

B.E./B.TECH. Degree Examination, December 2020
Seventh Semester
BT16018 - Neurobiology and Cognitive Sciences
(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions**PART A - (8 X 2 = 16 marks)**

1. **Any nerves outside the brain and spinal cord is called as**
 - a). ANS
 - b). PNS
 - c). CNS
 - d). SNS
2. **Synaptic knob contains**
 - a). Vesicles
 - b). Fluid
 - c). Ca^{2++}
 - d). Channels
3. **5-HT3 is the receptor of the following neurotransmitter**
 - a). Glycine
 - b). Histamine
 - c). Serotonin
 - d). GABA
4. **Gate Control Theory is used for**
 - a). Measuring Temperature
 - b). Measuring Pain
 - c). Measuring Pressure
 - d). Measuring Objects
5. Outline on BBB and its significance.
6. List out the chemicals that act on ACh systems as agonists and antagonists.
7. What are Ruffini Corpuscles? What is its role?
8. Define a Motor Unit. Show it with a pictorial representation.

PART B - (4 X16 = 64 marks)

09. (a) (i) With a neat sketch, discuss in detail on Brain and its sub organs. **(8)**
(ii) Explain the process of microgliogenesis in detail. **(8)**
- (OR)**
- (b) (i) With a neat illustration, explain the structure and functions of Oligodendrocytes. **(8)**

- (ii) Explain on membrane potential mechanism of neuronal cells with special reference to action potential. **(8)**
10. (a) (i) How do Dopamine acts as slow neurotransmitters through G protein-coupled receptor system? **(8)**
(ii) Explain in detail about the Artificial Neuronal System. **(8)**
- (OR)**
- (b) (i) Explain the criteria or mode of action of serotonin to act as an inhibitory neurotransmitter with illustrations. **(8)**
(ii) How do neuronal hormones regulates anxiety and depression? **(8)**
11. (a) (i) Explain the mechanism of muscle contraction with a neat illustration. **(8)**
(ii) Write mechanism associated with hearing. **(8)**
- (OR)**
- (b) (i) Write the basic neurological mechanism of sensation of touch. **(8)**
(ii) Write the anatomical nature of eye with a neat diagram and markings. **(8)**
12. (a) (i) Analyze how our body neuron recognizes the Olfactory and Gustatory sensations? **(8)**
(ii) How do we get motivate? Explain the neurological role in motivation. **(8)**
- (OR)**
- (b) (i) Discuss the basic mechanism associated with Sleep cycle. **(8)**
(ii) Explain the disorders of Alzheimer's and Huntington's diseases. **(8)**