

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.**

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|------------|------------|---|-----------|
| Q.1 | (a) | Write a Short Note on HYDROGELS. | 07 |
| | (b) | Write a short note on Materials used for Filling and Restoration in Oral Implants. | 07 |
| Q.2 | (a) | Define Biomaterial & Implant. Give the classification of Different Bio Material used in Implants. | 07 |
| | (b) | Short Note: Stainless Steel used as a Biomaterial | 07 |
| | | OR | |
| | (b) | Short Note: TI & TI based alloys used as a Biomaterial. | 07 |
| Q.3 | (a) | Write a short note on Glass Ceramics. | 07 |
| | (b) | What is Polymerization? Explain Free Radical Polymerization process in detail. | 07 |
| | | OR | |
| Q.3 | (a) | Explain Applications of Ceramics in Orthopedic Implantation. | 07 |
| | (b) | Short Note: Silicon Rubber used as a Biomaterial. | 07 |
| Q.4 | (a) | Explain Total Hip Replacement in detail. | 07 |
| | (b) | Explain Magnetization Processes in Ferromagnetic and Ferrimagnetic Materials. | 07 |
| | | OR | |
| Q.4 | (a) | Short Note: Magnetism & Magnetic Materials. | 07 |
| | (b) | Short Note: Polysaccharides | 07 |
| Q.5 | (a) | What is Foreign Body Response? Explain Acute & Chronic inflammation in detail. | 07 |
| | (b) | What is BioMEMS? Discuss various Risks & drawback associated with BioMEMS. | 07 |
| | | OR | |
| Q.5 | (a) | Explain Hypersensitivity and Carcinogenicity of Implants. | 07 |
| | (b) | What is the need of Sterilization? Explain various sterilization techniques. | 07 |
