

Sample Test Paper - I

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Therapeutic Equipment

Marks : 25

17671

Time: 1 Hour

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.

Q1. Attempt any THREE

9 Marks

- a) List any three medical application of LASER.
- b) Differentiate between UV and IR lamp. (any three points).
- c) State the need of traction unit.
- d) Draw and explain construction of ultrasound therapy transducer.

Q2. Attempt any TWO

8 Marks

- a) Draw and explain the circuit diagram of microwave diathermy.
- b) List the technical specification of ultrasound therapy machine (any four).
- c) Draw labeled block diagram of Continuous passive movement.

Q3. Attempt any TWO

8 Marks

- a) Draw circuit diagram of short wave diathermy machine and list its any four technical specifications.
- b) Compare CPM and traction unit (any four points)
- c) Draw neat block diagram of ultrasound therapy machine State function of each block.

Sample Test Paper - II

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Therapeutic Equipment

Marks : 25

17671

Time: 1 Hour

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.

Q1. Attempt any THREE

9 Marks

- a) List different types of current waveforms normally employed for nerve and muscle stimulator.
- b) Write down application areas of cold therapy.(any 03)
- c) Draw a labeled diagram of solid state electro surgical unit.
- d) Define let go current of human body. Give ideal value of it.

Q2. Attempt any TWO

8 Marks

- a) Describe working principle of interference therapy with neat diagram.
- b) List different application technique of cold therapy. Describe any two techniques.
- c) List safety accepts in electro surgical unit.(any six)

Q3. Attempt any TWO

8 Marks

- a) Draw different types of cutting and coagulation electrodes (02 types each).
- b) I) State physiological effect of electric shock.
II) Define micro and macro shock.
- c) With neat diagram describe Lewis hunting reaction. Give its application area.

Sample Question Paper

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Therapeutic Equipment

Marks : 100

17671

Time: 3 Hours

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.

Q1. A) Attempt any THREE

12 Marks

- a) List the effect of IR on human body.
- 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 of the body.
- d) List out condition in which contra-indication occur to ice treatment and give reason for it (any four)

Q1. (B) Attempt any ONE.

06 Marks

- a) Draw block diagram of ultrasound therapy machine. State function of each block. List any four technical specifications of ultrasound therapy machine.
- b) List different cutting and coagulation electrode. Draw the same.

Q.2 Attempt any FOUR.

16 Marks

- a) State the need of CPM unit.
- b) Draw circuit diagram of nerve and muscle stimulator and describe it.
- c) Write significance of circulatory response and neural response.
- d) Give the significance of leakage current meter.
- e) Write fault finding procedure of electrosurgical units.
- f) Give the significance of following range of current on human body.
 - i) 20 μ A.
 - ii) 20-80 μ A.
 - iii) 50mA.
 - iv) 6A

Q3. Attempt any FOUR.

16 Marks

- a) Mention the medical application of LASER. (any four)
- b) State four effects on ultrasound on human body.
- c) Write four safety precautions while handling cautery machine.

- d) Prepare the installation procedure for nerve muscle stimulator.
- e) Describe any four applications technique of cold therapy.

Q4. (A) Attempt any THREE.

12 Marks

- a) Which application technique of SWD is used if the knee joint of patient is to be treated? Draw neat diagram of it.
- b) Mention effect of electric current on human muscle.
- c) Draw the construction of IR lamp. State the working of it.
- d) Describe the principle of interference therapy.

Q4. (B) Attempt any ONE.

06 Marks

- a) State the principle of electro surgery machine and List the technical specification of electro surgery machine. (any three)
- b) State the concept of high frequency therapy with neat diagram. Differentiate between short wave, Microwave, on following points.
 - i) Wave length
 - ii) Application

Q5. Attempt any FOUR.

16 Marks

- a) Compare CPM and traction unit. (any four points).
- b) Draw the circuit diagram of microwave diathermy. List any three technical specification of microwave diathermy
- c) What are the technical specifications of nerve muscle stimulator?
- d) State the principle of cold therapy.
- e) What is micro shock and macro shock? State their range.
- f) State the concept of electro static discharge

Q6. Attempt any FOUR.

16 Marks

- a) Write the installation steps of ultrasound therapy machine.
- b) Define leakage current. Describe any two methods for accident prevention.
- c) Differentiate between UV and IR lamp (any four points).
- d) Suggest possible solutions for following faults of electrosurgical unit

Fault	Solution
1. Equipment is not turning on.	
2. Electrical shocks to user	
3. Equipment is on but output is absent, weak or intermittent	
4. Continuous interference with Monitors	

e) Identify the diagram shown in fig 1. Label the block A, B, C and state their function.

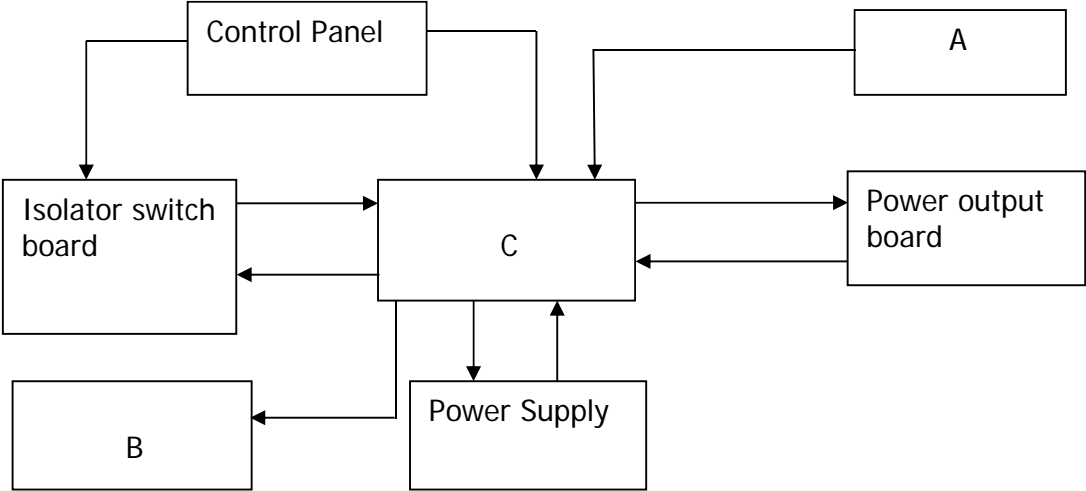


fig 1

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