Reg. No. | | | | | | | | | | | | |

Question Paper Code : 31427

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Seventh Semester

Electrical and Electronics Engineering

EI 2311/EI 65/10133 EI 606 – BIOMEDICAL INSTRUMENTATION

(Common to Sixth Semester Electronics and Instrumentation Engineering and Fifth Semester – Instrumentation and Control Engineering)

(Regulation 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is action potential?
2. What is the use of transducers in Biomedical Engineering?
3. List the various types of electrodes.
4. What is preamplifier?
5. List the normal heart rate of human being according to age group.
6. What is pulmonary circulation?
7. What is biotelemetry?
8. What are the applications of ultrasound in medical imaging?
9. What is fibrillation?
10. What is electrotheraphy?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the structure of human cell and its constituents with the help of neat diagram.

Or

(b) Draw a block diagram of a biomedical instrument system and briefly explain its components.

12. (a) Explain the working of Chopper amplifier. Mention their importance in biomedical instrumentation.

Or

(b) Explain how the electrical hazards protection can be provided in the biomedical instrumentation systems.

13. (a) Explain the Oscillometric blood pressure measurement method.

Or

(b) Explain with the help of functional diagram the working of spirometer.

14. (a) Draw a typical functional block diagram of amplitude modulated radio transmitter and receiver and explain.

Or

(b) Explain the principle of operation of MRI.

15. (a) Explain working of DC defibrillator.

Or

(b) Describe the procedure of hemodialysis with suitable block diagram.