



17671

21718

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) List any four properties of laser.
 - b) With neat block diagram, explain traction unit.
 - c) List any four effects of ultrasound on human body.
 - d) State and explain any two application techniques of cold therapy.

B) Attempt **any one**: **6**

 - a) With neat diagram, explain working principle of ultrasonic therapy machine. List any four technical specification of ultrasound machine.
 - b) Draw different types of cutting and coagulation electrodes. List any four technical specification of cautery machine.
2. Attempt **any four**: **16**
 - a) State any four needs of traction unit.
 - b) What is nerve muscle stimulator? Explain principle of operation of it.
 - c) State and explain contra-indication of cold therapy.
 - d) List out different methods of accident prevention.
 - e) List out steps to be carried out for maintenance of electrosurgical unit.
 - f) Explain the concept of electrostatic discharge.
3. Attempt **any four**: **16**
 - a) List out any four physiological effects of IR on human body.
 - b) With neat diagram, explain working of ultrasonic therapy transducer.
 - c) Explain effects of electric currents on human tissue.
 - d) State and explain application, techniques of electrotherapy.
 - e) State any physiological effects of cold therapy on human body.

P.T.O.



4. A) Attempt **any three** : 12
- Explain capacitive and inductive field application technique of diathermy machine.
 - List any four technical specification of nerve muscle stimulator.
 - List and explain medical application of laser.
 - Explain the principle of interference therapy with suitable diagram.
- B) Attempt **any one** : 6
- With neat diagram, explain cutting, coagulation, fulguration and desiccation modes of ESU. State any safety precaution to be considered while using electrosurgical unit.
 - With neat diagram, explain principle of short wave diathermy.
5. Attempt **any four** : 16
- With neat block diagram, explain CPM unit.
 - Explain physiological effects of short wave on human body.
 - Draw neat waveforms of surged faradic and biphasic currents and explain its application of stimulation.
 - State significance of circulatory response and neural response.
 - Define microshock and macro shock and also state the physiological effects of electric shock.
 - Describe any two methods for accident prevention.
6. Attempt **any four** : 16
- List out maintenance procedure to be carried out for ultrasound machine.
 - State any four electric hazard in hospital environment.
 - With neat diagram, explain construction of high pressure mercury vapour lamp uv generator.
 - Suggest the possible solution and state the cause for following faults on ESU :
 - Alarm tone deactivate.
 - Cutting electrodes not working properly.
 - Identify given below figure A. Mention names of electrodes at position A and B.

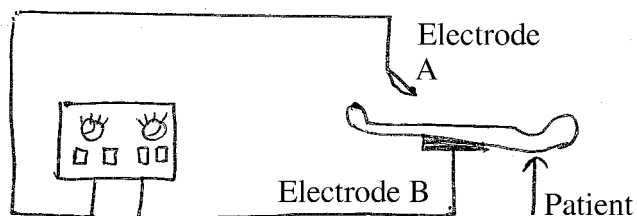


Fig.A