

Question Paper

Exam Date & Time: 08-Apr-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION - APRIL 2023
SUBJECT: BPT 103 - BIOPHYSICS AND BASICS OF ELECTROTHERAPY
(2016 RV SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Draw a stress-strain curve and label its parts. Describe the parts of stress strain curve. Explain the variables of strength, and stiffness with respect to stress strain curve. (20)
(8+4+8 = 20 marks)
- 2) Elaborate the Physiological effects of heat. Discuss the Indications and contra indications for moist heat. Discuss the Methods of application of paraffin wax (20)
(6+6+8 = 20 marks)
- 3) Classify levers. Elaborate the classes/order of levers with examples from human body. (10)
(2+8 = 10 marks)
- 4) Elaborate the laws governing electromagnetic induction. Compare self-induction vs mutual induction (10)
(4+6 = 10 marks)
- 5A) Discuss the pain gate mechanism (5)
- 5B) Discuss creep and hysteresis (5)
- 5C) Discuss capacitors in series and capacitors in parallel (5)
- 5D) Discuss the Molecular theory of magnetism (5)
- 5E) Draw and label a multi-vibrator circuit (5)
- 5F) Define shock. Discuss the different types of shock (5)
(1+4 =5 marks)
- 6A) What is Lewis-Hunting Reaction? (2)
- 6B) What is cosine law? (2)
- 6C) Define torque (2)
- 6D) Compare isometric vs isotonic muscle work (2)
- 6E) What are eddy currents? (2)

-----End-----