

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII EXAMINATION – SUMMER 2025****Subject Code:3172117****Date:16-05-2025****Subject Name:Industrial Corrosion, Testing, Prevention and Control****Time:02:30 PM TO 05:00 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 corrosion. Enlist different methods of corrosion prevention.	03
	(b) Briefly discuss different losses due to corrosion.	04
	(c) Explain role of material selection to combat corrosion in Automobiles.	07
Q.2	(a) Write a short note on dezincification.	03
	(b) Explain the difference between corrosion protection by noble coating and active coating.	04
	(c) Describe the causes of possible corrosion failure of marine diesel engine oil cooler. Suggest preventive measures.	07
OR		
	(c) Marine component stud and mooring fails in Corrosive environment. Identify the type of corrosion, possible Causes and suggest remedies.	07
Q.3	(a) Which type of corrosion is possible in heat recovery steam generator of a power plant? Justify answer.	03
	(b) Discuss mechanism of corrosion in above Q.3(a). Suggest remedies.	04
	(c) Coal base thermal power plant heat exchanger working at high velocity of fluids. Identify & justify possible corrosion. Suggest remedial measures.	07
OR		
Q.3	(a) Identify possible corrosion related failures in a car body.	03
	(b) Suggest remedies for corrosion related failures in a car body.	04
	(c) Write a note on corrosive environment in Power industries. Suggest some candidate materials.	07
Q.4	(a) Describe causes of Stress corrosion cracking in elbow steel pipe.	03
	(b) Explain mechanism of corrosion in above Q. 4 (a). Suggest remedies.	04
	(c) Describe the electroplating method. Discuss factors affecting electroplating.	07
OR		
Q.4	(a) “Corrosion is a natural phenomenon.” Comment.	03
	(b) Explain anodic protection method to combat corrosion.	04
	(c) Corrosion failure occurs in a 316 SS drain pipe line in a refinery. Identify the Corrosion and its causes. Suggest remedial measures.	07
Q.5	(a) Describe the importance of pitting resistance equivalent number.	03
	(b) Explain cathodic protection method to combat corrosion.	04
	(c) Describe the causes of corrosion in underground section of cooling water pipeline in fertilizer plant. Suggest some preventive measures.	07
OR		
Q.5	(a) Heat exchanger tube fails in a fertilizer plant due to corrosion damage. Identify the possible corrosion and causes.	03
	(b) Explain mechanism of corrosion in above Q. 5 (a). Suggest remedies.	04
	(c) Describe the corrosion resistance materials, can be used in Infrastructure.	07
