

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2182112****Date: 19/11/2018****Subject Name: Industrial Corrosion, Testing, Prevention & 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.

		MARKS
Q.1	(a) Enlist different methods of corrosion prevention.	03
	(b) Define corrosion. List the types of corrosion.	04
	(c) Discuss the importance of corrosion study based on economic aspects.	07
Q.2	(a) What is e.m.f. series? Discuss its applicability in corrosion studies.	03
	(b) Multiple Choice Questions:	04
	1) Which of the following is not an example of physical protection?	
	a. Greasing	
	b. Painting	
	c. Galvanizing	
	d. Attaching the metal to the negative terminal of a battery	
	2) Passivity is due to	
	a. Higher EMF	
	b. Lower EMF	
c. Oxide film		
d. All of the above		
3) Corrosion is a chemical reaction that involves		
a. The inside of the object changing from an element to a compound		
b. The surface of the object changing from an element to another element		
c. The inside of the object changing from an element to another element		
d. The surface of the object changing from an element to a compound		
4) Which of the following metals would protect iron by electrons flowing to the iron,		
a. Silver		
b. Magnesium		
c. Tin		
d. Copper		
(c) Discuss the type of corrosion that occurs in riveted vessel. Explain protection technique against it.	07	
OR		
(c) Discuss stress corrosion cracking.	07	

Q.3	(a)	List out different types of corrosion that occur in petrochemical industries.	03
	(b)	Explain the failures due to embrittlement in boiler tubes along with the remedial measures.	04
	(c)	Describe the corrosion resistant materials that can be used in power industries.	07
OR			
Q.3	(a)	Write briefly about corrosion resistant materials for petrochemical industries.	03
	(b)	Discuss corrosive environment in fertilizer industries.	04
	(c)	Discuss one corrosion related failure in petrochemical industries and suggest remedies.	07
Q.4	(a)	List out different corrosion that take place in ship building industries.	03
	(b)	Write briefly about corrosion resistant materials for automobile industries.	04
	(c)	Discuss case study on fertilizer industries.	07
OR			
Q.4	(a)	Which types of corrosion frequently occur in automobile industries?	03
	(b)	Explain how material selection is helpful to combat corrosion in petrochemical industries.	04
	(c)	Discuss case study on failures in ship building industries and suggest remedies.	07
Q.5	(a)	List out different types of corrosion that occur in marine industries.	03
	(b)	Discuss the effect of water quality on corrosion rate in thermal power plants.	04
	(c)	Explain how material selection is helpful to combat corrosion in fertilizer industries.	07
OR			
Q.5	(a)	Discuss corrosion resistant materials for marine industries.	03
	(b)	Explain sacrificial anode method.	04
	(c)	Identify corrosion related failures in a gas engine and suggest remedies.	07
