MCQs on Therapeutic Energies, Medical Instrumentation, and Currents in Physical Therapy

Abstract

This document contains 15 multiple-choice questions (MCQs) worth 30 marks (2 marks each), covering therapeutic energies (thermal, mechanical, electrical, electromagnetic, and magnetic), medical instrumentation for physical therapy, and low, direct, and medium frequency currents. The questions focus on definitions, physiological and pathological effects, dangers, and basic principles of instrumentation and current types used in physiotherapy.

1 Multiple-Choice Questions (30 Marks, 2 Marks Each)

1. **Therapeutic Energies: Thermal**
   What is a primary physiological effect of thermal energy in physical therapy?
   a) Muscle contraction b) Increased blood flow c) Nerve depolarization d) Bone regeneration
   Answer: b) Increased blood flow

2. **Therapeutic Energies: Mechanical**
   Mechanical energy in physical therapy, such as ultrasound, primarily affects:
   a) Tissue heating b) Tissue vibration c) Electrical stimulation d) Magnetic field generation
   Answer: b) Tissue vibration

3. **Therapeutic Energies: Electrical**
   Electrical energy in therapy is commonly used to:
   a) Stimulate muscles b) Cool tissues c) Generate X-rays d) Reduce inflammation
   Answer: a) Stimulate muscles

4. **Therapeutic Energies: Electromagnetic**
   Electromagnetic energy in physiotherapy is often applied via:
   a) Diathermy b) Massage c) Traction d) Cryotherapy
   Answer: a) Diathermy

5. **Therapeutic Energies: Magnetic**
   A physiological effect of magnetic energy in therapy includes:
   a) Direct muscle contraction b) Pain modulation c) Tissue freezing d) Bone fusion
   Answer: b) Pain modulation

6. **Therapeutic Energies: Pathological Effects**
   A potential pathological effect of excessive thermal energy is:
   a) Burns b) Muscle atrophy c) Nerve regeneration d) Joint stiffness
   Answer: a) Burns

7. **Therapeutic Energies: Dangers**
   A key danger of electrical energy in therapy is:
   a) Hypothermia b) Electric shock c) Bone fracture d) Skin hydration
   Answer: b) Electric shock

8. **Medical Instrumentation: Generation**
   In physical therapy, medical instruments often generate:
   a) Chemical reactions b) Therapeutic currents c) Mechanical stress d) Radiation only
   Answer: b) Therapeutic currents

9. **Medical Instrumentation: Circuit Diagrams**
   A circuit diagram for a physiotherapy device typically includes:
   a) Power source and electrodes b) Sensors and motors c) Filters and amplifiers only d) Resistors only
   Answer: a) Power source and electrodes

10. **Medical Instrumentation: Testing**
    Testing of physiotherapy equipment ensures:
    a) High voltage output b) Safe operation c) Magnetic field strength d) Mechanical vibration
    Answer: b) Safe operation

11. **Low Frequency Currents**
    Low frequency currents (1–100 Hz) in physical therapy are primarily used for:
    a) Deep tissue heating b) Muscle stimulation c) Bone repair d) Skin rejuvenation
    Answer: b) Muscle stimulation

12. **Direct Currents**
    Direct current (DC) in physiotherapy is often used for:
    a) Iontophoresis b) Diathermy c) Ultrasound therapy d) Magnetic therapy
    Answer: a) Iontophoresis

13. **Medium Frequency Currents**
    Medium frequency currents (1–10 kHz) are used in interferential therapy to:
    a) Reduce pain b) Generate heat c) Increase resistance d) Measure

voltage
Answer: a) Reduce pain

14. **Therapeutic Energies: Dangers**
A danger of electromagnetic energy in therapy is:
a) Overheating of tissues b) Bone softening c) Muscle paralysis d) Nerve regeneration
Answer: a) Overheating of tissues

15. **Low Frequency Currents: Application**
Which condition is commonly treated with low frequency currents in physiotherapy?
a) Chronic pain b) Fractures c) Skin burns d) Joint dislocation
Answer: a) Chronic pain