17671

15162

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE : **12**

(a) List any four effects of UV on human body.

(b) Draw and explain the block diagram of traction unit.

(c) State four effects of ultrasound on human body.

(d) State the principle of cold therapy.

(B) Attempt any ONE : **6**

(a) Draw the block diagram of ultrasound therapy machine. Explain it. List any four applications of ultrasound machine.

(b) List and draw the different cutting and coagulation electrodes.

2. Attempt any FOUR : **16**

(a) State the necessity of traction unit. List the applications of cervical and lumbar traction unit (any two).

(b) State and explain different current waveform used in nerve and muscle stimulator.

(c) Give the significance of circulatory response and neural response.

(d) Define leakage current. List and explain its types.

(e) Write the fault finding procedure of electrosurgical unit. (Any four steps)

(f) State the significance of grounding.

3. Attempt any FOUR of the following : **16**

(a) List any four medical applications of LASER.

(b) Write any four technical specifications of ultrasound therapy machine.

(c) Compare unipolar and bipolar modes solid state cautery machine. (any two points of each)

(d) A nerve muscle stimulator is received with following problem. Explain the technique to eliminate it.

(i) Stimulation intensity too low

(ii) Stimulation intensity too high

(iii) Stimulation period is too short or long

(iv) No stimulation is obtained

(e) Explain any four application technique of cold therapy.

4. (A) Attempt any THREE : **12**

(a) Which application technique of shortwave diathermy is used if the knee joint of patient is to be treated ? Draw neat diagram of it.

(b) What are the technical specifications of nerve and muscle stimulator ?

(c) Draw constructional diagram of UV lamp. Also describe principle of operation of UV lamp.

(d) Describe the principle of interference therapy.

(B) Attempt any ONE : **6**

(a) Explain the methods of cutting and coagulation.

(b) State and explain microwave diathermy with neat diagram.

5. Attempt any FOUR of the following : **16**

(a) Compare CPM & traction unit. (Any two points of each).

(b) List any four technical specifications of shortwave diathermy.

(c) Name the currents used for treatment of atonic paralysis, muscle weakness, functional paralysis, denervated muscle.

(d) State and explain contra-indication method.

(e) Describe electrical microshock and macroshock.

(f) State the concept of electrostatic discharge.

6. Attempt any FOUR : **16**

(a) List any four faults and causes of faults found in ultrasound therapy machine. Also explain the action for overcoming these faults.

(b) List methods of accident prevention and explain any one with diagram.

P.T.O.

(c) State and explain the construction and working of IR lamp.

(d) Suggest possible solution for following faults of electrosurgical unit.

	Faults	Solution
(1)	Equipment is not turning on	
(2)	No cut & but coagulation is OK	
(3)	Electrical shock to user	
(4)	No control over the intensity	

(e) Name the following Fig. A and complete this block diagram. What is the role of the missing components in this diagram ?

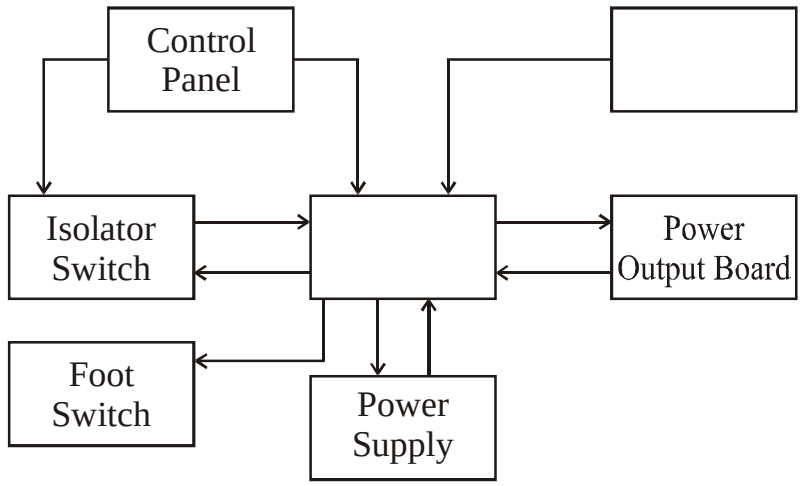

Fig. (A)