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**Question Paper Code : X60529**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Fifth/Sixth/Seventh Semester

Electrical and Electronics Engineering

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

(Common to Instrumentation and Control Engineering and  
Electronics and Instrumentation Engineering)

(Regulations 2008/2010)

(Also Common to PTEI 2311 – Biomedical Instrumentation for B.E. (Part-Time)  
Sixth Semester – EEE – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

**(10×2=20 Marks)**

1. What are resting and action potentials ?
2. What is a neuron ? Define the various parameters associated with it.
3. List any four types of electrodes ion bio signal measurements.
4. What are the various hazards due to leakage current ?
5. List the normal heart rate of human being according to age group.
6. What is pulmonary circulation ?
7. What is the principle of CT ?
8. List few applications of ultra sonography.
9. What is meant by fulguration ?
10. What is a stimulator ?

PART – B

**(5×16=80 Marks)**

11. a) List the cell components and their functions.

(OR)

- b) What are the difficulties in measuring living system ? Explain in detail.



12. a) i) Describe various electrodes used in measurement of bio potentials. (8)  
ii) Explain the working of differential amplifiers and its biomedical applications. (8)

(OR)

- b) Comment on various bio signals and their significance with a neat sketch. (16)

13. a) Explain the working of Spirometer with the help of functional diagram.

(OR)

- b) Explain the rheographic method of blood pressure measurement.

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) i) Discuss the working of AC defibrillator. (8)  
ii) Explain the function of Peripheral nerve stimulator. (8)

(OR)

- b) i) Draw the block diagram of short wave diathermy unit and explain its working. (8)  
ii) Discuss the different modes of operation of cardiac pacemakers. (8)

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