

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III (New) EXAMINATION – WINTER 2015

Subject Code:2132101**Date:18/12/2015****Subject Name: Elements of Metallurgy****Time: 2:30pm to 5:00pm****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	Short Questions	14
	1 Define Hardness.	
	2 Example of Point defects are	
	3 Define Ceramics.	
	4 Dislocation is	
	5 Polymers are	
	6 Define Forging.	
	7 Define Corrosion.	
	8 Define Wear.	
	9 Soldering is	
	10 Define Brazing.	
	11 In a composite role of matrix is	
	12 In a composite role of reinforcement is	
	13 Define Fatigue strength.	
	14 Example of three dimensional defects are	
Q.2	(a) Differentiate between Edge and Screw dislocation.	03
	(b) Give the Criteria for selection of materials for engineering applications.	04
	(c) Briefly explain structure property relationship between Metals, Ceramics and Polymers.	07
	OR	
	(c) What is deformation? Differentiate in elastic and plastic deformation.	07
Q.3	(a) Suggest methods to minimize Wear.	03
	(b) Discuss causes of wear.	04
	(c) Describe properties and applications of metal matrix composites.	07
	OR	
Q.3	(a) Enlist important Properties of Ceramics.	03
	(b) Give a detailed Classification of Composites.	04
	(c) Describe properties and applications of Refractories.	07
Q.4	(a) Write a note on Rolling.	03
	(b) Discuss Classification of polymers.	04
	(c) Explain Polymerization mechanisms.	07

OR

- Q.4** (a) Enlist different copper and aluminium industries in India with their location. **03**
(b) Discuss electrochemical Principle of Corrosion. **04**
(c) Explain basic outline of the principles of production of iron and steel. **07**
- Q.5** (a) Explain weight loss method for Corrosion Testing. **03**
(b) Enlist different method of Corrosion Protection and explain any one. **04**
(c) Explain any one Welding process in detail. **07**
- OR**
- Q.5** (a) Write note on tube drawing. **03**
(b) Describe advantages of Powder metallurgy. **04**
(c) Define casting. Explain any one casting method. **07**
