

**First Year B.Sc Neurotechnology Degree Regular Examinations**  
**November 2024**  
**Basic Neurophysiology & Neurotechnology Instrumentation**  
**(2023 Scheme)**

**Time: 3 Hours****Total Marks: 100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

**Long Essay****(2x10=20)**

1. Describe posterior column pathway up to sensory cortex. Name three differences between spinothalamic tract and posterior column sensations
2. Describe stages of sleep. Why do you ask persons to sleep in EEG Laboratory

**Short Essay****(5x8=40)**

3. Classify nerve fibres depending on speed of conduction and thickness. Write briefly on different types of nerve injuries
4. Write briefly on Neuromuscular transmission
5. Describe the structure of skeletal muscle
6. Name the indications of EEG. What are the different components of EEG instrument
7. Who is an electrically sensitive patient. What are the safety precautions to be observed in electrophysiology lab

**Short Notes****(4x6=24)**

8. What is 10-20 system
9. What are the uses of Single fiber EMG. Describe the various electrodes used in Electroneurography
10. What are the different Evoked potentials that are recorded in electrophysiology lab.  
What is signal averaging
11. What is Volume conduction in Electrophysiology

**Answer Briefly****(2x3=6)**

12. What is noise. Differentiate between external and internal noise
13. What is overdamping and underdamping

**Fill in the blanks****(10x1=10)**

14. Notch filter in EEG is used for-----
15. The Resting Membrane Potential in a neuron is -----
16. The cytoplasm of a muscle fiber is called -----
17. A dipole is defined as -----
18. Time Constant in EEG is -----
19. Common Mode Rejection means -----
20. EKG is the recording of cardiac -----
21. Sensory Receptors of vision are ----- and -----
22. High intracranial pressure can be diagnosed by doing -----
23. Principle of Amplifiers in Electrophysiology is -----

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