



# 17671

11718

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are **compulsory**.*
  - (2) *Answer **each** next main question on a **new** page.*
  - (3) *Illustrate your answers with neat sketches **wherever** necessary.*
  - (4) *Figures to the **right** indicate **full** marks.*
  - (5) *Assume suitable data, if **necessary**.*
  - (6) *Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.*

**Marks**

1. A) Attempt **any three**:

**12**

- a) Differentiate between IR and UV lamp (any 4 points).
- b) State the need of CPM unit.
- c) Suggest application technique of ultrasound therapy for (i) injured body part (ii) for irregular surface.
- d) State and explain the principle of cold therapy.

B) Attempt **any one**:

**6**

- a) Write any four specifications of ultrasound therapy machine. Draw the block ultrasound therapy machine and state the function of matching layer and braking layer.
- b) Draw the block diagram of solid-state cautery machine and explain each block in detail.

2. Attempt **any four**:

**16**

- a) Draw the block diagram of traction unit and state the function of each block.
- b) Draw the diagram nerve and muscle stimulator and explain it in detail.
- c) Write application techniques of cold therapy.
- d) Write any two methods of accident prevention.
- e) Write different types of cutting and coagulation electrodes and explain any two.

**P.T.O.**



- f) Suggest the possible solution and state the cause for the following faults on ESU (Electro Surgical Unit):

Faults	Cause	Solution
1) Detection of alarm tones		
2) Mode buttons do not operate		
3) Non-responding foot switch's O/P		
4) Electric shock		

**3. Attempt any four:** **16**

- Draw the constructional diagram of UV lamp and state the use of quartz tube used in it.
- Describe principle of operation of ultrasound therapy machine with suitable diagram.
- Write any four patients safety in cautery machine.
- State the maintenance steps for nerve muscle stimulator.
- State contra-indications of cold therapy.

**4. A) Attempt any three:** **12**

- Name the application technique of SWD used if knee joint of patient is to be treated. Draw neat diagram of it.
- Explain the application techniques of electrotherapy.
- Write any four medical applications of LASER.
- Explain the significance of interferential therapy. Draw suitable waveforms for the same.

**B) Attempt any one:** **6**

- Explain the effect of electric current on human tissues and with a neat diagram. Explain principle of working of electrosurgery.
- Explain the principle of high frequency heating with neat diagram. Differentiate between short wave and microwave diathermy on the basis of (i) wavelength (ii) application.

**5. Attempt any four:** **16**

- State the need of traction treatment.
- Write any four technical specifications of short wave diathermy.
- List any four technical specifications of nerve muscle stimulator.
- State the effects of cold therapy on human body.
- State the concept of electrostatic discharge.
- Draw a neat diagram for test of grounding system in patient care area and explain it.

**6. Attempt any four:** **16**

- State the maintenance steps for ultrasound machine.
- State the physiological effects of electric shock.
- List the effects of IR on human body.
- State the steps to be carried out for maintenance of electrosurgical unit.
- List any four technical specifications of solid-state cautery machine.