

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



MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER B.TECH MAKE UP EXAMINATIONS, JUNE-JULY 2023

BASIC CLINICAL SCIENCES II [BME 3251]

Marks: 50

Duration: 180 mins.

A

Answer all the questions.

Draw labelled diagrams wherever necessary

- 1) Explain spinothalamic tract with neat labelled diagram. (3)
 - A)
 - B) Write a note on VEP and its application. (3)
 - C) Write notes on Computerized Tomography (CT) and MRI. Compare and contrast clinical utility of CT scan versus MRI. (4)
- 2) Write a note on Carpal Tunnel Syndrome and its evaluation. (3)
 - A)
 - B) Rajan, a 20-year-old football player is using high powered spectacles for distance vision. He consults his ophthalmologist regarding non-surgical alternative to spectacles. What is the ophthalmologist likely to advice? what are the advantages of this over spectacles? (3)
 - C) Which non-invasive imaging modality/modalities are commonly used in assessment of patients with diabetic macular oedema? Explain the principle of this with the help of a diagram. (4)
- 3) What are the components of an operating microscope? Mention two uses of operating microscope in ophthalmology. (3)
 - A)
 - B) Radha, a 65-year-old lady presents to hospital with sudden onset pain and redness in right eye. The attending ophthalmologist wants to check the intraocular pressure (IOP). Which procedure is used for checking the IOP? Name the different types of instruments that can be used for this with one example for each. (3)

- C) Write the block diagram of the digital hearing aid and explain its working principle. (4)
- 4) Appraise your experience of learning speech and hearing topics. (5)
- A)
- B) Explain parts of pure tone audiometer. (3)
- C) Define venturi principle. What are its applications in anaesthesia? (2)
- 5) What is Beer Lamberts law? List the important limitations of pulse oximeter. (3)
- A)
- B) Describe the safety features to prevent the delivery of hypoxic gas mixture in an anaesthesia machine. (3)
- C) Explain the working principle of TENS (Transcutaneous nerve stimulator). What are the parameters to be set in this machine? (4)

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