



17671

16172

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.*

- | | Marks |
|---|--------------|
| 1. A) Attempt any three : | 12 |
| a) State any four therapeutic uses of IR. | |
| b) Draw the block diagram of CPM machine. State the function of each block. | |
| 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) Draw the block diagram of ultrasound therapy machine. State function of each block. List any four technical specifications of ultrasound therapy machine. | |
| b) Draw the block diagram of solid state cautery machine. State the function of each block. List any four technical specification of solid state cautery machine. | |
| 2. Attempt any four : | 16 |
| a) Compare CPM and traction on the basis of any four points. | |
| b) What are the technical specification of nerve muscle stimulator ? | |
| c) State the contraindications of cold therapy. | |
| d) Describe any two methods for accident prevention. | |
| e) Write fault finding procedure of electrosurgical unit. | |
| f) Describe the procedure for testing of grounding system for leakage current. | |
| 3. Attempt any four : | 16 |
| a) Draw the constructional diagram of UV lamp and state why quartz tube is used in it. | |
| b) State and explain any four effects of short wave on human body. | |
| c) Write any four safety precaution while handling cautery machine. | |
| d) Explain the significance of interferential therapy. Draw neat waveforms for the same. | |
| e) Describe any four application technique of cold therapy. | |

P.T.O.

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

12

- a) Name the application technique of Short Wave Diathermy (SWD) machine which is used if the elbow joint of patient is to be treated. Explain with neat diagram.
- b) Mention effect of electric current on human muscle.
- c) Write any four medical applications of LASER.
- d) Describe the principle of interference therapy.

B) Attempt **any one** :

6

- a) State the principle of electrosurgery machine and list the technical specification of electrosurgery machine (any three).
- b) 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

- a) State the need of traction treatment.
- b) State and explain any four effects of short wave on human body.
- c) Prepare the installation procedure for nerve muscle stimulator.
- d) Explain application techniques of cold therapy.
- e) State the concept of electrostatic discharge.
- f) Draw a neat diagram for test of grounding system in patient care area and explain.

6. Attempt **any four** :

16

- a) Write the installation steps of ultrasound therapy machine.
- b) What is microshock and macroshock ? State their range.
- c) Differentiate between UV and IR lamp (any four points).
- d) Suggest the possible solution and state cause for the following faults on ESU (Electro Surgical Unit)

| Faults | Cause | Solution |
|--|-------|----------|
| 1) Deactivation of alarm tones | | |
| 2) Mode buttons do not operate | | |
| 3) Electric shock | | |
| 4) Non-responding foot switch's output | | |

- e) State different methods of cutting and coagulation and explain any two with neat diagram.