DCO-9007   Seat No. _____

S. Y. B. Physiotherapy Examination

July - 2022

Electrotherapy-1

(Old Course)

Time : **3 Hours**]   [Total Marks : **100**

Instructions : (1) Answer should be brief & to the point.
  (2) Illustrate answer with suitable diagrams.
  (3) Each section should be written in separate answer books.

SECTION - I

1 Long Essay : (Write any **Two**)   **2×10=20**
  (a) Write in detail about, MWD & its methods of applications.
  (b) Describe in detail about production. Absorption & Penetration of Infra-red Radiations.
  (c) What is ultra-sound ? Write in detail about the production, attenuation, non-thermal effects of therapeutic ultrasound.

2 Short Essay : (Write any **two**)   **2×5=10**
  (a) Moist heat
  (b) Electric heating pad.
  (c) Physiological effects & therapeutic uses of wax bath.

3 Write in short : (Any **Five**)   **5×2=10**
  (a) PEME
  (b) Fitters
  (c) Electromagnetic Spectrum
  (d) Grothus law
  (e) Kromayear lamp
  (f) Spacing in S.W.D.

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4   Multiple Choice questions   10×1=10

(1)   In a condenser the spacing material should have :
   (a)   low dielectric constant   (b)   High dielectric constant
   (c)   Both (a) & (b)   (d)   None of the above

(2)   For thermal effect to be produced by PSWD, the mean power exceeds :
   (a)   5 w   (b)   10 w
   (c)   3 w   (d)   None

(3)   The very high frequency of microwaves can be produced by :
   (a)   Magnetron
   (b)   Thermionic value
   (c)   Repetitively charging & discharging of condenser
   (d)   Transistor

(4)   The unit of ultrasound is :
   (a)   Watts   (b)   Watts /C.m^2
   (c)   Volts /sq inch   (d)   Newton

(5)   The alternating vasodilatation & vaso constriction during the application of cold is :
   (a)   Jovles effect   (b)   Turners effect
   (c)   Hunters effect   (d)   Lewis hunting reaction

(6)   The amout of heat delivered to the body by moist hot pack is more than PWB, Because.
   (a)   Moist heat produces heat in body by convection
   (b)   The Specific heat of water is more than wax.
   (c)   The specific heat of wax is mare than water.
   (d)   None

(7)   In UVR lamp the eat produced in the burner changes the quartz to :
   (a)   Silicone   (b)   Boron
   (c)   Tridymite   (d)   Silicone oxide

(8)   The mode of heat transfer by hot pack, whirl pool bath, profiting wax bath is _____
   (a)   Conduction & Radiation
   (b)   Radiation & Convection
   (c)   Conduction, radiation & Convection
   (d)   Conduction & Convection

(9) Movement of drug through skin into sub-cutaneous tissue under the influence of ultra-sound is :

(a) Iontophoresis (b) Phonophoresis

(c) Both (d) None of above

(10) Epidermal transit time is about

(a) 30 days (b) 6 days

(c) 28 days (d) 21 days

SECTION - II

5 Long Essay : (Write any **Two**) 2×10=20

(a) Define LASER and write about principles and contra-indication of LASER

(b) Describe in detail about paraffin wax bath.

(c) Write about physiological & Therapeutic uses of cold therapy. Also mention contra-indication of cold therapy.

2 Short Essay : (Write any **two**) 2×5=10

(a) Hubbard tank.

(b) Inductothermy (cable method)

(c) PUVA

3 Write in short : (Any **Five**) 5×2=10

(a) Physical properties of electromagnetic radiations.

(b) Contrast bath

(c) Uses of filters in UVR.

(d) Testing of Ultrasound apparatus

(e) Definition & characteristics of pulsed S.W.D.

(f) Which are the superhelical heat modalities ? Write names of it.

4 Multiple Choice questions 10×1=10

(1) Capacitance is measured in the unit of :

(a) Ampere (b) Farad

(c) Volt (d) None

(2) The angle of incidence for the electromagnetic rays to have maximum absorption should be :

(a) 90^0

(b) 0^0

(c) 180^0

(d) None

(3) Which one among the following is a superficial heating modality ?

(a) S.W.D.

(b) U. S.

(c) MWD

(d) I. R.

(4) The term diathermy means :

(a) Through & through heating

(b) Superficial heating

(c) Deep heating

(d) All of Above

(5) The effective depth of penetration of MWD is :

(a) 3 c.m.

(b) 4.3 c.m.

(c) 5 c.m.

(d) 2 c.m.

(6) In the electromagnetic spectrum infra-red occupy a place between :

(a) 750 nm- 4,00,000 nm

(b) 400 - 75 nm

(c) 200 - 300 nm

(d) 10 - 400 nm

(7) Vitamin D is produced by the effect of :

(a) UVA

(b) UVB

(c) UVC

(d) None

(8) When treating a large around, the method of application of laser selected is :

(a) Scanning method

(b) Grid method

(c) Both (a) & (b)

(d) None

(9) The tissue that accumulates maximum heat with condenser field application of SWD is :

(a) Skin

(b) fat

(c) Blood

(d) Muscle

(10) E2 dose of UVR is

(a) $2 \times E_1$

(b) $2.5 \times E_1$

(c) $3 \times E_1$

(d) $3.5 \times E_1$