

Question Paper

Exam Date & Time: 04-May-2024 (02:30 PM - 05:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

VI Semester B.Tech (Biomedical) End Semester Examination

BASIC CLINICAL SCIENCES II [BME 3251]

Marks: 50

Duration: 180 mins.

Descriptive Questions

Answer all the questions.

Section Duration: 180 mins

1. Answer ALL questions.
2. Draw labelled diagram wherever necessary

- 1) What is tonometry? Mention two types of tonometer with one example each. (3)
 - A)
 - B) What are the investigations used to study the blood vessels of retina and choroid? Describe the principles of any two. (3)
 - C) Describe in brief the technique of distance and near vision assessment. (3)
- 2) What is cataract? Which surgical procedure is performed to treat cataract? What are the different types of intraocular lenses? (4)
 - A)
 - B) What are the Colour coding of commonly used cylinders with their pin index numbers? (3)
 - C) Define Charles law, Boyles law and Gay lussacs law. (3)
- 3) Name and describe the three pressure system in anaesthesia machine. (3)
 - A)
 - B) Classify vaporisers with examples. (4)
 - C) Write a short note on Augmentative and Alternative Communication (AAC). (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 a short note on Auditory Evoked Potentials. (5)
 - C) Explain the 10-20 system of electrode placement in EEG recordings. (2)
- 5) Evaluate the role of dopamine in reward and addiction pathways. Discuss how this knowledge can be utilized in developing treatments for substance use disorders. (3)
 - A)
 - B) Analyze the significance of key parameters such as amplitude, frequency, and waveform in an EEG recording. (3)

- C) A patient displays symptoms of tingling and numbness in their hands. How would you apply the principles of nerve conduction studies (NCS) to diagnose potential nerve damage? (4)

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