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

Question Paper Code: 37503

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Seventh Semester

Electronics and Instrumentation Engineering

01UEI703 - BIOMEDICAL INSTRUMENTATION

(Common to Instrumentation and Control Engineering)

(Regulation 2013)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Which of these units is the part of biomedical instrumentation system?
   (a) Amplifier (b) Transmitter (c) Modulator (d) Multiplexer

2. The transducer that converts the input signal into the output signal, which is a discrete function of time, is known as _____ transducer.

   (a) Active (b) Analog (c) Digital (d) Pulse

3. Physiological signal obtained from skin is called?

   (a) EMG (b) ECG (c) EEG (d)) EOG

4. ECG Stands for.....?

   (a) Electromiografia (b) Electrooculograma

   (c) Electrocardiograma (d) Electroencefalografia

5. The frequency of the reflected ultrasonic energy is ……. by a moving interface.

(a) Increased (b) Decreased

(c) both a and b (d) Slightly increased by one

6. Principle of operation of plethysmograph depends on ……..

(a) Boyle's law (b) Magnetic induction

(c) Faradays law (d) Beer's law

7. If a patient goes for a blood test, which is the possible test he/she will undergo?

(a) CBC (b) MBC (c) TBC (d) CVC

8. A condition of slow heart where the heart rate reduces to

(a) 10 – 20 beats (b) 20-30 beats (c) 30-50 beats (d) 40-50 beats

9. A defibrillator is an ……

(a) Electrical device (b)Mechanical device (c) Electronic device (d) Transducer

10. ……. is the electrical technique which permits examination of the physiological data of man or animal under normal conditions

(a) Radio telemetry (b) Micro shock (c) Macro shock (d) Bio-telemetry

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail about the generation and propagation of action potential through nerve-muscle cells. (8)

12. Explain the working of (i) EEG Recorder (ii) EMG System. (8)

13. Explain about the Indirect methods of blood pressure monitoring. (8)

14. In detail, explain the working of Heart Lung machine with neat diagram. (8)

15. Explain the construction and working of a computed tomography system. (8)