

GUJARAT TECHNOLOGICAL UNIVERSITY**B.Arch- SEMESTER-VI EXAMINATION – SUMMER 2025****Subject Code:2X65004****Date:14-05-2025****Subject Name: Structure - V****Time:10:30 AM TO 12:30 PM****Total Marks:50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.
5. IS:456, IS:1893, IS13920 AND IS 875 Permitted.

		Marks
Q.1	(a) Write down the Load Combination consider as per IS 1893.	05
	(b) What are the Four Virtues of Earthquake Resistant Buildings?	05
Q.2	(a) Write the short note on Wind Load.	05
	(b) Explain the Stiffness and Ductility.	05
OR		
	(b) Which things we have to keep in mind during Preparing structural Layout.	05
Q.3	(a) Why Orientation of Column in Important?	05
	(b) Explain the various Components of Retaining wall with sketch.	05
OR		
Q.3	(a) Write the short note on Dead Load.	05
	(b) What is Retaining wall? Enlist the various Types of Retaining Wall.	05
Q.4	(a) Fix the basic Preliminary Dimensions of various components including Stem of a Cantilever Retaining Wall to retain the Earth of Height 6 m above lower Ground Level and carry out Stability Checks. Take SBC of soil = 210 kN/m ² , $\phi = 30^{\circ}$, $\mu = 0.5$, Unit weight of soil = 15 kN /m ³ . Use M20 Grade of Concrete and Fe-415 Grade of Steel.	05
	(b) Explain the Function of Foundation.	05
OR		
Q.4	(a) What is a Foundation? Explain the various factored which affect the foundation.	05
	(b) Explain the terms Flexural Cracks and Shear Cracks.	05
Q.5	(a) Explain Ductile Detailing of a Column as per IS 13920 -2016.	05
	(b) What is the function of Main Longitudinal Bars and Stirrups in a Beam?	05
OR		
Q.5	(a) Explain Repair and Retrofitting.	05
	(b) What are the Causes and Effects of Liquefaction?	05
