Seat No.: \_\_ Enrolment No. GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER - II • EXAMINATION - WINTER • 2014 Subject code: 1723104 Date: 04-12-2014 **Subject Name: Advance Biomaterials** Time: 02:30 pm - 05:00 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** Write a Short Note on HYDROGELS. 07 (a) Write a short note on Materials used for Filling and Restoration in Oral **07 (b)** Implants. Define Biomaterial & Implant. Give the classification of Different Bio **Q.2** (a) **07** Material used in Implants. Short Note: Stainless Steel used as a Biomaterial **07 (b)** Short Note: TI & TI based alloys used as a Biomaterial. 07 (b) Q.3 **07** Write a short note on Glass Ceramics. (a) What is Polymerization? Explain Free Radical Polymerization process in 07 (b) detail. OR Explain Applications of Ceramics in Orthopedic Implantation. Q.3 (a) **07** Short Note: Silicon Rubber used as a Biomaterial. **(b) 07 Q.4** Explain Total Hip Replacement in detail. 07 (a) Explain Magnetization Processes in Ferromagnetic 07 (b) and Ferrimagnetic Materials. OR **Q.4** Short Note: Magnetism & Magnetic Materials. 07 (a) Short Note: Polysaccharides 07 **(b)** Q.5 (a) What is Foreign Body Response? Explain Acute & Chronic inflammation in **07** detail.

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Explain Hypersensitivity and Carcinogenicity of Implants.

What is BioMEMS? Discuss various Risks & drawback associated with

OR

What is the need of Sterilization? Explain various sterilization techniques.

**(b)** 

(a)

(b)

**Q.5** 

BioMEMS.

07

07

07