



RJ-9537

Seat No. _____

Third Year B. Physiotherapy Examination

February - 2019

Electrotherapy - II

Time : 3 Hours]

[Total Marks : 100

SECTION - I

- 1 Long essay : (Any Two) 20**
- (1) Write in detail about Modified direct current & its role in Bell's palsy.
 - (2) Define SD curve. Describe SD curve of extensor indicis taken at 6th day, 45th day and 3rd months in a patient with radial nerve injury.
 - (3) What are the principles of iontophoresis? Explain the drugs used in iontophoresis. Mention the indications & contra indications.
- 2 Short essay : (Any Two) 10**
- (1) Russian current
 - (2) Diadynamic current
 - (3) Define IFT. Explain in detail about the effects of vector setting, spectrum and base in IFT.
- 3 Write in short : (Any Five) 10**
- (1) Rheobase
 - (2) EMG biofeedback
 - (3) Deltoid inhibition
 - (4) Combination therapy
 - (5) Faradism under pressure
 - (6) Factors affection EMG & NCV Test.
- 4 MCQs : 10**
- (1) What is the main advantage of IFC over other forms of electrical stimulation?
 - (A) There is no advantage to ifc
 - (B) Ifc is billable at a higher rate than other forms of electrical stimulation
 - (C) Ifc is purported to have a greater depth of penetration than other forms of electrical stimulation
 - (D) Ifc is less comfortable than other forms of electrical stimulation

- (2) Which of the following treatment goals is inappropriate for IFC due to the crossing of the channels of electrodes that is required?
- (A) Motor response
 - (B) Pain reduction
 - (C) Muscle guarding reduction
 - (D) Muscle strengthening
- (3) What fiber type would potentially need to be stimulated with electrical stimulation to cause the liberation of the longest lasting endogenous mechanisms for pain management?
- (A) A-beta
 - (B) A-delta
 - (C) Motor
 - (D) C fibers
- (4) Pain receptors in the body are called _____.
- (A) Meissner's corpuscles
 - (B) Krause's end bulbs
 - (C) Pacinian corpuscles
 - (D) Nociceptors
- (5) When the current increases gradually to a maximal amplitude, it is known as
- (A) Burst
 - (B) Ramping
 - (C) Modulation
 - (D) Galvanic
- (6) During the absolute refractory period the cell is not capable of
- (A) Depolarization
 - (B) An action potential
 - (C) Twitch muscle contraction
 - (D) All of the above
- (7) Which of the following statements is most accurate regarding the application of iontophoresis?
- (A) The treatment electrode must be the same polarity as any medication that is being delivered to the patient
 - (B) The dispersive electrode must be the same polarity as any medication that is being delivered to the patient
 - (C) The patient must be informed that he or she will need to expect to tolerate discomfort with the electrical stimulation with iontophoresis
 - (D) It is not necessary to ask patients if they are allergic to iontophoretic medications since they have been prescribed these by their physician.

- (8) Electrode placement site selection guidelines for pain management involve the selection of which of the following considerations?
- (A) Sites that exhibit an increased resistance to the flow of electrical current
 - (B) Acupuncture points in the area surrounding the treatment area and referral area of pain
 - (C) Motor points in the treatment area so that a strong muscle contraction can easily be generated in the painful region
 - (D) Trigger points in the treatment area
- (9) Which of the following is NOT an ion used to treat inflammation?
- (A) Hydrocortisone
 - (B) Salicylate
 - (C) Lidocaine
 - (D) Dexamethasone
- (10) Which ions can be used to treat fungal infection as iontophoresis modality?
- (A) Hydrocortisone
 - (B) Salicylate
 - (C) Lidocaine
 - (D) Copper

SECTION - II

- 5** Long essay : (Any **Two**) **20**
- (1) Define pain. Explain pain physiology & its modulation.
 - (2) Describe the types of TENS. Compare the different types of TENS. Write in detail about physiological & therapeutic effects of TENS.
 - (3) Define biofeedback. Explain in detail about the principles, instrumentation, effects, uses, indications & contraindication. Add a note on control on balance through biofeedback.
- 6** Short essay : (Any **Two**) **10**
- (1) Abnormal EMG potentials.
 - (2) Labile Vs Stable method.
 - (3) Use of faradic current in urinary incontinence.
- 7** Write in short : (Any **Five**) **10**
- (1) F.G. Test & its clinical significance in nerve muscle physiology.
 - (2) Application of TENS for stress incontinence.
 - (3) Surge modulations & pulse modulation
 - (4) Faradic foot bath
 - (5) Motor unit action potentials
 - (6) Reflex current.

- (1) Nerve conduction velocities are valuable for?
 - (A) Localizing the site of peripheral compression
 - (B) Determining rheobase and chronoxie
 - (C) Determining reaction of degeneration
 - (D) None of above
- (2) To _____ current density in deeper tissue, the electrodes must be placed _____.
 - (A) Increase, closer
 - (B) Increase, further apart
 - (C) Decrease, closer
 - (D) Decrease, further apart
- (3) Two currents combine and the amplitude decreases. This is called _____.
 - (A) Destructive interference
 - (B) Constructive interference
 - (C) Heterodyne current
 - (D) Beat current
- (4) What is the recommended range for iontophoresis current amplitude?
 - (A) 3-5 ma
 - (B) 5-10 ma
 - (C) 50-100 ma
 - (D) 100-150 ma
- (5) In IFT, "Beat Frequency" of resultant wave is of _____.
 - (A) High frequency
 - (B) Medium frequency
 - (C) Low frequency
 - (D) Rebox current
- (6) The conventional TENS works on the principle of _____.
 - (A) Endogenous opiate theory
 - (B) Pain gate theory
 - (C) Pattern theory
 - (D) Specificity theory
- (7) Which of the following is NOT an effect of thermotherapy?
 - (A) Increased circulation
 - (B) Relaxed spasms
 - (C) Decreased cell metabolism
 - (D) Increased soft-tissue elasticity
- (8) What problem does areas of thick fat and skin present?
 - (A) Decreased ion absorption
 - (B) Increased ion absorption
 - (C) Decreased resistance
 - (D) Increased resistance
- (9) Inlabour pain, _____ modality can be used safely.
 - (A) Swd and wax bath
 - (B) Ift and tens
 - (C) US and tens
 - (D) Swd and tens
- (10) Phantom limb pain can be treated effectively using _____.
 - (A) Swd
 - (B) Us
 - (C) Tens
 - (D) Rebox