

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

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

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019**

**Subject Code:2143903**

**Date:17/05/2019**

**Subject Name: Elements of Material Science**

**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
<b>Q.1</b>	(a) Define: Thermal Shock	<b>03</b>
	(b) Explain: Elastic deformation	<b>04</b>
	(c) Explain CMR with its applications	<b>07</b>
<b>Q.2</b>	(a) Give few example of Ferro electrical material with its applications.	<b>03</b>
	(b) Explain Plastic deformation.	<b>04</b>
	(c) Explain GMR with its applications.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(c) Explain doping effect on structural and mechanical properties of steel.	<b>07</b>
	(a) Write name of four legs of structure, properties, and performance of materials.	<b>03</b>
	(b) Define: Dielectric Dispersion, Dielectric Loss	<b>04</b>
	(c) Write a short note of thermal conductivity	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) What is true stress	<b>03</b>
	(b) Draw the various composite associated with metal matrix + metal	<b>04</b>
	(c) Write down various application associated with Piezoelectric Materials.	<b>07</b>
<b>Q.4</b>	(a) Define :Absorption of light	<b>03</b>
	(b) Describe various applications associated with OLED.	<b>04</b>
	(c) Write sort note on organic light-emitting diode.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) What do mean by Luminescence	<b>03</b>
	(b) Differentiate : ferromagnetism and ferrimagnetism	<b>04</b>
	(c) Write-down various applications associated with superconductivity.	<b>07</b>
<b>Q.5</b>	(a) Define: Ferrites	<b>03</b>
	(b) Differentiate : Reflection and refraction	<b>04</b>
	(c) Write a short note on Photoconductivity	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) What do you mean by Composite Material?	<b>03</b>
	(b) Differentiate: Magnetization and Magnetic permeability	<b>04</b>
	(c) Write a short note of Biocompatibility and materials associated with it.	<b>07</b>

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