

Question Paper

Exam Date & Time: 11-May-2024 (02:30 PM - 05:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

IV SEMESTER B.TECH. (BME) DEGREE END SEMESTER EXAMINATIONS MAY 2024

BASIC CLINICAL SCIENCES I [BME 2221]

Marks: 50

Duration: 180 mins.

Descriptive Questions

Answer all the questions.

Section Duration: 180 mins

- 1) Explain the pulmonary circulation. (3)
 - A)
 - B) Explain the RA anatomy. (3)
 - C) Explain the types of prosthetic valves. (3)
- 2) Explain the normal waveforms in ECG. (4)
 - A)
 - B) What is capnography? (3)
Mention the uses of a capnogram?
 - C) What are the causes of fire in the operation theatre & how do you manage it? (3)
- 3) Write a note on safety features of vaporizers. (3)
 - A)
 - B) State Beer Lamberts law. (4)
What are the limitations of a pulse oximeter?
 - C) What are EPDs? discuss the need and uses of EPDs. (3)
- 4) Draw the circuit diagram of a digital hearing aid and explain the working principle of the digital hearing aid. (4)
 - A)
 - B) Write short notes on types of alaryngeal speech and their advantages and disadvantages. (5)
 - C) Classify joints and give examples to each. (2)
- 5) A 35 year old male had trauma and surgery on the arm. One year later, when he went to the gym he was **not able** to elevate the dumbell above his head. Discuss MRC grading of muscle power and what will his grade be? (3)
 - A)
 - B) A 55 year old male underwent an amputation after road traffic accident. He was given a prosthesis to fit. One month later he developed ulcer at the stump site. What is the cause?. What are the characteristics of an ideal prosthesis? (3)

- C) A 40 year old male underwent plate fixation for forearm fracture. After one year the x ray showed **NO** signs of healing. Discuss the causes. Add a note on role of electroinduction in bone healing. (4)

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