
Total number of printed pages-8

34 (2) ELTH 2.4

2019

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 low frequency current. Discuss in detail about physiological and therapeutic effects of interrupted galvanic current stimulation. Mention the indications and contraindications for interrupted galvanic current.
 - (b) What is Laser ? Discuss about the types of laser and its therapeutic effects, indications and contraindications.
 - (c) What is short wave diathermy ? Explain the production of short wave diathermy with circuit diagram and explain about physiological and therapeutic effects of SWD and its indications and contraindications.

Contd.

II. Short Essay Type : (Answer **any ten** out of 12) $5 \times 10 = 50$

- (a) What is SD curve ? Explain the procedure for plotting SD curve.
- (b) Classification of dynamic currents. Write the physiological effects and uses of it.
- (c) Discuss about basic principle of IFT. Explain beat frequency and frequency sweep.
- (d) What is Iontophoresis ? Explain techniques of application of Iontophoresis.
- (e) Explain the physiological effects of TENS and give a note on the indications and contraindications.
- (f) What is Faradic foot bath ? Explain about technique of application of Faradic foot bath and its indication and contra-indication.
- (g) Define Ultrasound therapy ? Explain in details about the production of Ultrasound and its principles.
- (h) What is Microwave diathermy ? Explain about Therapeutic effects of Microwave diathermy.

- (i) What is IRR ? Explain Physiological and therapeutic effects of IRR.
- (j) What is HVPGS ? Write about parameters and its uses.
- (k) Explain in detail about P.U.V.A.
- (l) What is Pain ? Explain about Pain gate theory.

III. Short Answer type : (answer **any five**) $2 \times 5 = 10$

- (a) What is Phonophoresis ?
- (b) Define EMG Biofeedback.
- (c) Pfluger's law.
- (d) What is Piezo-electric effect ?
- (e) What is Russian current and its uses ?
- (f) What is Rebox current ?
- (e) What is Cyclothem ?

IV. Multiple choice questions : (**Attempt all**) $1 \times 20 = 20$

- 1. Erythema obtained due to application of UVR is due to
 - (a) Release of Chemical Substances.

- (b) Arterial dilatation
 - (c) Venous dilatation
 - (d) Damage to the RBC
2. The wavelength of UVA is
- (a) 280–315 nm
 - (b) 260–280nm
 - (c) 315–400 nm
 - (d) 220–260nm
3. Gradual reduction in US beam in the tissue is known as
- (a) Cavitation
 - (b) Attenuation
 - (c) Refraction
 - (d) Reflection
4. Patient having Cadiac pacemaker suffering from left shoulder pain can be treated with
- (a) TENS
 - (b) IFT
 - (c) US
 - (d) None of the above.

5. Which law states that for electromagnetic waves to have an effect on the tissue, they must be absorbed
- (a) Joule's Law
 - (b) Grothus Law
 - (c) Snell's Law
 - (d) None of the above
6. Tuning is done for
- (a) Resonance
 - (b) Adjustments
 - (c) Increase the output
 - (d) All of the above.
7. Microwaves are electromagnetic radiation between radio waves and
- (a) X-rays
 - (b) IRR
 - (c) UVR
 - (d) Gamma rays.
8. The progression of E_2 dose in UVR therapy is
- (a) 25%
 - (b) 50%
 - (c) 75%
 - (d) 100%

9. Most common method of electrode placement for pain relief with TENS is
- (a) Over the site of pain
 - (b) Proximal to the site of pain
 - (c) Over same dermatomal distribution
 - (d) Distal to the site of pain
10. Density of current in tissues close to the electrode while treating with SWD is
- (a) Least
 - (b) Greatest
 - (c) Moderate
 - (d) None of the above
11. What is the frequency of (H_E-N_E) Laser ?
- (a) 650 nm
 - (b) 950 nm
 - (c) 663 nm
 - (d) 691 nm
12. What is the frequency of MWD ?
- (a) 2450 MHz
 - (b) 4350 MHz
 - (c) 1890 MHz
 - (d) 2750 MHz

13. The term decimetre wave applies
- (a) Infrared
 - (b) Shortwave
 - (c) Microwave
 - (d) None of the above
14. The percentage of transmission of aquaponic gel is
- (a) 59%
 - (b) 19%
 - (c) 67%
 - (d) 72%
15. Laser promotes wound healing by
- (a) Cell proliferation
 - (b) Increase in RNA production
 - (c) Increase in Collagen formation
 - (d) All of the above
16. Therapeutically eddy current is used to
- (a) Produce heat
 - (b) Produce nerve stimulation
 - (c) Apply drugs in Iontophoresis
 - (d) None of the above.

17. A current that produces greater muscular hypertrophy with gain in strength is
- (a) Direct current
 - (b) Faradic current
 - (c) Russian current
 - (d) Didynamic current
18. The frequency and wavelength of SWD is
- (a) 25.3 MHz & 12m
 - (b) 27.12 MHz & 11m
 - (c) 21.4 MHz & 11.7m
 - (d) 24.7 MHz & 11m
19. Intensity of US is measured in
- (a) watt/cm²
 - (b) joule/cm²
 - (c) watt/m²
 - (d) kilowatt
20. In polarized state the nerve is not permeable to
- (a) Sodium
 - (b) Potassium
 - (c) Calcium
 - (d) Iron