

Question Paper

Exam Date & Time: 06-Dec-2023 (02:30 PM - 05:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, NOV-DEC 2023

BASIC CLINICAL SCIENCE - I [BME 3151]

Marks: 50

Duration: 180 mins.

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

- 1) Summarise any three ECG findings in left atrial enlargement. (3)
 - A)
 - B) Classify AV blocks. (3)
 - C) Outline any three contraindications for treadmill test. (3)
- 2) List the parts of conduction system of the heart. (4)
 - A)
 - B) How does Radiation cause DNA damage. (3)
 - C) What is radiosensitivity, radioresistance and radiocurability ?. (3)
- 3) Expand LET, RBE and OER. (3)
 - A)
 - B) Explain with a drawing the construction of a medical Linear accelerator. (4)
 - C) Mention six properties of x-rays. (3)
- 4) What are the two types of digital radiography? Write in details about the different types of digital radiography with necessary diagrams. (4)
 - A)
 - B) Write in detail about construction of image intensifier with diagram. Describe artefacts in fluoroscopy. (5)
 - C) What is the role of static and dynamic exercises in rehabilitation in a degenerated joint. (2)
- 5) A patient sustained injury to the nerves in the upper limb. After 3 month he was able to lift the hand above the head, but was not able to lift dumbbells in the gym. What is the triceps power now of this patient? Explain muscle power grading according to MRC. (3)
 - A)
 - B) Apply Engineering considerations in the design of prosthesis of joints. (3)
 - C) Analyse the Stages of fracture healing. Explain type of fracture healing in the presence of a nail (4)

fixation.

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