

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER –IV • EXAMINATION – SUMMER 2014**

**Subject Code:3341704****Date: 31/05/2014****Subject Name:Biomedical Instrumentation****Time:****Total Marks: 70****Instructions:**

1. Attempt five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

- Q.1** (a) Enlist different biopotentials .Explain biopotential generation within body. **07**  
 (b) Classify medical instruments based on different departments of a civil hospital with their names. **07**
- Q.2** (a) Draw and explain block diagram of an ECG machine **07**  
 (b) Describe indirect blood pressure measurement method. **07**
- OR
- (b) Draw and explain general block diagram of medical instrumentation. **07**
- Q.3** (a) Define ECG and ECG lead.Draw ECG lead configuration sketches only. **07**  
 (b) Describe electro encephalograph using block diagram. **07**
- OR
- Q.3** (a) Explain Enthoven 's tringle for ECG **07**  
 (b) Explain Bio-feedback instrumentation with neat diagram **07**
- Q.4** (a) Draw and explain block digram of X-ray machine **07**  
 (b) Explain color Doppler ultrasonic machine.Also state application. **07**
- OR
- Q.4** (a) Describe CT scan machine using diagram. **07**  
 (b) List properties and applications of ultrasound. **07**
- Q.5** (a) Describe electro-surgery machine machine **07**  
 (b) Describe blood cell counter **07**
- OR
- Q.5** (a) Write short note on "Biochemistry analyser" **07**  
 (b) Describe Hemo-dialysis machine. **07**

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