

	ASSIGNMENTS	SESSION-2024-25
		SEM-7 <sup>th</sup> (ODD)

### Module I

- 1) Explain the basic medical instrumentation system with block diagram.
- 2) Write the static characteristics of biomedical instrument with example.
- 3) Explain the static and dynamic characteristics of biomedical instruments.
- 4) Write short notes on Bio signals
- 5) what are sources of biomedical signals give a brief description of these origin of biomedical signal.
- 6) Write a few characteristics of biosignals.
- 7) Write a few problems which is encountered with measurements of biosignal from human body.
- 8) Write a short note on piezoelectric transducer.
- 9) Write a short note on potentiometric transducer.
- 10) What are performance characteristics of transducer.
- 11) Write a short note on variable capacitance transducer.
- 12) With neat diagram explain pressure transducer.
- 13) Draw the equivalent circuit of electrode and explain different types of electrodes.
- 14) Explain with neat sketch the generation of action potential.
- 15) Explain the difference between a thermistor and a thermocouple in temperature measurement.
- 16) Explain patient monitoring system with the help of block diagram.

### Module II

- 17) Explain with neat sketch the cardiovascular system in human body.
- 18) Discuss about the electro conduction system of heart.
- 19) What are methods for measurement of ECG? Explain
- 20) Explain the working of EEG with block diagram.
- 21) Write short notes on Electromyogram
- 22) Describe electrodes used for ECG, EMG and EEG.
- 23) Write short notes on ECG amplifier
- 24) Explain with neat sketch the Nervous system in human body.
- 25) Illustrate standard 10-20 electrode system for recording spontaneous EEG with neat diagram.

### Module III

- 26) What is blood pressure in a human body? Explain electromagnetic blood flow meter.
- 27) With the help of block diagram explain the working principle of external pacemaker.
- 28) Explain principle and application of following measurement:
  - i) Flame-photometer    ii) Spectrophotometer
- 29) Explain Magnetic blood flow meters?
- 30) Explain difference between Defibrillators and pacemakers.
- 31) Explain direct method of blood pressure measurement.

### Module IV

- 32) Explain Respiratory therapy equipment's i.e. inhalators, ventilators and respirators.
- 33) What is X-ray technique? Discuss the construction and working of the instrument which produces the image.
- 34) Explain working principle of CT scan with block diagram.
- 35) Write short notes on Spirometry
- 36) Write short notes on Nebulizers and Humidifiers

### Module V

- 37) Describe shock hazards and its remedy for electrical equipment's.
- 38) Write short notes on Macro-shock and Micro-shock
- 39) Write short notes on Electric shock hazards and leakage current