

GUJARAT TECHNOLOGICAL UNIVERSITY

BE(MINOR)- SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:N114AU02

Date:05-06-2025

Subject Name:Construction Failures

Time:10:30 AM TO 01:00 PM

Total Marks:70

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.**

		MARKS
Q.1	(a) Define Construction Failures	03
	(b) Enlist the various workmanship mistakes that leads to distress in structures.	04
	(c) Classify the defects and explain each in short.	07
Q.2	(a) Describe the types of damages observed in structural members.	03
	(b) Differentiate between the following deterioration factors: (a) Weathering factors (b) Stress factors	04
	(c) Explain the holistic model of deterioration in concrete structures with the help of a flow chart.	07
	OR	
	(c) Give a detailed classification of cracking in concrete structures.	07
Q.3	(a) Enlist the different types of foundation failures.	03
	(b) Discuss the statement “Not all failures are catastrophic in nature and consequences”.	04
	(c) Elaborate on the types of damages observed in the masonry structures. Support your answer with neat sketches.	07
	OR	
Q.3	(a) Differentiate between the Active crack and the Passive crack.	03
	(b) Enlist the different categories of the Design Errors.	04
	(c) Explain any Case study of Construction failure in recent years across the globe.	07
Q.4	(a) Explain the various causes of following distress: (a) Distress due to natural calamities (b) Distress due to Material	03
	(b) Explain the importance of quality control in construction.	04
	(c) Describe with neat figures Cracks observed in RCC members such as Beam, Column. State its characteristics.	07
	OR	
Q.4	(a) Define the following terms: (a) Error (b)RCC frame	03
	(b) Discuss the statement “Water is the most significant catalyst for deterioration”.	04
	(c) Draw the similarity between Human body-Medical checkup and Health assessment of deteriorated structures.	07

- Q.5** (a) Explain the following terms: (a) Plastic Shrinkage (b) Spalling of concrete **03**
(b) Explain how the corrosion reduces the load carrying capacity of RCC **04**
members.
(c) Define Maintenance and explain various categories of maintenance. **07**

OR

- Q.5** (a) Enlist different types of chemical attack observed in concrete structures. **03**
(b) Identify the various measures that should be taken as a part of Maintenance **04**
of concrete and masonry structures.
(c) Describe the major learnings from any of the famous case study of **07**
construction failure.
