

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:2150301****Date:22/01/2021****Subject Name:Biomaterials & Implants****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

Q.1	(a) Define: Hemocompatibility, Sensitivity and Genotoxicity	03
	(b) Write a short Note on: Silicon Rubber	04
	(c) Short Note: Ti & Ti based Alloy	07
Q.2	(a) Explain Characteristics of NITINOL Material.	03
	(b) Write a short note on Contact Lense.	04
	(c) Write a short note on Metallic Corrosion.	07
Q.3	(a) Explain Inferior Venacava Filters.	03
	(b) Explain condensation Polymerization process.	04
	(c) Write a Short note on PMMA.	07
Q.4	(a) Define: Xenograft, Allograft and Autograft	03
	(b) Explain free radical polymerization process.	04
	(c) Explain Polyethylene as Biomaterial with its Properties.	07
Q.5	(a) Give the properties of Nano Biomaterials.	03
	(b) Explain application of Various Composite material.	04
	(c) Describe components of Total Knee Replacement with its material & design consideration.	07
Q.6	(a) What is Biodegradable material? Give the applications of Biodegradable materials.	03
	(b) Enlist the factors responsible for orthopedic implant failure.	04
	(c) Enlist & Explain different types of heart Valves.	07
Q.7	(a) Give the difference between Biological and Artificial biomaterial. Enlist various applications of artificial Biomaterial.	03
	(b) Explain process of Wound dressing.	04
	(c) Give properties of ceramics with its merits and demerits.	07
Q.8	(a) What is Bionic Eye?	03
	(b) Explain cellular activity of bone healing	04
	(c) Explain applications of Calcium Phosphate as Biomaterial.	07
