

NEURO SCIENCE TECHNOLOGY

PAPER-I

ELECTRONICS & INSTRUMENTATION

Time: 3 Hours

Max Marks: 80

Note: Draw diagrams wherever necessary.

Write an essay on any TWO of the following questions:

2 X 10 = 20

1. Explain the working of EEG system with a block diagram.
2. Explain the types of electrodes, properties and application techniques.
3. Draw the internal block diagram of PMMC and explain.

Write a short note on any FIVE of the following:

5 X 6 = 30

4. Define Kirchhoff's voltage law.
5. Discuss the working of half wave rectifier with neat sketch.
6. Explain the working principles of transformer.
7. Draw the internal block diagram of CRO and explain.
8. Hazards and safety measures in medical equipment.
9. Define Ohm's law, Resistivity/Resistance.

Write briefly on the following:

10 X 3 = 30

10. Explain the principle of analogue to digital conversion.
11. How do you sterilize the equipment of EEG?
12. Impedance measurements.
13. What is Amplitude linearity?
14. State the uses of electrode paste.
15. What is Sampling rate in EEG?
16. Explain the significance of ADC in medical equipment.
17. What steps do you follow for electrical safety while doing EEG?
18. What are the contraindications of EEG?
19. Name some physiological artefacts and non-physiological artefacts while performing EEG.
