Seat No: ..... **Enrollment No: .....**

PARUL UNIVERSITY
FACULTY OF ARCHITECTURE AND PLANNING
B. Arch., Winter 2025 Examination

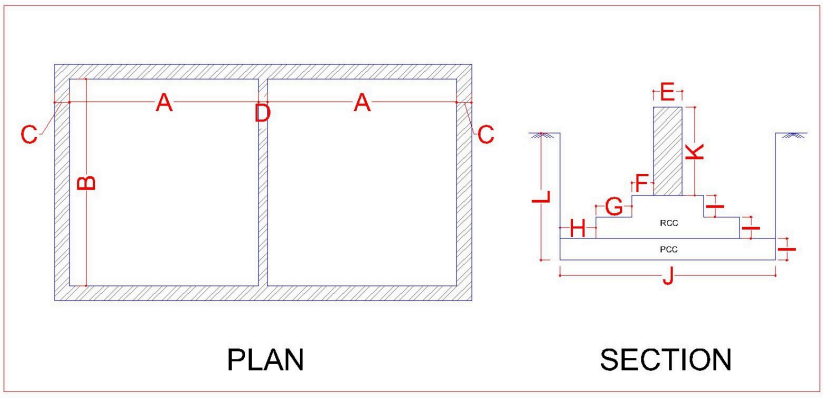
Semester: VI **Date: 06-10-2025**
Subject Code: 01101352 **Time: 10:00 AM To 01:00 PM**
Subject Name: Estimating, Costing & Specifications **Total Marks: 50**

Instructions:

1. Write answers for both sections in their respective answer sheets.
2. All questions are compulsory.
3. Figures to the right indicate full marks
4. Make suitable assumptions whenever necessary.
5. Draw suitable sketches wherever required.

SECTION - A (25Marks)

		Marks	CO	BT
Q1.	**Answer any FIVE out of SIX (6 Questions - 1 Mark Each)**	**(05)**		
A.	State any one purpose of rate analysis.	1	CO1, CO2	BT2
B.	What are labor charges in construction estimation?	1	CO1, CO2	BT2
C.	What is meant by a lump sum estimate?	1	CO1, CO2	BT2
D.	What is reinforcement estimation?	1	CO1, CO2	BT1
E.	A water sump has dimensions of 4m × 3m × 2.5m. Calculate its volume.	1	CO4	BT3
F.	If 1 cubic meter of concrete requires 350 kg of cement, find the total cement required for 8 cubic meters.	1	CO1, CO2, CO3	BT5
Q2.	**ALL COMPULSORY (5 Questions – 2 Marks Each)**	**(10)**		
A.	What is meant by the BOQ?	2	CO1, CO2	BT2
B.	Why is a contingency cost included in estimation?	2	CO1, CO2	BT2
C.	What are the ethical considerations in cost estimation?	2	CO1, CO2, CO3	BT2
D.	How does the availability of raw materials affect cost estimation?	2	CO1, CO2,	BT2

			CO3	
E.	How do government policies influence construction costs?	2	CO1, CO2, CO3	BT2
Q3.	**Any TWO out of THREE. (3 Questions – 5 Marks Each)**	**(10)**		
A.	Explain the term Prime Cost, its purposes, Key Components of it. Also frame an example for explaining the concept.	5	CO1, CO4	BT2
B.	A glass partition is to be installed in an office space of size 3m × 2.5m using toughened glass panels of size 1.5m × 1.2m. Cost of one glass panel = ₹2,000, 5% extra glass required for wastage, Fitting accessories cost = ₹500 per panel, Labor charges = ₹400 per panel. a.Calculate the total glass area required. b. Determine the number of glass panels needed, including wastage. c. Compute the total cost of glass panels used. d. Find the total cost of fitting accessories. e. Determine the total labor cost for installation.	5	CO1	BT3
C.	Estimate the quantities of following items of a two roomed building given in the figure: a. Calculate the entire center line. b. Calculate the earthwork in excavation in the foundation trench. c. PCC in foundation. d. RCC footing. e. 1st class brickwork in cement mortar in the brickwall. The following are the dimensions of the measurements: A = 5.9M, B = 4.8M, C = 0.23M, D = 0.15M, E = 0.40M, F = 0.38M, G = 0.46M, H = 0.42M, I = 0.35M, J =[2x(F+G+H) + E], K = 1.4M, L = 1.8M.  	5	CO1	BT3

SECTION - B (25Marks)

		Marks	**CO**	**BT**
Q1.	**All COMPULSORY (3 Questions - 2 Mark Each)**	**(06)**		
A.	How do different building material quality impact cost estimation?	2	CO1, CO2, CO3	BT2
B.	What is the role of a consultant in estimation?	2	CO1, CO2	BT2

C.	What is the relation between plinth area and carpet area in a building? Also, if the plinth area of a house is 120m² and carpet area is 85% of the plinth area, calculate the carpet area.	2	CO1, CO2, CO3	BT3
Q2.	**ANY THREE out of FOUR (4 Questions – 3 Marks Each)**	**(09)**		
A.	Explain the difference between provisional and prime cost.	3	CO1	BT2
B.	What is the difference between fixed and variable costs in estimation?	3	CO1	BT2
C.	How does project complexity affect the estimation process?	3	CO3	BT2
D.	A four-lane highway is being constructed over 30 km. If the cost per km is ₹45 crores, calculate the total highway cost including 8% for toll infrastructure.	3	CO4	BT3
Q3.	**Any TWO out of THREE. (3 Questions – 5 Marks Each)**	**(10)**		
A.	List and describe the essential data required to prepare an estimate. Why is each of them important?	5	CO1	BT2
B.	A bedroom of size 4m × 3.5m × 3m (Length × Width × Height) requires painting on all four walls and the ceiling. Paint coverage per liter per coat = 8m² Two coats of paint required Labor cost for painting = ₹15 per square meter per coat Cost of paint per liter = ₹250 a. Calculate the total paintable area (in m²), considering all four walls and the ceiling. b. Determine the total amount of paint required for two coats. c. Calculate the total cost of paint required. d. Compute the total labor cost for painting. e. Explain why labor cost is an important factor in painting estimation.	5	CO1	BT3
C.	A hall of size 10m × 6m requires LED ceiling lights. Each light covers 4m² of area. Cost of one LED light = ₹800, Wiring and switch cost per light = ₹300, Installation charges per light = ₹200. a. Calculate the total number of LED lights required. b. Determine the total cost of LED lights. c. Compute the total wiring and switch cost. d. Find the total installation cost. e.Determine the total cost of lighting installation.	5	CO1	BT3