



DCO-9537

Seat No. _____

Third Year B. Physiotherapy Examination

July - 2022

Electrotherapy-II

(Old Course)

Time : 3 Hours]

[Total Marks : 100

- Instructions :**
- (1) Answer should be brief and to the point.
 - (2) Figures to the right indicate marks.
 - (3) Illustrate answers with suitable diagrams.
 - (4) Each section should be written in separate answer books.

SECTION - I

- 1 Long Essays : (Any Two) 2×10=20**
 - (1) Define Iontophoresis, and enumerate its physiological & therapeutic effects. Explain in detail, the principle & techniques of Iontophoresis.
 - (2) Define & explain in detail, TENS, and pain modulation. What are the contraindication to TENS ?
 - (3) Define Interferential Therapy, and explain its physiological & therapeutic effects. Explain in detail, the therapeutic application of IFT for the knee joint.

- 2 Write Short Essays : (Any Two) 2×5=10**
 - (1) Propagation of action potential.
 - (2) Electromyography.
 - (3) Physiological & therapeutic effects of stimulation.

3 Write in short (Any Five) 5×2=10

- (1) Motor Unit
- (2) Nerve Conduction Velocity.
- (3) Contraindications & dangers of iontrphoresis.
- (4) Synapse
- (5) Rheobase
- (6) F-G test

4 Multiple Choice Questions (Answer all) 10×1=10

- (1) The frequency range of low frequency currents are between,
(A) 1 - 10Hz (B) 1 - 100Hz
(C) 1Hz - 1KHz (D) >100Hz
- (2) Which of the following ions is used for oedema reduction using iontophoresis ?
(A) Hyaluronidase (B) Salicylate
(C) Acetate (D) Copper
- (3) The treatments given in baths :
(A) suitable for localized areas
(B) Suitable for irregular areas
(C) Both A & B
(D) None of the above
- (4) The most commonly encountered danger with the use of constant direct current is :
(A) giddiness (B) electric shock
(C) electrolytic burn (D) allergic rash
- (5) Action potential is set up only when the resting membrane depolarizes to
(A) -15m V (B) -70m V
(C) -55m V (D) +30m V
- (6) The term orthodromic means :
(A) passage of impulses in the forward direction.
(B) passage of impulses in the opposite direction.
(C) passage of impulses in both direction.
(D) None of the above.

- (7) For stimulation of denervated muscles, a pulse duration of _____ is most effective.
- (A) 300ms (B) 100ms
(C) 10ms (D) 1ms
- (8) The electrical resistance on the skin surface can be reduced by :
- (A) warming the area
(B) washing the part to be treated
(C) wetting the skin
(D) All of the above
- (9) Postoperative pain can effectively be treated with :
- (A) TENS (B) IFT
(C) Both A & B (D) None of the above
- (10) Which of these is a type of medium frequency current?
- (A) Russian currents
(B) Interferential currents
(C) Rebox type currents
(D) All of the above

SECTION - II

- 1 Long Essays : (Any Two) **2×10=10=20**
- (1) Explain in detail, Biofeedback, & its therapeutic effects.
(2) Describe & explain Strength - Duration Curve.
(3) Explain, Faradic foot bath, & Faradism under pressure.
- 2 Write Short Essays : (Any Two) **2×5=10**
- (1) Combination therapy.
(2) Pain gate theory.
(3) Pelvic floor muscles reeducation.

3 Write in short (Any Five) 5×2=10

- (1) Chronaxie
- (2) Contraindications of IFT.
- (3) Group muscle stimulation.
- (4) Resting potential
- (5) Modified faradic current.
- (6) Synaptic transmission of impulses.

4 Multiple Choice Questions (Answer all) 10×1=10

- (1) In IFT, the difference between the frequencies of the two original medium frequency of alternating currents is.
(A) vector sweep (B) carrier frequency
(C) beat frequency (D) chronaxie
- (2) In EMG, Electrical silence at rest is/occurs in,
(A) Denervation (B) polymyositis
(C) Normal (D) abnormal
- (3) The danger of burns is less when treatment is given
(A) in baths (B) with pen electrode
(C) with pads & electrodes (D) all the above
- (4) Interrupted DC stimulation of denervated muscles produce.
(A) Sluggish contraction (B) No response
(C) Brisk contraction (D) Tetanic contractions
- (5) The resistance offered by the epidermis to the flow of electric current is :
(A) 100 ohms (B) 1000 ohms
(C) 10000 ohms (D) 10 ohms
- (6) In order to prevent the disturbance in radio frequencies between IFT & SWD, a minimum distance of _____ should be maintained.
(A) 15 Meters (B) 15 Feet
(C) 1.5 Feet (D) 1 Meter

- (7) Absolute contraindication to TENS is in the area of
- (A) Cardiac pacemaker
 - (B) Over pregnant uterus
 - (C) Over carotid sinus
 - (D) All of the above
- (8) In iontophoresis, the charged ions are placed,
- (A) under electrodes of opposite charge
 - (B) under electrodes of same charge
 - (C) under both the electrodes
 - (D) Both (A) and (B)
- (9) SD curve is a
- (A) Qualitative test
 - (B) Quantitative test
 - (C) Both A & B
 - (D) None of the above
- (10) Pain relief brought about by the release of endogenous opiates by IFT is due to,
- (A) activation of nociceptive C fibers selectively by using low beat frequency as 15Hz, that activates the descending pain suppression from higher centers.
 - (B) activation of large diameter A beta fibers that superimposes upon the A delta & C fibers.
 - (C) physiological blocking of nerve transmission by selecting frequency of transmission greater than those of A delta & C fibers.
 - (D) All of the above
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