

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