

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (New) EXAMINATION – WINTER 2018****Subject Code:2132101****Date:28/11/2018****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*	(a) Define Hardness, Resilience, Toughness.	03
	(b) Give classification of Engineering materials with examples.	04
	(c) What is ceramic? Write a note on Structure of ceramics.	07
Q.2	(a) Differentiate between Ductility and Malleability.	03
	(b) Draw flow diagram of Aluminum extraction	04
	(c) Give the classification of composites. Describe about MMC.	07
	<b>OR</b>	
	(c) Discuss structure and property relation with suitable examples.	07
Q.3	(a) List out different Metallurgical Industries in India.	03
	(b) What is Refractory? List the properties of Refractory.	04
	(c) What is polymer? What is polymerization. List out different polymerization mechanism. Explain one of it.	07
	<b>OR</b>	
Q.3	(a) Explain Extrusion with neat diagram.	03
	(b) Draw flow diagram of extraction of copper.	04
	(c) What is imperfection in solids? Discuss different crystals imperfections in brief	07
Q.4	(a) Explain Forging in brief.	03
	(b) Write a note on Wire drawing.	04
	(c) What is Rolling. Explain various types of rolling mills.	07
	<b>OR</b>	
Q.4	(a) Differentiate between soldering and brazing.	03
	(b) Differentiate between hot working and cold working.	04
	(c) What do you mean by metal joining? List out techniques of metal joining. Explain any one welding method.	07
Q.5	(a) List out different types of Corrosion.	03
	(b) Discuss different steps required in foundry practice.	04
	(c) What do you mean by powder metallurgy? Discuss advantages and limitations of powder metallurgy.	07
	<b>OR</b>	
Q.5	(a) Define Corrosion. List out Corrosion prevention methods.	03
	(b) Give classification of Metal manufacturing Processes	04
	(c) Explain the Criteria for selection of materials for Engineering applications	07