

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**
