

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGG.- SEMESTER-VI EXAMINATION – OCTOBER 2012

Subject code: 361703

Date: 29-10-2012

Subject Name: Biomedical Instrumentation

Time: 2:30 pm – 5:00 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) | Define Bio-potential.Explain the theory of bio-potential generation. | 07 |
| | (b) | Explain the Instrumentation amplifier. State the applications. | 07 |
| OR | | | |
| Q.2 | (a) | List the types of blood pressure transducer and explain any one in detail. | 07 |
| | (b) | List the types of temperature transducer and explain any one in detail | 07 |
| | | OR | |
| | (b) | List the respiration transducers and Explain any one detail | 07 |
| OR | | | |
| Q.3 | (a) | Draw and explain ECG block diagram. | 07 |
| | (b) | Explain the standard lead systems for ECG. | 07 |
| OR | | | |
| Q.3 | (a) | Draw EEG block diagram and explain working principle . | 07 |
| | (b) | Explain Ultrasonic foetal monitor with applications. | 07 |
| OR | | | |
| Q.4 | (a) | Explain working Principle and Block Diagram of electro-surgery machine | 07 |
| | (b) | Explain working Principle & Block Diagram of Blood Cell Counter. | 07 |
| OR | | | |
| Q.4 | (a) | Explain working Principle & Block Diagram of Hemo-dialysis machine. | 07 |
| Q.4 | (b) | Explain block diagram of muscle stimulator with application. | 07 |
| OR | | | |
| Q.5 | (a) | Write short note on Echocardiography. | 07 |
| | (b) | Write short note on CT Scan machine. | 07 |
| OR | | | |
| Q.5 | (a) | Explain the application of Line isolation system in biomedical engineering. | 07 |
| | (b) | Draw and Explain X-ray machine block diagram. | 07 |
