17671

11819

3 Hours / 100 Marks Seat No. | | | | | | | | |

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) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*
(7) Mobile Phone, Pager and any other Electronic Communication devices are ***not permissible*** *in Examination Hall.*

Marks

1. A) Attempt **any three**. **12**

a) List medical application of IR (any four).

b) Draw the block-diagram of CPM machine. Enlist two medical application of CPM machine.

c) Label 'A' and 'B' in fig. a and identify the apparatus.

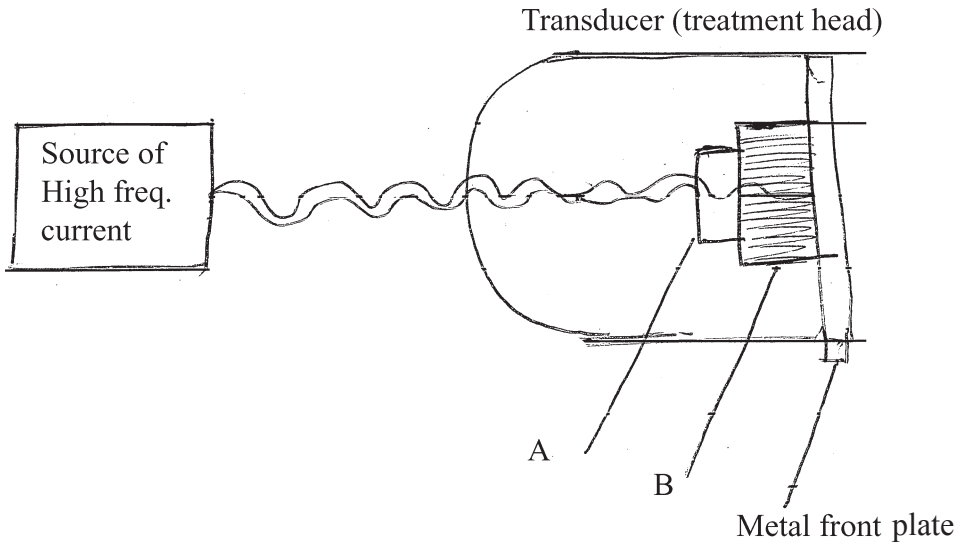

Fig. a

d) With the help of graph give significance of Lewis's hunting reaction.

Marks

B) Attempt **any one**. **6**

a) State :

1) Thermal
2) Mechanical
3) Chemical
4) Biological Effects of ultrasonic waves on tissues. Also enlist any two application of ultrasound.

b) State principle of Electrosurgery and differentiate between unipolar mode and bipolar mode of electrosurgery (any 4 points).

2. Attempt **any four**. **16**

a) State the types of CPM and give the different condition when CPM is applied (any 2 condition).

b) Draw ckt diagram of nerve and muscle stimulator and describe each block.

c) List out conditions in which contra-indications occure to ice-therapy and give reasons for it (any four).

d) Differentiate between micro and macro shock on following points :

1) Definition
2) Exact range
3) Causes
4) Effect on patient.

e) Which factors should be considered while maintaining ESU unit ? (any four).

f) With the help of ckt-diagram, show how Chasis leakage current would be measured ?

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

a) Differentiate between UV and IR Lamp on

1) Frequency of radiation
2) Generation method
3) Application area
4) Effect on human body.

b) List out technical specifications of ultrasound therapy machine (any 4).

c) Give the significance of following electro-surgery techniques with neat waveform

1) Electrotomy
2) Fulguration
3) Coagulation
4) Desiccation.

d) Give installation procedure for nerve muscle stimulator.

e) Describe latent-heat for fusion, in which therapy this concept is applicable.

Marks

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

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 UV lamp and state working of it.

d) With the help of waveform give concept of 'beat' frequency.

B) Attempt **any one**. **6**

a) Draw a labeled diagram of solid-state cautery machine and explain each block.

b) State the different types of diathermy with the help of neat diagram give working of short-wave diathermy machine.

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

a) Compare CPM and traction unit (any four).

b) Give concept of long-wave diathermy and enlist two application of it.

c) Give the technical ratings while purchasing the nerve-muscle stimulator.

d) List application of cold therapy (any four).

e) Give concept of Electro-static discharge.

f) List out precautions to minimize electric shock hazards in hospitals (any eight).

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

a) Give types of maintenance. Give maintenance steps to be carried out for ultrasound therapy machine.

b) Classify leakage-current and with the help of ckt diagram, show how it is harmful for patient.

c) List medical application of laser and explain any one in detail.

d) List any four faults occure in ESU, also give its remedy.

e) Draw waveform and give significance of blending mode in ESU.
