U.S.N.										

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

Branch: Civil Engineering **Duration: 3 hrs.**

Course Code: 22CV7PCQSE **Max Marks: 100**

Course: Quantity Surveying and Estimation

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

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	*CO*	*PO*	Marks
1	a)		Define Contract and discuss the objectives of contract.	*CO1*	*PO1*	**06**
	b)		Prepare a rough-cost estimate of a residential building project with a total plinth area of the building - 210 Sqm. Given that: Plinth Area Rate = ₹ 12,000.00 / Sqm Extra for special architectural treatment = 2% Extra for water supply and sanitary installations = 10% Extra for internal installations = 10% Extra for Electric & gas services = 10% Contingencies 3% Supervision charges = 8% Design charges = 3%	*CO1*	*PO3*	**08**
	c)		Discuss detailed method of estimation	*CO1*	*PO1*	**06**
			OR			
2	a)		Discuss the importance of accurately preparing tender documents.	*CO1*	*PO1*	**08**
	b)		Discuss various methods of estimation	*CO1*	*PO1*	**04**
	c)		Prepare a rough-cost estimate of a residential building project with a total plinth area of the building - 190 Sqm. Given that: Plinth Area Rate = ₹ 15,000.00 / Sqm Extra for special architectural treatment = 1.5% Extra for water supply and sanitary installations = 8% Extra for internal installations = 12% Extra for Electric & gas services = 8% Contingencies 3% Supervision charges = 8% Design charges = 2%	*CO1*	*PO3*	**08**

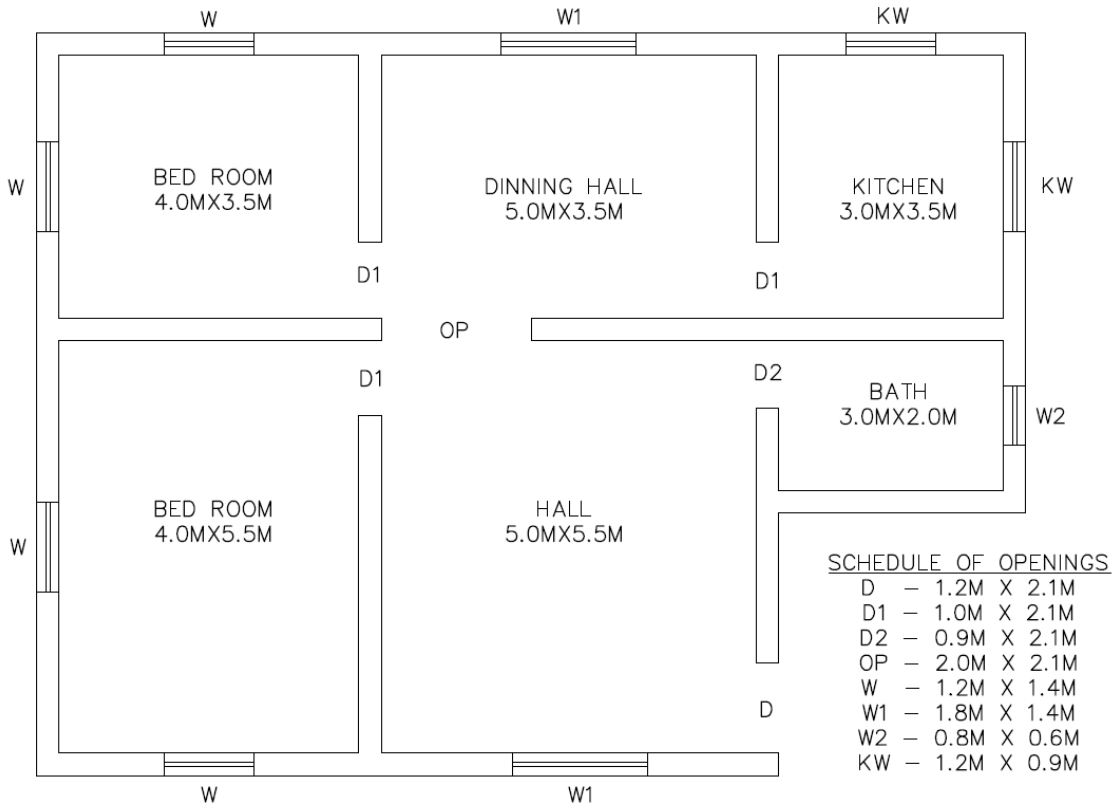
B.M.S.C.E. – EVEN SEM 2024-25

			UNIT - II			
	3		The accompanying **figure-1** shows the details of a residential building. Estimate the quantities by centre line method and cost of the following items of works. a) Earthwork excavation for foundation in soft soil at a rate of Rs. 350.00/Cum b) Size stone masonry in footings and plinth with CM 1:8 at a rate of Rs. 4200.00/Cum c) Internal Plastering of walls in CM 1:6, 12mm thick at a rate of Rs. 550.00/Sqm	*CO1*	*PO3*	**20**
			OR			
	4	a)	Discuss various methods of taking out quantities.	*CO1*	*PO1*	**08**
		b)	Prepare a detailed estimate of a RCC slab of 2.5m clear span and 6m long from the given **figure-2**. RCC work including centering and shuttering to cost @ Rs. 5000/Cum and steel reinforcement in detail @ Rs. 70/kg shall be calculated separately.	*CO1*	*PO3*	**12**
			UNIT - III			
	5		Estimate the quantities of all the items of work for the septic tank shown in the **figure-3.** d) Earthwork excavation for foundation @ Rs. 400.00/Cum e) CC 1:2:4 in floor and foundation @ Rs. 4000.00/Cum f) Burnt brick masony @ Rs. 5500.00/Cum g) RCC work 1:2:4 in roof cover slab including steel @ Rs. 5500/Cum h) Plastering 12mm thick in CM 1:4 with water proof material @ Rs. 550/Sqm i) Cement Plastering 20mm thick @ Rs. 600/Sqm j) Iron footsteps @ Rs. 150/No k) 50mm dia C.I. Ventilating pipe @ Rs. 200/m l) 50mm dia C.I. cowl at top of ventilating pipe @ Rs. 150/No	*CO1*	*PO3*	**20**
			OR			
	6		Prepare a detailed estimate of a steel truss for the given drawing **(Figure-4)**. The effective span of the truss is 8m. All steel works shall be painted with two coats of paint @ 400/- per sqm. All gusset plates are 10mm thick. Consider rate of steel @ 65/kg.	*CO1*	*PO3*	**20**
			UNIT - IV			
	7	a)	List and discuss various methods of earthwork estimation	*CO2*	*PO1*	**10**

B.M.S.C.E. – EVEN SEM 2024-25

		b)	Estimate the cost of earthwork for a portion of the road from the following data. The formation width of the road is 12m. Side slopes are 2:1 in filling and 1.5:1 in cutting. Compute volume by Mean area method. **Distance** 100 130 160 190 220 250 280 310 **G. L.** 357.3 357.1 356.7 356.3 356.0 356.1 356.8 357.5 **F. L.** ← Upgradient of 1 in 100 → 358	*CO2*	*PO3*	**10**
			OR			
	8	a)	Workout the quantity of earthwork for a portion of the road for the following details by mid sectional area method. Formation width of road is 9m. Side slope 2:1 in filling and 1.5:1 in cutting. **Distance** 0 30 60 90 120 150 180 **G. L.** 129.5 129.0 128.95 128.5 127.8 127.6 127.2 **F. L.** 128.700 Flat	*CO2*	*PO3*	**10**
		b)	Estimate the cost of earthwork for a portion of the road from the following data. The formation width of the road is 10m. Side slopes are 2:1 in filling and 1.5:1 in cutting. Compute volume by Prismodal formula method. **Distance** 150 180 210 240 270 300 330 360 **G. L.** 198.5 199.5 200 200.2 200.9 201.5 201.6 202.7 **F. L.** 199.0 ← Upgradient of 1 in 50 →	*CO2*	*PO3*	**10**
			UNIT - V			
	9	a)	Discuss detailed specifications required for earthwork excavation in the foundation.	*CO3*	*PO2*	**10**
		b)	Workout from first principles, the rate analysis for Burnt Brick Masonry in cement mortar 1:3	*CO3*	*PO2*	**10**
			OR			
	10	a)	Discuss detailed specifications required for brickwork (Class-1) in CM 1:6.	*CO3*	*PO2*	**10**
		b)	Workout from first principles, the rate analysis for Random Rubble Stone Masonry in cement mortar 1:6. Consider rate of cement – Rs. 400.00/bag and sand – Rs. 1500.00/cum.	*CO3*	*PO2*	**10**

B.M.S.C.E. - EVEN SEM 2024-25


W
W1
KW
BED ROOM
4.0MX3.5M
DINNING HALL
5.0MX3.5M
KITCHEN
3.0MX3.5M
D1
D1
OP
D1
D2
BATH
3.0MX2.0M
W2
BED ROOM
4.0MX5.5M
HALL
5.0MX5.5M
D
W
W1
SCHEDULE OF OPENINGS
D – 1.2M X 2.1M
D1 – 1.0M X 2.1M
D2 – 0.9M X 2.1M
OP – 2.0M X 2.1M
W – 1.2M X 1.4M
W1 – 1.8M X 1.4M
W2 – 0.8M X 0.6M
KW – 1.2M X 0.9M

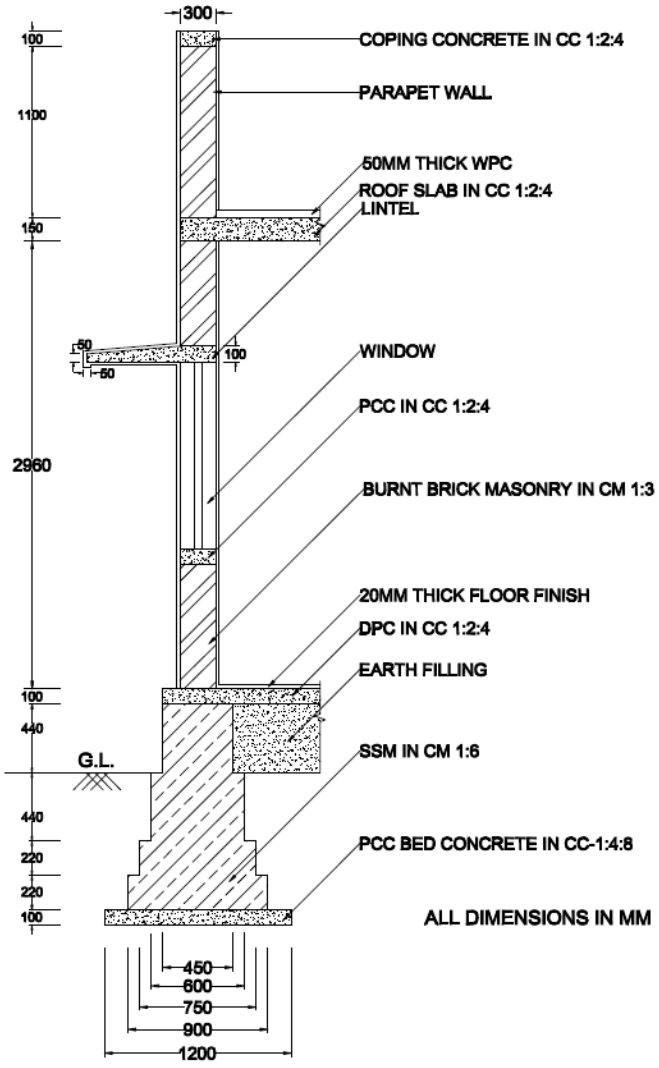

300
100
1100
150
50
50
100
2960
100
440
440
220
220
100
G.L.
450
600
750
900
1200
COPING CONCRETE IN CC 1:2:4
PARAPET WALL
50MM THICK WPC
ROOF SLAB IN CC 1:2:4
LINTEL
WINDOW
PCC IN CC 1:2:4
BURNT BRICK MASONRY IN CM 1:3
20MM THICK FLOOR FINISH
DPC IN CC 1:2:4
EARTH FILLING
SSM IN CM 1:6
PCC BED CONCRETE IN CC-1:4:8
ALL DIMENSIONS IN MM

Figure - 1

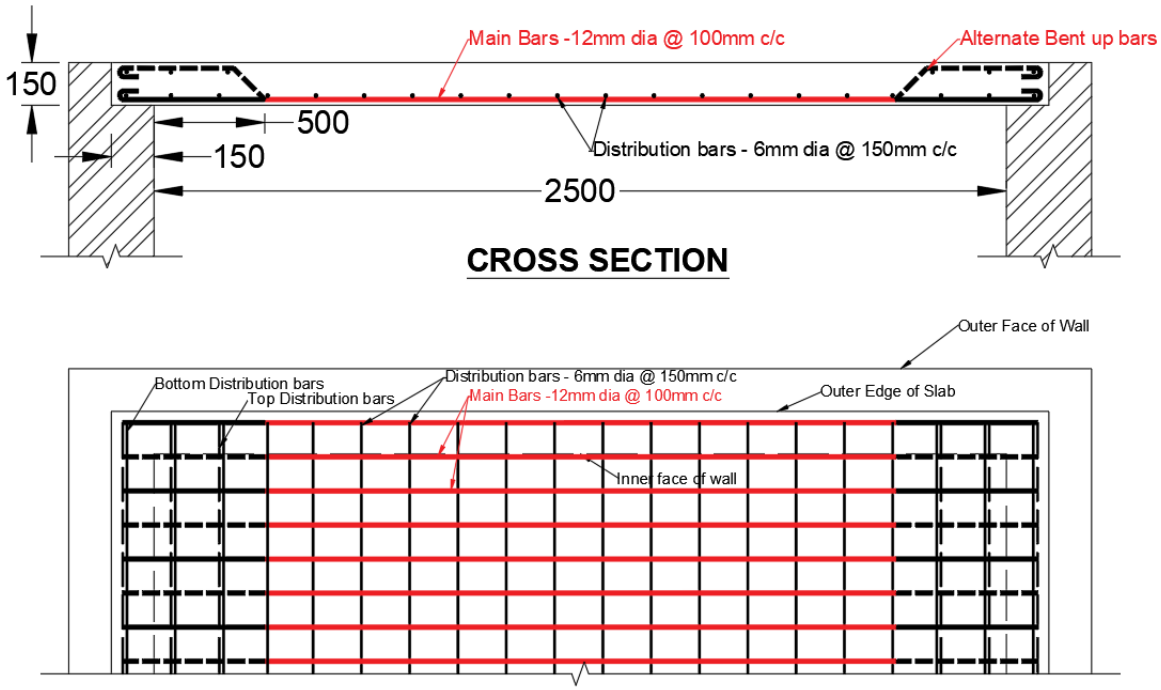
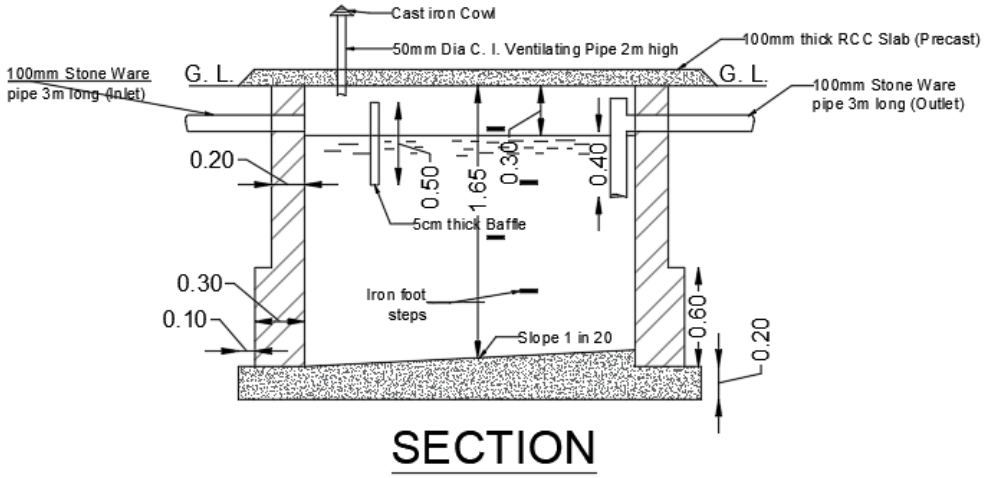


Figure – 2



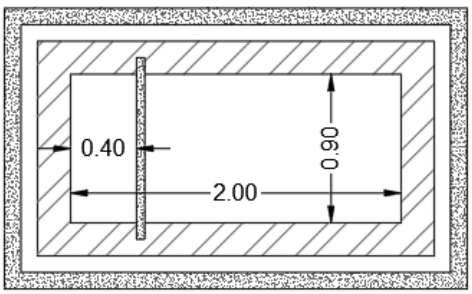


Figure – 3

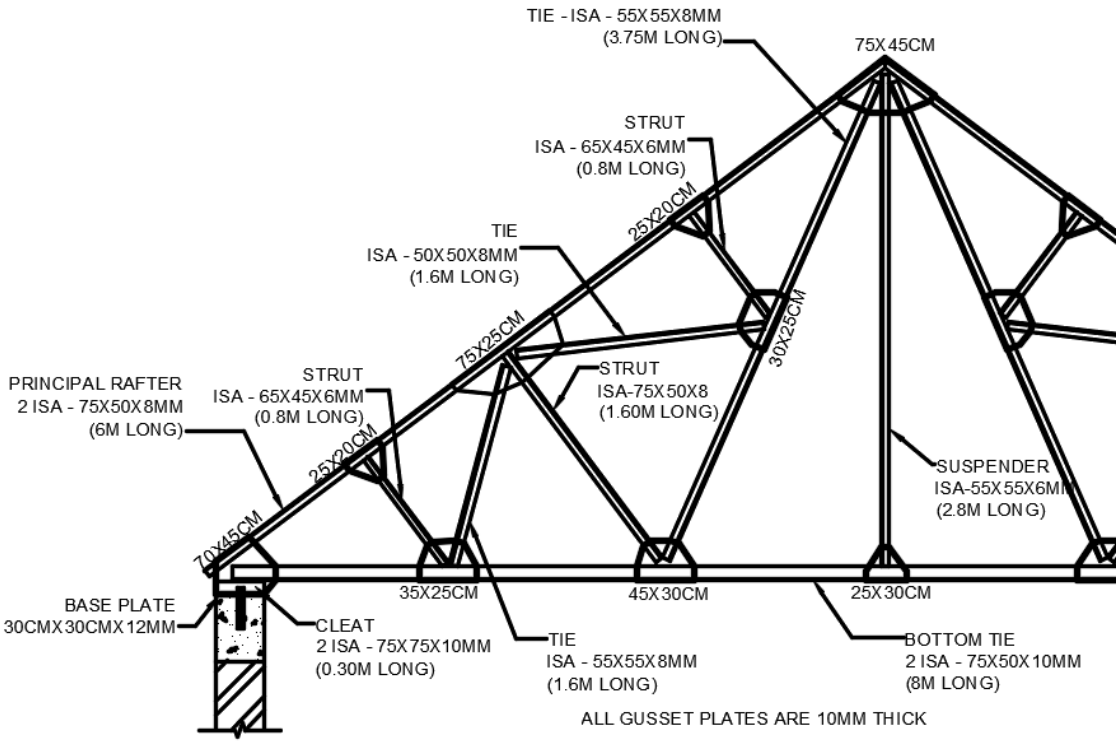


Figure – 4

******

B.M.S.C.E. – EVEN SEM