

**No. of Printed Pages: 3**

**Roll No.....**

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**BPT 2<sup>nd</sup> YEAR, ANNUAL EXAMINATION, MAY 2024**

**ELECTROTHERAPY (THEORY)**

**PAPER CODE: BPT – 270**

**Time: 3 hours**

**Maximum Marks: 75 Marks**

*(Write your Roll No. on top of the paper immediately)*

**Note:** (i) Attempt ALL questions (iv) Choices are mentioned wherever applicable  
(ii) Draw diagrams wherever necessary (v) Parts of a question must be answered together  
(iii) Give examples wherever necessary

**SECTION – A**

**Multiple Choice Questions (All are compulsory)**

**(15 × 1 Mark = 15 Marks)**

**Q1. SD curve can \_\_\_\_\_.**

- a) Distinguish between innervation & denervation
- b) Distinguish between innervated and denervated but cannot quantify the state of innervations
- c) Distinguish innervated and denervated and quantify the state of innervation
- d) None

**Q2. U.S may not be effective in**

- a) Soft tissue injury
- b) Bony injury
- c) Improving muscle blood flow
- d) Chronic pain

**Q3. Skin edema occurs in \_\_\_\_\_ dose of UVR**

- a) E1
- b) E2
- c) E3
- d) E4

**Q4. Heat is used prior to passive stretching exercises because of**

- a) Analgesic effect, reduction of viscosity and decrease collagen extensibility
- b) Analgesic effect, reduction of viscosity and increase collagen extensibility
- c) Analgesic effect, increase of viscosity and increase collagen extensibility
- d) Analgesic effect, increase of viscosity, sedative effect, and reduction of muscle spasm

**Q5. For iontophoresis the positively charged ions should be kept at---**

- a) Anode
- b) Cathode
- c) Any electrode
- d) Both the electrodes

**Q6. Common mode rejection is a feature of –**

- a) NCV test
- b) EMG Test
- c) Strength duration curve
- d) None of the above

- Q7.** Which of the following is absolutely contraindicated in pregnancy  
 a) Hot pack    b) TENS    c) Ultrasonic therapy    d) Microwave diathermy
- Q8.** Which of the following tissue is best example of capacitor  
 a) Muscle    b) Fascia    c) Skin    d) Bursa
- Q9.** Among the following electrotherapy modalities which is the right sequence of decreasing frequency?  
 a) Infrared, ultrasound, shortwave, interferential  
 b) Infrared, microwave, shortwave, interferential  
 c) Ultraviolet, microwave, infrared, interferential  
 d) Infrared, ultraviolet, microwave, medium frequency current
- Q10.** The intense TENS is combination of----  
 a) High frequency & low intensity    c) Low frequency & high intensity  
 b) High frequency & High intensity    d) Low frequency & low intensity
- Q11.** For the deeper penetration of Sound wave which frequency will be more appropriate  
 a) 3 MHz    b) 1 MHz    c) 3.8 MHz    d) 2 MHz
- Q12.** One Degree ( $1^{\circ}$ ) raise in body temperature in therapeutic range, the rate of Nerve conduction velocity increased by—  
 a) 4 m/sec    b) 3 m/sec    c) 2 meter/sec    d) 5 meter/sec
- Q13.** Galvanic current is being use to stimulate  
 a) Innervated Muscles    c) Spastic Muscles  
 b) Denervated Muscle    d) Partially Denervated Muscles
- Q14.** The mode of heat transfer by ultrasound is \_\_\_\_\_.  
 a) Convention    b) Conduction    c) Radiation    d) Evaporation
- Q15.** Rheobase is----  
 a) Maximum tolerable current for a nerve impulse at long duration  
 b) Minimum current intensity for a nerve impulse at maximum pulse duration  
 c) Minimum duration for a nerve impulse at double of rheobase  
 d) None of the above

### SECTION - B

Answer any **THREE** of the following:

(3 × 10 Marks = 30 Marks)

- Q1.** Explain the non-thermal mechanism of ultrasound therapy to control pain and promote healing.
- Q2.** Describe the basic principles of SWD. Also enumerate the indications, contraindications, and precautions.
- Q3.** Write short notes on any **two** of the following:
- a) Basic principles of LASER
  - b) Referred pain
  - c) Iontophoresis
- Q4.** Describe the basic principles, application, and uses of interferential therapy in treatment of musculoskeletal disorders.

### SECTION - C

Answer any **TWO** of the following:

(2 × 15 Marks = 30 Marks)

- Q1.** Describe the mechanism of pain control by the application of Intense Transcutaneous Electrical Nerve Stimulation.
- Q2.** Enumerate the physical therapy modalities based on electromagnetic energies. Explain the application, indications, precautions, and contraindication of any of the two modalities based on Electromagnetic energy.
- Q3.** Write short notes on any **three** of the followings:
- a) Microwave diathermy
  - b) Faradism under pressure
  - c) Nerve conduction velocity test
  - d) Ultraviolet radiation therapy

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