

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013****Subject code: 1723104****Date: 03-06-2013****Subject Name: Advance Biomaterials****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)** Define: **07**
1. Biomaterial
 2. Implant
 3. Glass Transition Temperature
 4. Shape Memory Effect
 5. ðOppenheimer Effectö
 6. Sub periosteal Implant
 7. Hypersensitivity
- (b)** Discuss **any one Body implant** in detail with its Material Consideration & Surgical Procedure for implantation. **07**
- Q.2 (a)** Write a short Note Stainless steel based Implants. **07**
- (b)** Explain Condensation Polymerization and Polyamides. **07**
- OR**
- (b)** Explain Addition or Free Radical method of Polymerization and Polyethylene. **07**
- Q.3 (a)** Write a short note on NITINOL. **07**
- (b)** Write a short note on Glass Ceramics. **07**
- OR**
- Q.3 (a)** Write a short note on Retinal Implants. **07**
- (b)** Write a short Note on Hydroxyapatite. **07**
- Q.4 (a)** Explain Different Component for Designing HIP Prosthesis. **07**
- (b)** Classify different groups of Oral Implants & explain Endosseous tooth Implants. **07**
- OR**
- Q.4 (a)** Explain different Polymers use for Dental application. **07**
- (b)** Discuss different Types of Biomaterial used for Hip Replacement. **07**
- Q.5 (a)** What is BioMEMS? Discuss various Risks & drawback associated with BioMEMS. **07**
- (b)** Explain different sterilization techniques. **07**
- OR**
- Q.5 (a)** Write a short Note on Polypeptides. **07**
- (b)** Explain Muscle Biomechanics. **07**
