Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) EXAMINATION – SUMMER 2016

Subject Code:2132101 **Date:27/05/2016**

Subject Name:Elements of Metallurgy

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Define Metallurgy.	
	2	Define Toughness.	
	3	What are point defects?	
	4	Define Hardness.	
	5	Define corrosion.	
	6	What are composites?	
	7	Define Creep.	
	8	Define Ductility.	
	9	Define impact strength.	
	10	Define tensile strength.	
	11	Define Forging.	
	12	What are polymers?	
	13	Define refractories.	
	14	When a metal returns to its original shape after an applied load has been removed, the metal is said to have_____.	
Q.2	**(a)**	Give the classification of Engineering Materials.	**03**
	(b)	Explain different area defects in crystals.	**04**
	(c)	Briefly explain structure property relationship between Metals, Ceramics and Polymers.	**07**
		OR	
	(c)	Explain the Elastic & plastic Deformation of metallic materials.	**07**
Q.3	**(a)**	Write the properties of Ceramics.	**03**
	(b)	Write a short note on cement and cement products.	**04**
	(c)	Give the classification of ceramics. Describe structure of ceramics.	**07**
		OR	
Q.3	**(a)**	Define wear. Discuss the causes of Wear.	**03**
	(b)	Write a note on different rolling mills.	**04**
	(c)	Give the classification of composites. Describe about metal matrix composites.	**07**
Q.4	**(a)**	Enlist corrosion Prevention Methods.	**03**
	(b)	Write a short note on Polymer structures.	**04**
	(c)	Give the classification of polymers. Explain Polymerization mechanisms.	**07**
		OR	
Q.4	**(a)**	Differentiate in wet and dry corrosion.	**03**

	(b)	Explain the principle of production of steel.	**04**
	(c)	Describe status of metallurgical and materials industry in India.	**07**
Q.5	**(a)**	Explain the Wire drawing methods.	**03**
	(b)	Give the advantages & limitations of powder metallurgy.	**04**
	(c)	What is Foundry? Explain different steps required in foundry practice.	**07**

OR

Q.5	**(a)**	Discuss the tube drawing methods.	**03**
	(b)	Explain weight loss method for corrosion rate.	**04**
	(c)	Explain any one welding method.	**07**

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