

B) Attempt **any one** of the following : **6**

a) Workout quantity of 6 mm, 10 mm and 16 mm ϕ reinforcement for a rectangular beam of size 230 × 500 mm. The beam is reinforced with 2 No's – 10 mm ϕ at top, 2 No's 16 mm ϕ at Bottom, 2 No's – 16 mm ϕ bentup, 6 mm ϕ two legged stirrups are provided at 150 mm c/c throughout the length. Length of beam is 4.5 m.

b) Workout the quantities of cement, sand and bricks required for 40 m^3 brick masonry in cement mortar 1 : 6.

5. Attempt **any two** of the following : **16**

a) Prepare rate analysis for U.C.R. masonry in C.M. 1 : 5 in foundation and plinth.

b) Prepare rate analysis for plain cement concrete of grade M 15 (1 : 2 : 4).

c) Find quantity of brickwork, bed concrete and excavation for underground water tank. Shown in figure no. 2.

Marks

6. Attempt **any four** : **16**

a) Describe long wall and short wall method for calculating quantities of items of work.

b) State four factors affecting taskwork.

c) Workout quantity of materials required for 12 mm thick plaster in C.M. 1 : 4 for 200 m^2 area.

d) State the names of softwares that are used for preparation of detailed estimates of building works.

e) State any four advantages of using softwares/programmes for estimating and costing.

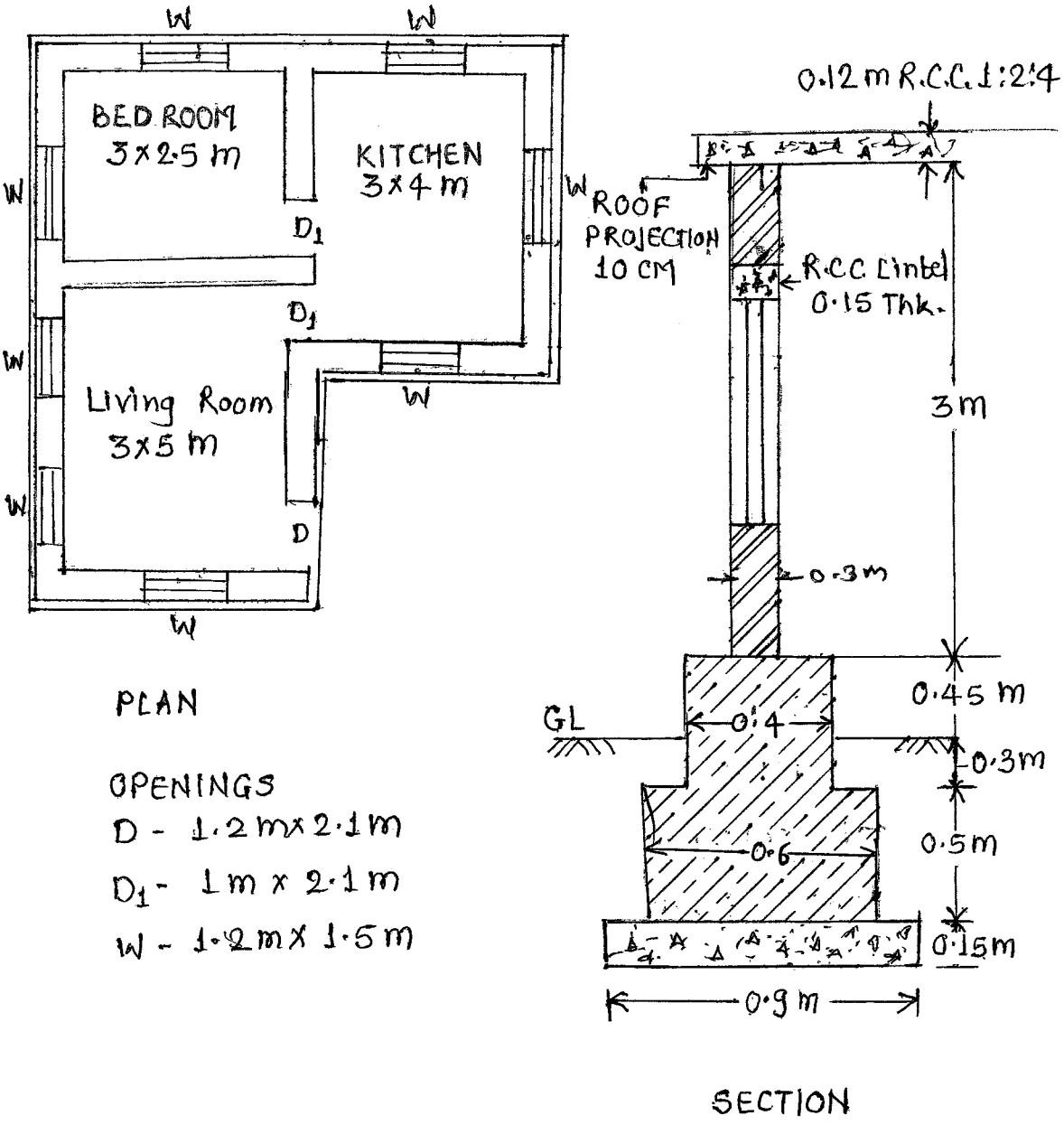

Fig. No. 1 (Q. No. 4 a)

Marks

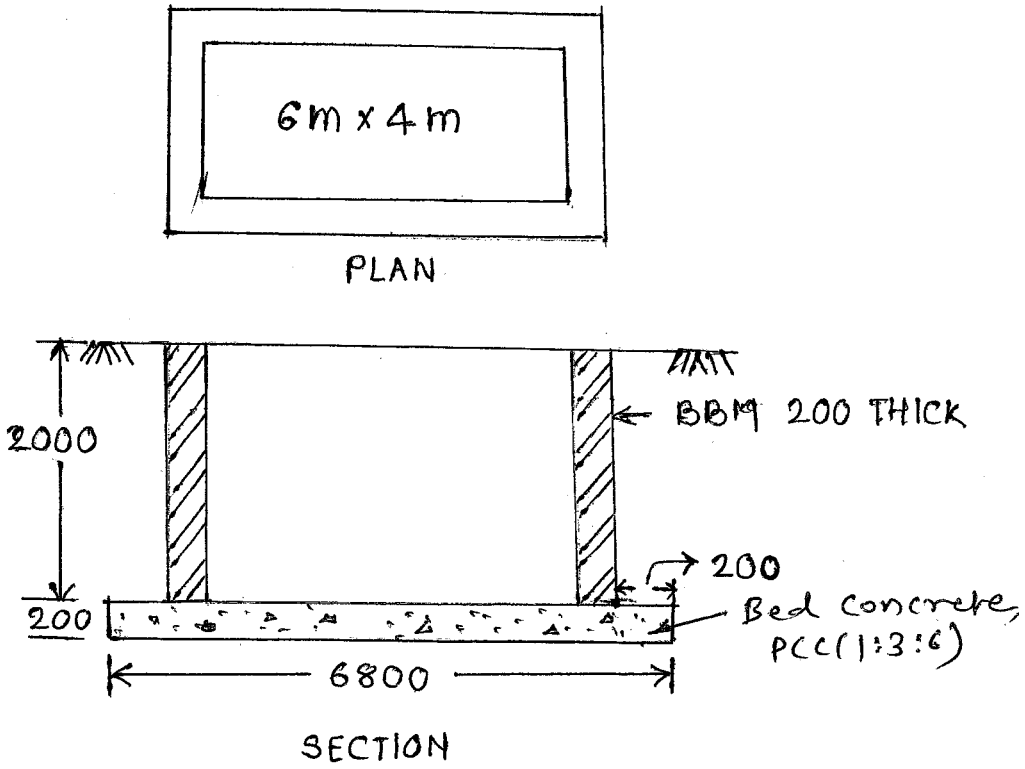

Fig. No. 2 (Q. No. 5 c)

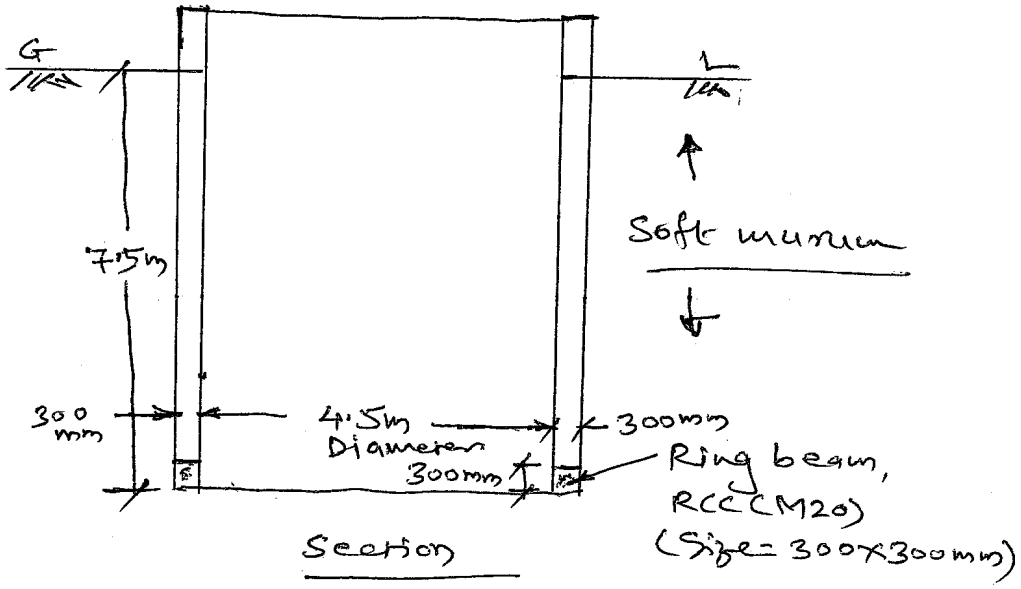

Fig. No. 3 (Q. No. 3 e)