
Total number of printed pages-11

34 (2) ELTH 2.4

2018

ELECTROTHERAPY

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

- I. Essay type : (Answer **any two** out of **three**)
10×2=20
- (a) Define US. Explain in details about the production of US. Write in details about the principles and methods of application of US.
- (b) Define SD curve. Explain the procedure for plotting SD curve and mention its significance.
- (c) Define TENS. Classify them. Write in details about the physiological and therapeutic effects of TENS. Indications and Contraindications of TENS.

Contd.

II. Short Essay Type : (Answer **any ten**):
10×5=50

- (a) Define IRR. Classify IRR generators. Write in details about the effects of IRR.
- (b) Explain the various methods of application of IFT. Write its physiological and therapeutic effects.
- (c) What is LASER? Indications and contraindications of LASER.
- (d) Define Contrast bath. Write in details about the therapeutic effects along with the indications and contraindications.
- (e) Define SWD. Explain the principles of production of SWD with diagram. Dangers of SWD.
- (f) What is Whirlpool Bath? Write in details about the methods of application and its therapeutic uses.
- (g) Define Cyclotherm. Write in details about the therapeutic uses. Mention indications of Cyclotherm.
- (h) What is Wax bath? Write in details about the various methods of applications. Indications of Wax bath.
- (i) What is Faradic type Current? Explain its physiological effects of Faradic type current. Indications of Faradic type current.
- (j) Write in details about Nerve Conduction Velocity studies.
- (k) What is UVR? Write the standard doses of UVR. Explain treatment of Psoriasis with UVR.
- (l) Define biofeedback. Write the role of biofeedback in physiotherapy.

III. Short answer type : (Answer **any five** out of **seven**)
2×5=10

- (a) What is Rheobase and Chronaxie?
- (b) What is Russian current and its benefits?
- (c) What is PEME? Mention its use.

- (d) Mention few factors which decreases the efficiency of US.
- (e) Indications of Ice pack.
- (f) Name some superficial heating modalities.
- (g) What is electric shock? What are the causes of electric shock?

IV. Multiple choice questions : (Attempt **all**)

1×20=20

- (1) 'Lewis's Hunting reaction :
 - (a) the effect on circulation of applying US to the skin.
 - (b) the effect on circulation of applying ICE to the skin.
 - (c) the effect on circulation of applying IFT to the skin.
 - (d) None of the above.

- (2) Intensity of US is measured in

- (a) Watts/cm²
- (b) Watts/m²
- (c) Joules/cm²
- (d) Kilowatt.

- (3) Wax bath should be maintained at a temperature of :

- (a) 30-50°
- (b) 40-60°
- (c) 40-44°
- (d) None of the above.

- (4) Fluidotherapy is :

- (a) heating and cooling apparatus
- (b) stainless steel tanks or baths of various sizes
- (c) form of dry heating with tiny cellulose particles
- (d) non-invasive analgesic technique.

(5) Lenz's law :

- (a) EMF
- (b) EMG
- (c) ECG
- (d) EEG.

(6) In polarized state the nerve is not permeable to

- (a) Sodium
- (b) Potassium
- (c) Calcium
- (d) Iron.

(7) Cavitation is result of

- (a) Insonation
- (b) Ionization
- (c) Iontophoresis
- (d) Phonophoresis.

(8) UVB wavelength is :

- (a) 280-315 nm
- (b) 315-400 nm
- (c) below 280 nm
- (d) above 400 nm.

(9) Capacitor is also known as :

- (a) Dielectric
- (b) Condenser
- (c) Variable capacitor
- (d) None of the above.

(10) Penetration depth for He-Ne Laser (Red light) is :

- (a) 1.5 - 2.5 mm
- (b) 1 - 4 mm
- (c) 1 - 2 mm
- (d) 1.5 - 3.5 mm.

(11) Phonophoresis uses _____ energy to drive _____ into tissues.

- (a) current/molecules
- (b) current/ions
- (c) acoustic/ions
- (d) acoustic/molecules.

(12) Active electrode is placed over the target area and a second dispersive electrode is placed at another site away from the target area :

- (a) Russian current
- (b) Bipolar technique
- (c) Monopolar technique
- (d) Quadripolar technique.

(13) The types of muscle fibers 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.

(14) Mark space ratio is in

- (a) US
- (b) IFT
- (c) TENS
- (d) LASER.

(15) Energy required to change the state of a substance is called as

- (a) Kinetic energy
- (b) Latent heat
- (c) Potential energy
- (d) Chemical energy.

(16) Microwaves are electromagnetic radiations that lie between radiowaves and :

- (a) X-ray
- (b) IRR
- (c) UVR
- (d) Gamma rays.

(17) Faradic type contraction :

- (a) tetanic like contraction
- (b) tetanic contraction
- (c) both
- (d) none of the above.

(18) Electromyogram :

- (a) Monitoring and to change range of movement used
- (b) Monitoring and to increase and decrease muscle activity
- (c) Measuring or increasing grip strength
- (d) None of the above.

(19) Twin spike :

- (a) TENS
- (b) Faradic current
- (c) Galvanic current
- (d) High voltage pulsed current.

(20) Step-up transformer :

- (a) number of turns in the secondary coil is twice that in the primary
- (b) number of turns in the secondary coil is equal to the primary
- (c) number of turns of wire in primary coil is more than the secondary
- (d) number of turns in primary and secondary is same.