Reg. No. :

Question Paper Code: 31573

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Electronics and Instrumentation Engineering

01UEI703 - BIOMEDICAL INSTRUMENTATION

(Common to Instrumentation and Control Engineering)

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is 'repolarization'?

2. List the different types of electrodes.

3. List out the types of electrodes used for measuring ECG.

4. Define the term latency in EMG.

5. What are the types of ultrasonic blood flow meters?

6. Discuss about the origin of heart sounds.

7. Expand the term 'SIMV' used in ventilators.

8. What is micro shock?

9. Distinguish the terms "PET and "SPECT".

10. Give the block diagram of a bio-telemetry system.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain in detail about the generation and propagation of action potential through nerve-muscle cells. (16)

Or

(b) What are the electrodes used in biomedical and explain the types of electrodes in detail with diagrams. (16)

12. (a) Describe in detail about the clinical significance, lead configuration, recording methods and waveforms of ECG. (16)

Or

(b) Discuss in detail about the generation of EEG with 10-20 lead configuration system. (16)

13. (a) Explain about the Indirect methods of blood pressure monitoring. (16)

Or

(b) Draw the block diagram of automated electro sphygmomanometer for blood pressure measurement and explain its operation. (16)

14. (a) In detail, explain the working of Heart Lung machine with neat diagram. (16)

Or

(b) Discuss the process of dialysis with diagrams. How does this technique play a useful role in medical field? Give a few examples and state the limitations of this technique. (16)

15. (a) Explain the construction and working of a computed tomography system. (16)

Or

(b) Write the significance of X ray machine and explain its functioning with necessary diagram. (16)

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