

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V • EXAMINATION – WINTER 2013

Subject Code: 150301**Date: 02-12-2013****Subject Name: Biomaterials & 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) What is polymerization? Explain condensation and addition polymerization. **07**
- (b) Give Biomedical Applications of Polymeric Biomaterials **07**
- Q.2** (a) What is shape memory effect? Explain properties and applications of NITINOL. **07**
- (b) Describe different type of biomaterials used in dental implants. **07**
- OR**
- (b) Explain the composites of stainless steel. **07**
- Q.3** (a) Explain Electrochemical aspects of Metallic Implants. **07**
- (b) Give material selection criteria for Biomaterials. **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) Describe glass ceramics with formation & properties of it. **07**
- (b) Write a short note on PMMA. **07**
- OR**
- Q.4** (a) Write a short note on Titanium & Titanium Alloys for Bio-Implants. **07**
- (b) Explain Tissue Reaction to External Materials and Blood/Biomaterial Interaction. **07**
- Q.5** (a) Explain structure and composition of long bone. **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) Write a short note on Biodegradable materials & their applications. **07**
