



(University of Choice)

**MASINDEMULIROUNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

SECOND YEAR SECOND TRIMESTER EXAMINATIONS

(MAIN EXAMINATION)

FOR THE DEGREE

OF

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

COURSE CODE: BSP 221

COURSE TITLE: ELECTROTHERAPY II

DATE: TUESDAY 11TH APRIL 2023

TIME: 2:00-4:00 PM

INSTRUCTIONS TO CANDIDATES

Answer all Sections

Sec A: Multiple Choice Questions (MCQ) (20 Marks)

Sec B: Short Answer Questions (SAQ) (40 Marks)

Sec C: Long Answer Questions (LAQ) (40 Marks)

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

SECTION A: MULTIPLE ANSWER QUESTIONS (20Mks).

1. Which one of the following is not among the precautions taken when using LASER?

- A. Wear LASER protective Goggles.
- B. Avoid LASER reflection from mirrored surfaces.
- C. Wear gloves.
- D. LASER equipment should be placed in a controlled area.

2. What statement best describes Photobiomodulation?

- A. It's the modulation of biological processes occurring in the body.
- B. The principle that the photonic energy delivered in the tissue by LASER modulate biological processes within the tissues.
- C. It's the effects of LASER on tissues.
- D. None of the above.

3. With regard to Interferential (IFT) Current which is incorrect?

- A. Intensity of the current is not dependent on desired effect.
- B. It penetrates deeply and is more comfortable.
- C. Excitable tissues can be stimulated by low frequency.
- D. Used in stress incontinence management.

4. Depth and penetration of continuous Short Wave Diathermy depends on the following except?

- A. Wave frequency.
- B. Heat production.
- C. Type of applicator.
- D. Electrical properties of tissues.

5. UVR has wavelengths of between

- A. 10nm-400nm.
- B. 400nm-500nm.
- C. Light wavelength.

D. None of the above.

6. Microwave of penetrates bone.

A. 1250mHz.

B. 2450mHz.

C. 2540mHz.

D. None of the above.

7. Among the following which one is not correctly matched as in IFT?

A. Parasympathetic nerves - 10-150Hz.

B. Nociceptive Fibers - 90-150Hz.

C. Smooth muscle - 0-10Hz.

D. Motor fibers - 90-100Hz.

8. While applying DC, the important parameter for therapeutic purpose is

A. Current intensity

B. Circuit resistance

C. Current density

D. The duration of application.

9. The duration of anesthesia effect by application of anesthetic agent through iontophoresis is

A. 2 minutes

B. < 5 minutes

C. Within 15 minutes

D. 20 minutes

10. In a step transformer:

A. The number of turns of wire in primary coil is more than the secondary

B. Number of turns in primary and secondary is same

C. The number of turns of wire in secondary coil is more than primary

D. None of the above

11. LASER promotes wound healing by:

A Cell proliferation

B. Increase in RNA production

C. Increase in collagen formation

D. All of the above

12. A person suffers from a peripheral vascular disorder of the lower limb; he also suffers from osteoarthritis of knee. Which is the best electrotherapy modality of choice?

A. Iontophoresis

B. Infrared

C. Ultraviolet radiation

D. Pulsed diathermy.

13. For therapeutic microwave generators which is the correct wavelength?

A. 300mm.

B. 122.5mm.

C. 126.3mm.

D. None of the above.

14. Electrode placement in IFT are as follows except?

A. Quadri polar.

B. Coplanar.

C. Dipolar.

D. Bipolar.

15. The following are frequencies of SWD except

A. Pulsed.

B. Intermittent.

C. Continuous.

D. A and C.

16. The types of muscle fibres mostly activated by electrical stimulation are:

A Type -I fibers

B. Type – II a fibers

C. Type-II b fibers

D. None of the above.

17. A current that produces greater muscular hypertrophy with gain in strength is:

A Direct current

B. Faraday current

C. Russian current

D. dynamic current.

18. The term decimeter wave applies:

A. Infrared

B. Shortwave

C. Microwave

D. None of the above.

19. The factor/factors important for penetration of ion into the tissue is/are

A. Specific conductivity of solution

B. pH of solution

C. Precipitation formed by ions

D. All of the above

20. What best describes phonophoresis?

A. The movement of Antibiotics into subcutaneous tissue using ultrasound.

B. The movement of the drug through the skin into the subcutaneous tissues under the influence of ultrasound.

C. It is a mechanism where drug components move into tissues with current involvement.

D. None.

SECTION B: SHORT ANSWER QUESTIONS (40Mks).

1. State the physiological effects of Russian Current (5mks).
2. Describe the five types of electrodes in Short Wave Diathermy (10mks).
3. a). Define Pulsed Electromagnetic Energy(PEME). (2mks).
b). State the dosage of PEME (2mks).
c). Highlight the benefits of PEME (6mks).
4. List 5 main clinical uses of Interferential Current (5mks).
5. Highlight indications of Microwave diathermy (10mks).

SECTION C: LONG ANSWER QUESTIONS (40mks).

(Answer any 2 questions)

1. Discuss the immediate and long-term effects of Ultra-Violet Radiation (20mks).
2. While using Interferential Current as a mode of treatment;
 - a). State the Treatment parameters (2mks).
 - b). Describe the procedure of treatment (5mks).
 - c). Highlight the basic precautions taken with Interferential (3mks).
 - d). List Contraindications for use of Interferential current (10mks).
3. a). Define LASER therapy (3mks).
b). Describe the mechanism of LASER (5mks).
c). State LASER treatment techniques (4mks).
d). State the clinical applications of LASER (3mks).
e). List the Therapeutic effects of LASER (5mks)