

**Scheme –I**  
**Sample Question Paper**

**Program Name** : Diploma in Medical Electronics  
**Program Code** : MU  
**Semester** : Fifth  
**Course Title** : Therapeutic Equipment  
**Marks** : 70

22546

**Time: 3 Hrs.**

**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) Preferably, write the answers in sequential order.

**Q.1) Attempt any FIVE of the following.**

**10 Marks**

- a) State the therapeutic uses of UV.
- b) State working principle of SWD with neat diagram.
- c) Give concept of cold therapy.
- d) State different methods of cutting and coagulations of ESU.
- e) List any four technical specifications of Nerve muscle stimulator.
- f) Suggest application techniques of ultrasound therapy for the following i) Injured Body Part ii) For irregular surface.
- g) Define microshock and macroshock.

**Q.2) Attempt any THREE of the following.**

**12 Marks**

- a) Draw neat diagram of He-NE LASER tube and give its any two applications.
- b) Describe any physiological effects of ultrasound.
- c) Differentiate between ultrasound and SWD on the basis of i) Working Principle ii) frequency iii) Application techniques iv) Applications.
- d) Describe effects of electric current on human tissues of ESU.

**Q.3) Attempt any THREE of the following.**

**12 Marks**

- a) Describe physiological effects of electric current on human body with their current ranges.
- b) State need of traction unit and draw its block diagram.
- c) Differentiate between luminous and non-luminous IR generator (any four points).
- d) Identify given below Fig A. Mention names of electrodes at position A and B.

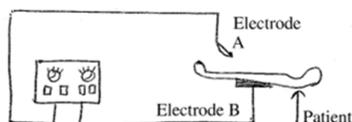


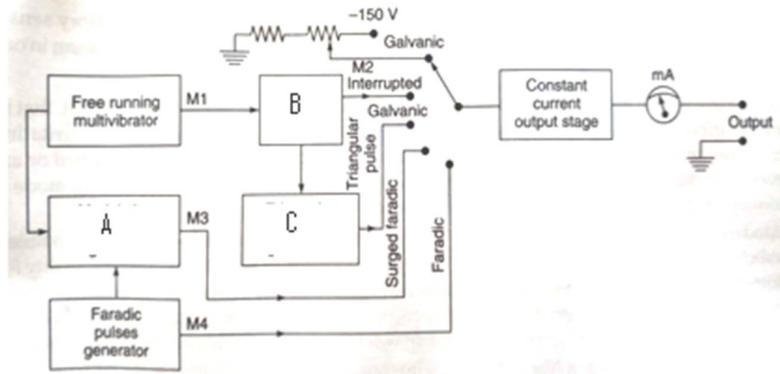
Fig.A

**Q.4) Attempt any THREE of the following. 12 Marks**

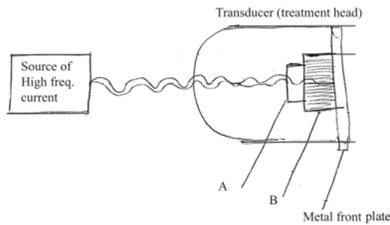
- List and explain any four properties of LASER.
- Define the term maintenance and list steps for maintenance of ESU.
- Describe patient safety in ESU Unit.
- Define leakage current and draw diagram to measure leakage current through equipment.
- Describe methods of accident prevention in hospital environment.

**Q.5) Attempt any TWO of the following. 12 Marks**

- Suggest therapies for the Treatment of following problems i) Acne ii) Muscle spasm iii) Retinal coagulation iv) Lumber pain v) Tissue Healing vi) Cataract surgery
- Identify missing blocks and State their functions.



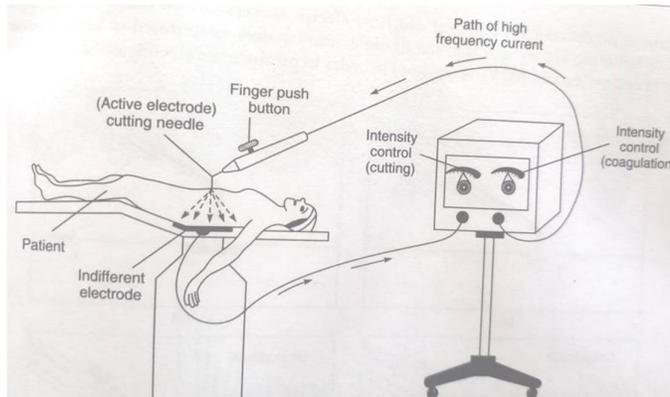
- Identify the Figure B. Name the parts A and B also State their functions.



**Figure B**

**Q.6) Attempt any TWO of the following. 12 Marks**

- Identify the given Figure and give its working principle. Also list any four technical specifications of it.



- b) State and explain applications techniques of SWD with neat diagram.
- c) Draw different current waveforms used for nerve and muscle stimulation also write their applications of each.

**Scheme –I**  
**Sample Test Paper - I**

**Program Name** : Diploma in Medical Electronics  
**Program Code** : MU  
**Semester** : Fifth  
**Course Title** : Therapeutic Equipment  
**Marks** : 20

22546

**Time: 1 Hour**

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**Instructions:**

- (1) All questions are compulsory.
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- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

**Q.1 Attempt any FOUR.**

**08 Marks**

- a) State the therapeutic uses of IR.
- b) State any four properties of LASER.
- c) List any four technical specifications of ultrasound.
- d) List any two possible faults that can be occurred in SWD machine.
- e) Draw neat labelled diagram of Ultrasound therapy transducer.
- f) State the types of CPM and give the different condition when CPM is applied (any 2 condition)

**Q.2 Attempt any THREE.**

**12 Marks**

- a) Differentiate between UV and IR Radiations On the basis of any four points.
- b) Name the application technique of SWD for following i) for treatment of elbow joint Pain. ii) For treatment of knee joint Pain. Explain any one technique with neat diagram.
- c) Draw the block diagram of ultrasound therapy machine and state function of each block.
- d) State: 1) Thermal 2) Mechanical 3) Chemical 4) Biological Effects of ultrasonic waves on tissues. Also enlist any two application of ultrasound.
- e) Compare He-Ne LASER and Semiconductor LASER on the basis of any four points.

**Scheme –I**  
**Sample Test Paper - II**

**Program Name** : Diploma in Medical Electronics  
**Program Code** : MU  
**Semester** : Fifth  
**Course Title** : Therapeutic Equipment  
**Marks** : 20

22546

**Time: 1 Hour**

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**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) Preferably, write the answers in sequential order.

**Q.1 Attempt any FOUR.**

**08 Marks**

- a) List any four application techniques of cold therapy.
- b) Draw a labeled diagram of solid-state cautery machine
- c) Write any four safety precautions while handling ESU.
- d) List any four technical specifications of Nerve muscle stimulator.
- e) Give contraindications of Cold Therapy.
- f) Describe the concept of electro static discharge(ESD)

**Q.2 Attempt any THREE.**

**12 Marks**

- a) Give the significance of following electro-surgery techniques with neat waveform  
1) Electrotomy 2) Fulguration 3) Coagulation 4) Desiccation..
- b) Differentiate between micro and macro shock on following points: 1) Definition 2) Exact ranges 3) Causes 4) Effect on patient.
- c) Draw and explain four different types of current waveforms used for nerve muscle stimulation.
- d) Draw different types of cutting and coagulation electrodes ESU and state their applications.
- e) State the modes of ESU and differentiate between them.