

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 150301****Date: 20-05-2013****Subject Name: Biomaterials and Implants****Time: 10.30 am - 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.

- Q.1** (a) Explain Surface Modifications for Improving Biocompatibility. **07**
(b) Give Biomedical Applications of Polymeric Biomaterials **07**

- Q.2** (a) Explain properties of stainless steel alloys for Bio-Implants. **07**
(b) Write a brief note on filling and restorative materials used for Dental application. **07**

OR

- (b) Write a short note on Titanium and Titanium Alloys for Bio-Implants. **07**

- Q.3** (a) Explain Electrochemical aspects of Metallic Implants. **07**
(b) Write a short note on Calcium Phosphate Ceramics-Porous Materials and give their Medical Uses. **07**

OR

- Q.3** (a) Explain Relatively Bioinert Ceramics and also give their uses. **07**
(b) Explain Drug Incorporation Polymer Gels. **07**

- Q.4** (a) Give the applications of Surface reactive ceramics and Explain formation of glass ceramics. **08**
(b) Write a short note on PMMA. **06**

OR

- Q.4** (a) Explain Importance of composite materials in Biomedical field. **06**
(b) Explain Tissue Reaction to External Materials and Blood/Biomaterial Interaction. **08**

- Q.5** (a) Write a short note on Intraocular Lens and contact lens. **07**
(b) Write a short note on Tissue Adhesives. **07**

OR

- Q.5** (a) Write a short note on Mechanical Heart valves prostheses. **07**
(b) Explain Material Selection Criteria and Preclinical Testing. **07**
