U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E. **Semester: VII**
Branch: CIVIL ENGINEERING **Duration: 3 hrs.**
Course Code: 21CV7PCCSE **Max Marks: 100**
Course: Contracts, Specification and Estimation **Date: 14.09.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data if any, may be suitably assumed.

UNIT - I

1 a) Discuss the purpose of estimation. **05**

b) The accompanying Fig.Q.1(b) shows the details of a Two-room building. Estimate the quantities by Long wall and short wall method and cost of the following items of works. **15**

i) Earthwork excavation for foundation in hard soil at a rate of Rs. 275/Cum
ii) PCC Bed concrete 1:4:8 at a rate of Rs. 4000/Cum
iii) First class BBM in CM 1:6 for superstructure at a rate of Rs. 6000/Cum

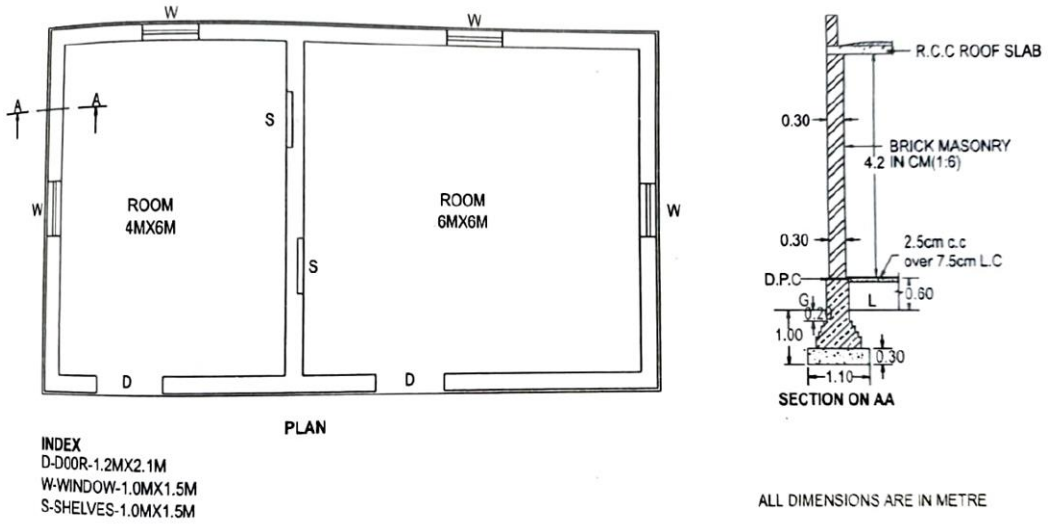

Fig.Q.1(b)

UNIT - II

2 The details of a Septic tank for 25 users is shown in Fig.Q.2. Estimate the quantities and cost of the following **20**

Earth work excavation for foundation in soft soil at the rate of Rs. 255/cum.
Cement Concrete 1:3:6 for floor and foundation at a rate of Rs. 4000/cum.
First Class Brick work in CM 1:4 at a rate of Rs. 6500/Cum.
Internal Plastering for the walls in CM 1:4, 12mm thick at a rate of Rs. 500.00/Sqm

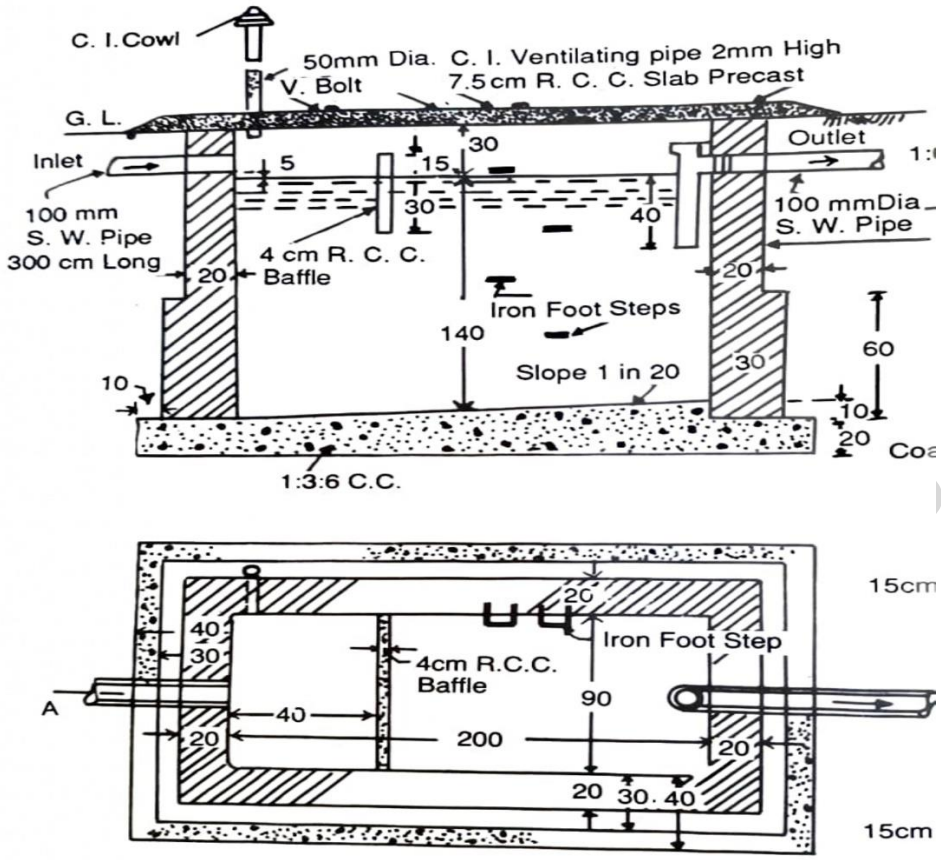

Fig.Q.2

OR

3 The accompanying Fig.Q.3 shows the details of a residential building. Estimate the quantities by center line method and cost of the following items of works. **20**

a) Centre to centre lengths and number of junctions.

b) Cement Concrete Bed 1:3:6 for foundation at a rate of Rs. 4500/Cum

c) Second class brick masonry in CM1:6 for super structure including parapet at a rate of Rs. 3500.00/Cum

d) Internal Plastering of walls and ceilings in CM 1:6 at a rate of Rs. 500.00/Sqm

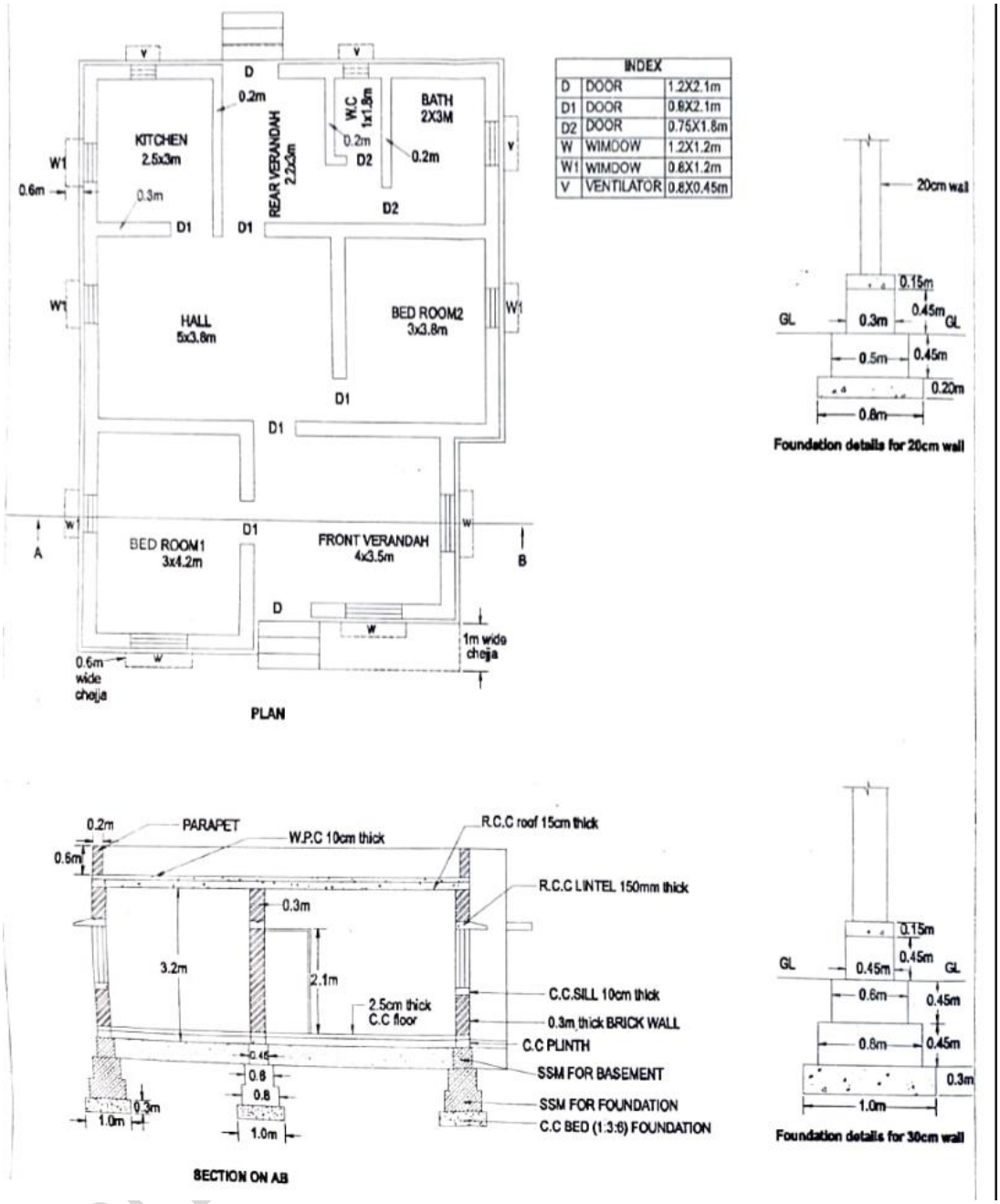

Fig.Q.3

UNIT - III

4 a) Estimate the quantities of earthwork for an embankment to support a railway track at a uniform downward gradient from station A to I. The formation levels at station A and I are RL 218.90 and RL 218.10 respectively. The ground levels at various stations 50m apart are as under **10**

Station	A	B	C	D	E	F	G	H	I
G. L.	220.5	220.1	219.7	219.2	218.5	218.2	217.7	217.3	217.5

The formation widths are 5.5m in cutting and 6.0m in banking. The side slopes are 1.5: 1 in cutting and 2:1 in banking. There is no transverse slope of the ground. Apply prismoidal formula for computations.

b) Estimate the quantities of earthwork for a portion of a proposed road from the following data. **10**

Proposed formation width of road is 10m, side slope 1.5:1 in cutting and 2:1 in banking. Assume there is no transverse slope. Compute the volume by using Mid sectional area method. GL= Ground Level, FL= Formation Level.

Station	0	60	120	180	240	300	360	420	480	540
R.L of G. L.	73.12	72.44	71.86	72.08	71.30	70.80	70.54	70.82	70.96	71.50
RL of FL	72.42	Downward gradient 0.8%				Upward gradient 0.5%				

UNIT - IV

5 a) Discuss the necessity of specifications. **05**

b) Discuss in brief specifications required for cement concrete 1:2:4 ratio. **05**

c) Find out rate analysis for random rubble stone masonry in cement mortar 1:6. **10**

OR

6 a) Discuss in brief about general specifications. **05**

b) Discuss in brief specifications required for DPC of 2.5cm thick. **05**

c) Find out rate analysis for RCC works for cement concrete 1:2:4 ratio with 1.5% of reinforcement. **10**

UNIT - V

7 a) Mention the objectives of contract. List the requirements for a valid contract. **10**

b) Discuss in detail about breach of contract and arbitration. **10**

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