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

PARUL UNIVERSITY
FACULTY OF ARCHITECTURE AND PLANNING
D. Arch, Winter 2025-26 Examination

Semester: IV **Date: 06-10-2025**
Subject Code: 01601252 **Time: 2:00pm to 4:00pm**
Subject Name: Building Construction - IV **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.	True or False: Pile foundations are suitable for areas with weak soil at the surface.	1	CO1, CO2, CO3	BT3
B.	True or False: Pile foundations are suitable for areas with high water tables.	1	CO1, CO2, CO3	BT1
C.	Mild steel contains a low percentage of _____. (A) Carbon (B) Silicon (C) Aluminum (D) Magnesium	1	CO1, CO2, CO3	BT1
D.	Which rolled steel section is best suited for horizontal load-bearing applications? (a) I-Beam (b) L-Angle (c) Channel (d) Flat Bar	1	CO1, CO2, CO3	BT1
E.	True or False: Raft foundations are mainly used for small houses and sheds.	1	CO1, CO2, CO3	BT2
F.	Which type of soil has the least bearing capacity? (a) Rock (b) Clay (c) Sand (d) Gravel	1	CO1, CO2, CO3	BT1
Q2.	**ALL COMPULSORY (5 Questions – 2 Marks Each)**	**(10)**		
A.	Why is fireproofing important for structural steel? Give three reasons.	2	CO1, CO2, CO3	BT1
B.	What are the safety considerations while joining steel sections?	2	CO1, CO2, CO3	BT3
C.	Differentiate between natural and artificial foundations.	2	CO1, CO2, CO3	BT1

D.	Explain isolated footings.	2	CO1, CO2, CO3	BT1
E.	Give three reasons why structural steel is used in bridges.	2	CO1, CO2, CO3	BT1
Q3.	**Any TWO out of THREE. (3 Questions – 5 Marks Each)**	**(10)**		
A.	Explain the different types of rolled steel sections used in construction.	5	CO1, CO2, CO3	BT2
B.	Discuss the consequences of inadequate footing design.	5	CO1, CO2, CO3	BT2
C.	What are the different types of column bases used in steel structures?	5	CO1, CO2, CO3	BT5
SECTION - B (25Marks)				
		Marks	**CO**	**BT**
Q1.	**All COMPULSORY (3 Questions - 2 Mark Each)**	**(06)**		
A.	Mention three types of bracing systems used in high-rise buildings.	2	CO1, CO2, CO3	BT4
B.	How are modern materials helping in reducing construction time?	2	CO1, CO2, CO3	BT4
C.	Describe the process of constructing a reinforced concrete footing.	2	CO1, CO2, CO3	BT3
Q2.	**ANY THREE out of FOUR (4 Questions – 3 Marks Each)**	**(09)**		
A.	What are the advantages of bolted beam-to-beam connections?	3	CO1, CO2, CO3	BT2
B.	What are the main advantages of using built-up beams over standard rolled steel sections?	3	CO1, CO2, CO3	BT2
C.	Mention six important uses of Fiberglass in modern architecture.	3	CO1, CO2, CO3	BT1
D.	What is a pile footing, and where is it commonly used?	3	CO1, CO2, CO3	BT2
Q3.	**Any TWO out of THREE. (3 Questions – 5 Marks Each)**	**(10)**		
A.	Explain the failure modes observed in beam-to-column connections.	5	CO1, CO2, CO3	BT4
B.	Explain the failure modes of laced and battened columns.	5	CO1, CO2, CO3	BT2

C.	What are the architectural Applys of glass in contemporary buildings?	5	CO1, CO2, CO3	BT3