KUMARAGURU college of technology
character is life

Register Number: ……..

B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2016

(Regulation 2009)

Eighth Semester

BIOTECHNOLOGY

BTY213**:** Neurobiology and Cognitive sciences

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The main parts of the central nervous system are
   a) brain and cranial nerves b) spinal cord and brain
   c) brain and vagus nerve d) spinal nerves and spinal cord
2. The _____ serves as a protective filter that regulates the entrance of certain substances into the brain from the bloodstream
   a) meninges b) white matter
   c) blood-brain barrier d) gray matter
3. The normal site for initiation of a neuronal action potential is the
   a) dendritic spine b) axon hillock
   c) axon terminal d) synaptic cleft
4. A bundle of axons in the central nervous system is called a
   a) nerve b) ganglion
   c) nucleus d) tract or commissure
5. A site of communication between neurons is
   a) axon b) dendrite
   c) synapse d) cell body
6. The distance which neurotransmitter must diffuse to cross a synaptic cleft is approximately
   a) 30 nm b) 300 nm
   c) 3 µm d) 30 µm
7. A major portion of the motor area of the brain is devoted to the
   a) senses b) foot and toes
   c) hand and fingers d) Pulses

8. Cell bodies of the peripheral receptor neurons associated with spinal sensory nerve roots are located

a) near the peripheral receptor organ
b) in spinal gray matter
c) in dorsal root ganglia
d) in spinal white matter

9. Small cells closely associated with neurons in peripheral ganglia may be called

a) satellite cells
b) pyramidal cells
c) postganglionic cells
d) autonomic cells

10. Carbidopa is useful in the management of Parkinson's disease because it is an

a) effective D2 agonist
b) effective D2 antagonist
c) effective peripheral decarboxylase inhibitor
d) effective central decarboxylase inhibitor

PART B (10 x 2 = 20 Marks)

11. Classify the human nervous system.
12. Define neuroglial cells.
13. Distinguish chemical and electrical synapse.
14. Where is Wernike’s area located and what is its function?
15. Compare neurophysiology and neuropharmacology.
16. Name any two pharmaceutical mediators released by neurons.
17. What are the four basic attributes of physical stimulus mediated by sensory systems?
18. List out the symptoms of Myasthenia Gravis.
19. Compare depression and Agrophobia.
20. What are the common symptoms of schizophrenia?

PART C (5 x 14 = 70 Marks)

21. a) Elaborate the structure and function of a neuron with diagram.

(OR)

b) Examine the different kinds of synapses and expound the chemical synapse in detail.

22. a) Interpret the mechanism of series of action that occurs during action potential.

(OR)

b) Criticize the role of sodium and potassium channels in action potential.

23. a) Explain the mechanisms of action of any two neurotransmitters.

(OR)

b) Discuss in detail on hypothalamic control of neuronal function.

24. a) Explain the neurological mechanisms of vision and audition.

(OR)

b) Appraise on the muscle contraction and describe with different variables.

25. a) Describe the regulation of feeding and sleep.

(OR)

b) Describe the mechanism, symptoms, diagnosis and treatment of Parkinson's disease.

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