

IV B.Tech. II Semester Regular Examinations, April/May -2006
NEUROBIOLOGY AND COGNITIVE SCIENCES
(Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Explain in brief the organization of human nervous system and draw a neat labelled diagram. [16]
2. Define neuron? Describe the various parts of neuron with the help of a neat labelled diagram and explain their functions. [16]
3. Define synapse? Describe the types of neuronal circuits in the nervous system. [16]
4. Describe the specialized or associated cells in the central and peripheral nervous systems other than neurons and explain their functions. [16]
5. Write short notes on the following
 - (a) Inter neuron
 - (b) difference between afferent and efferent neurons
 - (c) All or none principle
 - (d) Action potential. [4x4=16]
6. Describe the genetic basis of neuronal disorders. [16]
7. (a) Explain in brief the special senses in humans. [8]
(b) Discuss the role of hormones on neuronal function. [8]
8. Describe the neuronal mechanism of behaviour in animals. [16]

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1. Describe the structure and functions of human brain and draw a neat labelled diagram. [16]
2. Describe in detail the structure and functions of neuron. [16]
3. What is a synapse? Describe the mechanism of nerve impulse. [16]
4. Describe the specialized or associated cells in the central and peripheral nervous system other than neurons and explain their functions. [16]
5. Write short notes on the following:
 - (a) Axon
 - (b) Neuro transmitters
 - (c) Membrane potential
 - (d) All or None principle. [4x4=16]
6. Discuss the following neuronal disorders, their causes, symptoms and pathogenecity.
 - (a) Alzheimer's Disease [8]
 - (b) Parkinson's Disease. [8]
7. (a) What is the role of brain in the sensory system? [8]
(b) Explain Pharmaceutical mediator released by neurons. [8]
8. Discuss the neuronal response and animal behaviour in various environments. [16]

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1. Explain the various parts of peripheral nervous system and their major functions. [16]
2. Define neuron? What are the properties of neuron and explain the different types of neurons based on its structure and functions. [16]
3. Define synapse? Describe the transmission of nerve impulse along an axon. [16]
4. Describe the specialized or associated cells in the central and peripheral nervous systems other than neurons and explain their functions. [16]
5. Write short notes on the following:
 - (a) All or none principle
 - (b) Myelin sheath
 - (c) Transmissive and receptive segments of neuron
 - (d) Action potential. [4x4=16]
6. Describe the causes, symptoms and pathogenicity of the following neuronal disorders.
 - (a) Multiple sclerosis [8]
 - (b) Peripheral Neuritis. [8]
7. (a) Explain the role of hormones on neuronal function. [8]
(b) Describe the basic characters of sensory receptors. [8]
8. Describe the neuronal mechanism of behaviour in animals. [16]

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1. Describe the central nervous system with the help of a diagram and explain the major functions of central nervous system. [16]
2. 'Neuron is the functional unit of the nervous system' - Explain. [16]
3. Define synapse and explain the presynaptic and post synaptic neurons and their direction of nerve impulse transmission. [16]
4. Describe the specialized or associated cells in the central and peripheral nervous system other than neurons and explain their functions. [16]
5. Write short notes on the following:
 - (a) Presynaptic and post synaptic neurons difference
 - (b) Axon
 - (c) Action potential
 - (d) Neuro transmitters. [4x4=16]
6. Describe the genetic basis of neurological disorders. [16]
7. (a) What is a sensory receptor and what are the types of sensory receptors based on location. [8]
(b) Explain the conduction of impulses by neurons. [8]
8. Discuss the neuronal response and animal behaviour in various environments. [16]
