

22546

22223

3 Hours / 70 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. Attempt any FIVE of the following: **10****
- Mention therapeutic frequency of UV and IR.
 - Draw labelled diagram of Ultrasound therapy transducer.
 - List technical specification of nerve and muscle stimulator.
(any four)
 - For following value of current write down it's effect on human tissue.
 - lamp
 - 5 to 10mA
 - List application technique of short wave diathermy.
 - State any two advantages of SWD over ultrasound therapy.
 - Write any two steps applied to accident prevention in hospital environment.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Write in brief any eight applications of LASER in biomedical field.
 - b)
 - i) Draw a neat labelled block diagram of ultrasound therapy machine.
 - ii) List any four technical specifications for same.
 - c) Differentiate between ultrasound and SWD on the basis of
 - i) Therapeutic frequency used
 - ii) Working principle
 - iii) Transducer used
 - iv) Application technique
 - v) Application
 - d) List and draw different cutting and coagulation electrodes.
- 3. Attempt any THREE of the following:** **12**
- a) List and explain any eight concepts used in hospitals to prevent accidents.
 - b) State the need of continuous passive movement unit along with its types.
 - c) Differentiate between IR and UV lamp.
 - i) Frequency used (Range of frequency therapeutic)
 - ii) Advantages of each
 - iii) Applications
 - iv) Working principle
 - d) Write significance of unipolar and bipolar modes of ESU. Suggest with reason the most preferred and safe mode.

- 4. Attempt any THREE of the following:** **12**
- a) Write neat circuit diagram elaborate working of UV Lamp and list any four advantages.
 - b) Discuss any eight safety measures to be followed while using ESU unit.
 - c) Draw a neat block-diagram of ESU unit.
 - d) Define leakage current and draw a neat diagram to measure leakage current through equipment.
 - e) Illustrate the concept of ESD (Electrostatic Discharge)
- 5. Attempt any TWO of the following:** **12**
- a) Suggest physical problem curried by following therapies. (any two each)
 - i) IR therapy
 - ii) UV therapy
 - iii) LASER therapy
 - iv) CPM therapy
 - v) Traction therapy
 - vi) Ultrasound therapy
 - b) With neat diagram illustrate capacitive field method for SWD.
 - c) Discuss about physical effects of cold therapy on human body. At the same time list applications of cold therapy.

6. Attempt any TWO of the following:

12

- a) Identify following diagram name and label the missing blocks also list any four technical specifications for the same.

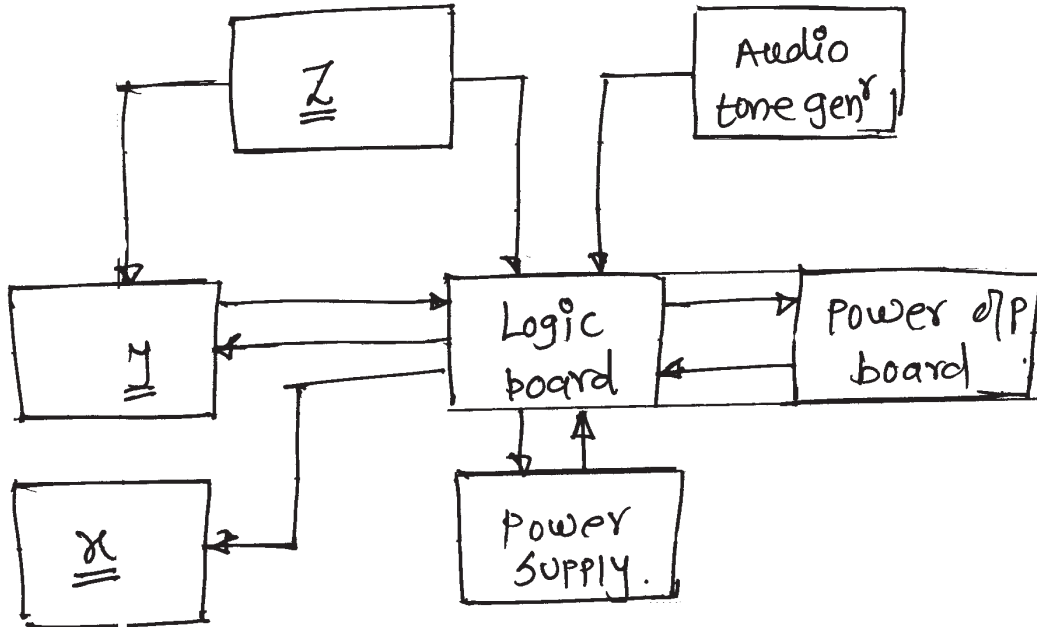


Fig. No. 1

- b) Define term Installation. Suggest Installation procedure for SWD. At the same time give maintenance steps (any six) for the same.
- c) List effect of electric current on nerve and muscles of human body with neat diagram of current waveform. Also list applications of particular current type.