22503

12526

3 Hours / 70 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.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) Define the term Administrative Approval.

b) State service unit for –
   i) Highway
   ii) Hospital Building
   iii) Stadium
   iv) School

c) State the term "Contingencies".

d) Draw the standard format of face sheet and abstract sheet.

e) State data required for preparing detailed estimate.

f) Define –
   i) Lead and
   ii) Lift

g) State mode of measurement for following items of work as per I.S.1200 –
   i) Wood work for door frame
   ii) PCC in foundation.
   iii) Excavation
   iv) Skirting upto 30 cm height

Marks

2. Attempt any THREE of the following : **12**

a) State the rules of deduction in plastering as per I.S. 1200.

b) State any four purposes of preparing approximate estimate.

c) Prepare approximate of proposed building from following data:

i) Plinth area of proposed building = 375 sq.m

ii) The cost of construction for similar structure is Rs. 18,35,000 having Plinth area 200 sq.m.

d) State the desired accuracy in taking measurements of items of works as per IS: 1200.

3. Attempt any THREE of the following : **12**

a) Explain long wall and short wall method for taking out quantities.

b) State and explain the data required for detailed estimate.

c) Explain the term - Prime cost and Provisional sum.

d) Workout quantity of 10 mm ϕ reinforcement in footing shown in Fig. No, 1 and prepare schedule of reinforcement.

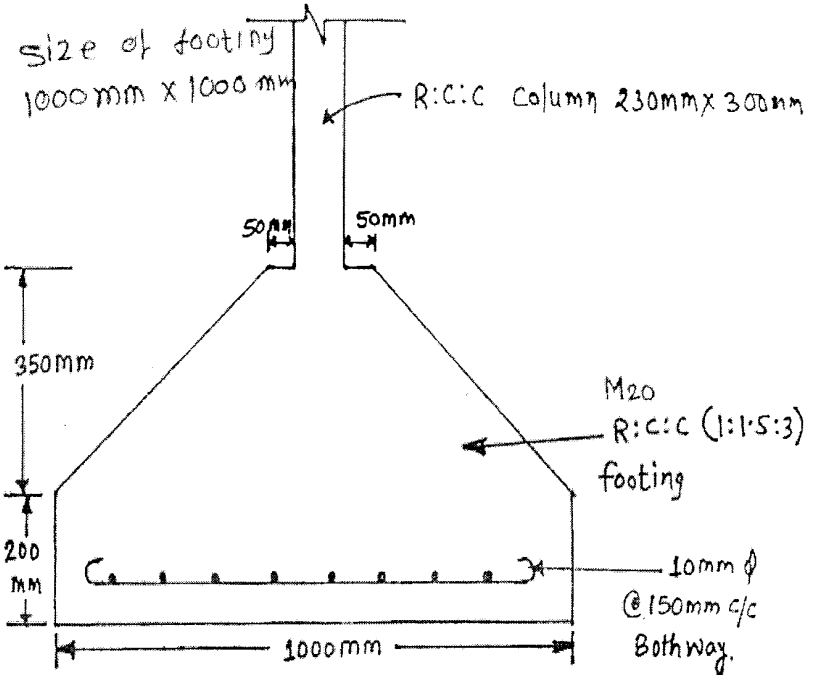


Fig. No. 1

Marks

4. Attempt any THREE of the following : **12**

a) Calculate the quantity of Excaviation and P.C.C. (1:2:4) for structure shown in Fig. No. 2.

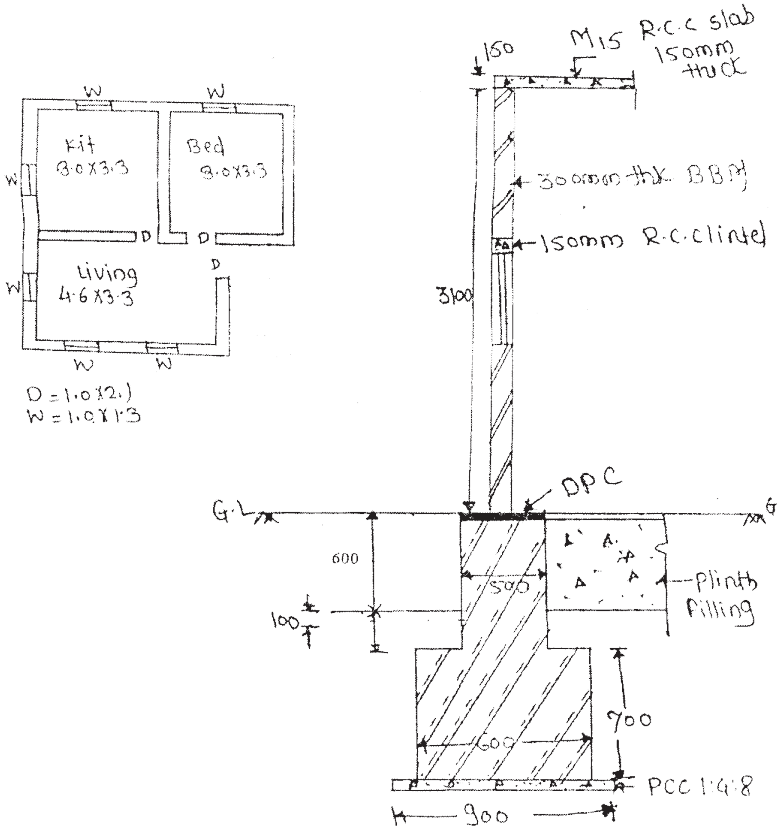


Fig. No. 2

b) Calculate the quantity of BBM in CM 1:6 for structure shown in Fig. No. 2.

c) Define task work and state four factors affecting task work.

d) Calculate the quantity of cement, sand and coarse aggregate for 60 m^3 cement concrete having proportion 1:1.5:3.

e) List any eight software's used for estimation in Civil Engineering.

Marks

5. Attempt any TWO of the following : **12**

a) Prepare the rate analysis for U.C.R. masonry in CM(1:4) in foundation.

b) Calculate quantity of earthwork of road using following data.

Formation width 12m

Slope in cutting 1.5:1

Slope in banking 2:1

Use mean area method.

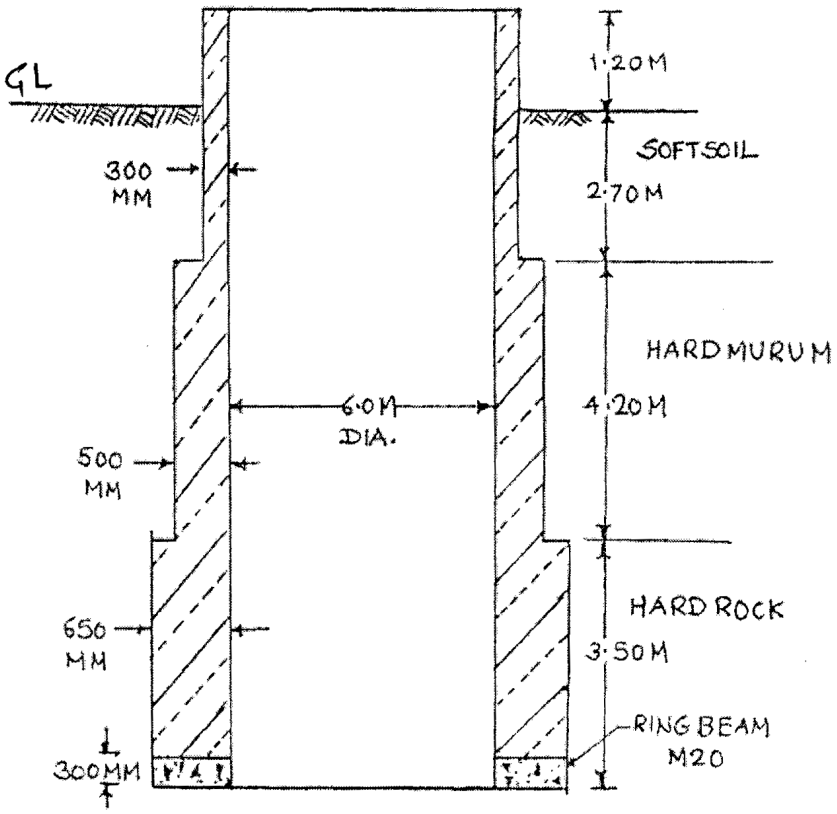
Ch in m	0	50	100	150	200
G.L.	500.00	499.20	498.42	494.80	494.00
F.L.	496.10	496.00	496.50	495.00	494.60

c) A RCC simply supported beam of side 300 mm × 650 mm is reinforced with four, 20 mm diameters bars. The main bars are placed in one row and two are bent-up. Two anchor bars of 12 mm diameters are provided to top and 6 mm diameter stirrups are provided at 150 mmc/c. The clear span of beam in 5.6 m. Calculate total quantity of mild steel and for steel reinforcement. Also prepare schedule of bars.

Marks

6. Attempt any TWO of the following : **12**

a) Calculate the quantity of excavation in standard measurement sheet with brief description of item for community well shown in Figure No. 3.



C/S OF COMMUNITY WELL

(Not to Scale)

Fig. No. 3

b) Define rate analysis and state five factors affecting rate analysis.

c) Calculate the quantity of ring beam concrete M20 for above community well as shown in Figure No. 3.