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**Question Paper Code: UB704**

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Professional Elective

Biomedical Engineering

21BMV704-THERAPEUTIC EQUIPMENT

(Common to All branches)

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. What do you mean by the term “Humidifier”? CO1 U
2. List out the parts of a nebulizer. CO1 U
3. Describe the use of cervical and lumbar traction CO1 U
4. Define the frequency of a TENS unit. CO1 U
5. List the types of deep heat therapy modalities commonly used in clinical settings. CO1 U
6. Write a short note on vacuum therapy unit. CO1 U
7. Define the two different techniques used when taking dental radiography. CO1 U
8. Write the primary function of a dental X-ray machine CO1 U
9. What precautions should be taken during heat therapy. CO1 U
10. Why coolant is used in ruby laser? CO1 U

PART – B (5 x 16= 80 Marks)

11. (a) Examine the various types of defibrillators available in medical settings, providing an overview of their features, functionalities, and specific uses in the management of cardiac emergencies. CO1U (16)
- Or
- (b) Describe the following Respiratory Therapy Equipment such as Humidifiers, Nebulizers and Inhalators . CO1U (16)

12. (a) Analyze the principles and methodologies of gait assessment, including observational analysis, instrumented gait analysis, and functional mobility tests, and their respective strengths and limitations. CO1U (16)
- Or
- (b) Explain the principles of electrodiagnostic testing, including Nerve Conduction Studies (NCS) and Electromyography (EMG), and how these techniques provide valuable insights into nerve and muscle function. CO1U (16)
13. (a) Describe the Facial Rejuvenation and its working principle? Give the main side effect and benefits of Skin Rejuvenation? Conclude which one is best either Skin Resurfacing or Skin Rejuvenation? CO1U (16)
- Or
- (b) Describe two different skincare treatments commonly used for wrinkle reduction and explain how they work to reduce the appearance of wrinkles. CO1U (16)
14. (a) Explain the concept of a Low-Speed Dental Hand piece, covering its definition, maintenance, operation, types, and applications within the dental field. CO1U (16)
- Or
- (b) Explain the operating principles of vacuum pumps in dental clinics. How do they create suction to remove fluids and debris from the oral cavity during dental procedures? CO1U (16)
15. (a) In what way the treatment of microwave diathermy with chronic low back pain is useful. Explain the applications of microwave diathermy with nonspecific chronic neck pain. CO1 U (16)
- Or
- (b) Relate the Ruby Laser contribution to medical and cosmetic treatments such as Pigmented lesions, Hair removal in hypertrichosis and Tattoo removal with its mechanism of action in photon therapy. CO1 U (16)