1. Which type of electrode is designed to minimize motion artifacts and skin impedance, commonly used in EEG recordings?

a) Limb electrodes
b) Floating electrodes
c) Propelled disposable electrodes
d) Micro, needle, and surface electrodes

Answer: b) Floating electrodes
Explanation: Floating electrodes are specifically designed to reduce motion artifacts and skin impedance by floating on the skin surface, ensuring stable and reliable EEG recordings.

2. Which type of amplifier is primarily used to amplify weak bioelectric signals with high input impedance and low noise?

a) Preamplifiers
b) Differential amplifiers
c) Chopper amplifiers
d) Isolation amplifier

Answer: a) Preamplifiers
Explanation: Preamplifiers are employed to amplify weak bioelectric signals with high input impedance and minimal noise, providing an initial boost to the signal before further amplification.

3. Which biomedical recording technique is commonly used to monitor heart activity and diagnose cardiac abnormalities?

a) EEG
b) EMG
c) ERG
d) ECG

Answer: d) ECG (Electrocardiography)
Explanation: Electrocardiography (ECG) is used to record the electrical activity of the heart over time, commonly employed in diagnosing various cardiac conditions and monitoring heart health.

4. What is the primary purpose of using lead systems in biomedical signal recording?

a) To reduce electrode motion artifacts
b) To enhance signal-to-noise ratio
c) To minimize skin impedance
d) To capture signals from multiple points on the body

Answer: d) To capture signals from multiple points on the body
Explanation: Lead systems are utilized in biomedical signal recording to capture signals from different anatomical locations on the body simultaneously, enabling comprehensive physiological monitoring.

5. Which of the following waveforms is typically associated with muscle activity and used in electromyography (EMG) recordings?

a) P wave
b) QRS complex
c) T wave

d) MUAP

Answer: d) MUAP (Motor Unit Action Potential)
Explanation: MUAP is a waveform associated with muscle activity and is commonly observed in electromyography (EMG) recordings, representing the electrical activity of motor units within muscles.

6. What is the primary function of isolation amplifiers in biomedical signal processing?

a) To amplify weak bioelectric signals
b) To eliminate common-mode noise
c) To enhance signal resolution
d) To synchronize multiple signals

Answer: b) To eliminate common-mode noise
Explanation: Isolation amplifiers are utilized in biomedical signal processing to eliminate common-mode noise, ensuring that only the desired signal is amplified while noise and interference are rejected.

7. Which parameter is primarily assessed to evaluate electrical safety in a medical environment and prevent shock hazards?

a) Skin impedance
b) Leakage current
c) Signal-to-noise ratio
d) Electrode capacitance

Answer: b) Leakage current

Explanation: Leakage current is a critical parameter assessed to evaluate electrical safety in a medical environment, as it helps prevent shock hazards by monitoring the flow of current through unintended pathways.

8. Which instrument is commonly used to check safety parameters of biomedical equipment, such as leakage current and electrical insulation resistance?

a) Electrocardiograph (ECG)
b) Electroencephalograph (EEG)
c) Electromyograph (EMG)
d) Electrical safety analyzer

Answer: d) Electrical safety analyzer
Explanation: Electrical safety analyzers are specifically designed instruments used to check safety parameters of biomedical equipment, including leakage current and electrical insulation resistance, ensuring compliance with safety standards.

9. Which type of electrode is typically used to capture electrical signals directly from nerve cells or deep muscles in biomedical recordings?

a) Surface electrodes
b) Microelectrodes
c) Floating electrodes
d) Propelled disposable electrodes

Answer: b) Microelectrodes
Explanation: Microelectrodes are specialized electrodes used to capture electrical signals directly from nerve cells or deep muscles in biomedical recordings, offering high spatial

resolution and sensitivity.

10. Which amplifier type is effective in reducing interference from common-mode signals while amplifying the desired signal in biomedical recordings?

a) Preamplifiers
b) Differential amplifiers
c) Chopper amplifiers
d) Isolation amplifiers

Answer: b) Differential amplifiers
Explanation: Differential amplifiers are specifically designed to amplify the difference between two input signals while rejecting common-mode signals, making them effective in reducing interference in biomedical recordings.