

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018****Subject Code:2150301****Date:27/11/2018****Subject Name:Biomaterials & Implants****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) Explain Surface Properties of Biomaterials in brief.	03
	(b) Define: 1) Bioresorbable material 2) Biocompatibility	04
	(c) Explain Total Knee Replacement with neat diagram.	07
Q.2	(a) Explain Stainless steel as Biomaterial.	03
	(b) Write a short note on Dental Amalgam.	04
	(c) Explain the types of Cobalt based alloys with its manufacturing process.	07
	OR	
	(c) Define Shape memory effect. Explain Nitinol and their medical applications.	07
Q.3	(a) Write a short note on Inferior vena cava filter.	03
	(b) Describe Tissue grafts and rejection process.	04
	(c) Explain Contact lenses and Intra Ocular Lenses in detail.	07
	OR	
Q.3	(a) Describe Maxillofacial implant.	03
	(b) Write a short note on Artificial Heart valves.	04
	(c) Explain different types of Dental Implants & Impression material.	07
Q.4	(a) Write a short note on Bio-active glass.	03
	(b) Describe Alumina as Ceramic biomaterial.	04
	(c) Explain different methods of Polymeric Synthesis.	07
	OR	
Q.4	(a) Explain drug delivery using polymer gel.	03
	(b) Write a short note on Hydrogels.	04
	(c) Explain different types of Composite Biomaterials.	07
Q.5	(a) Describe allergic foreign body response.	03
	(b) Explain corrosion & wear of Biomaterials.	04
	(c) Explain In Vitro methods for testing & evaluating Biocompatibility.	07
	OR	
Q.5	(a) Define Hemocompatibility and Osteocompatibility.	03
	(b) Explain biological effects of Implants on Human Body.	04
	(c) Explain Cytotoxicity and Hypersensitivity testing of Biomaterials.	07
