



**NAVRACHANA  
UNIVERSITY**  
a UGC recognized University

**School:** School of Science  
**Program/s:** Biomedical Science  
**Year:** 3<sup>rd</sup> **Semester:** V  
**Examination:** End Semester Examination  
**Examination year:** December - 2021

**Course Code:** BM303

**Course Name:** Neuroscience

**Date:** 02/12/2021

**Total Marks:** 40

**Time:** 11:30 am to 1:30 pm

**Total Pages:** 2

**Instructions:**

- All questions are compulsory
- Draw diagram wherever required.
- \* COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL#
Q.1	<p><b>A) Choose the correct options (7)</b></p> <ol style="list-style-type: none"> <li>When smoking a cigarette, nicotine activates receptors that are normally activated by:               <ol style="list-style-type: none"> <li>Dopamine</li> <li>Norepinephrine</li> <li>Epinephrine</li> <li>Acetylcholine</li> </ol> </li> <li>Researchers discovered a new membrane channel that can change the membrane potential of neurons from -65 mV to -60 mV when activated, how would you characterize it?               <ol style="list-style-type: none"> <li>as a new depolarizing action potential.</li> <li>as a new hyperpolarizing IPSP.</li> <li>as a new depolarizing IPSP.</li> <li>as a new hyperpolarizing EPSP.</li> <li>as a new depolarizing EPSP.</li> </ol> </li> <li>Which of the following is NOT a type of hyperkinetic movement?               <ol style="list-style-type: none"> <li>Chorea</li> <li>Parkinson</li> <li>Athetosis</li> <li>Tremor</li> </ol> </li> <li>Adrenaline is the neurotransmitter involved in               <ol style="list-style-type: none"> <li>Sympathetic postganglionic fibers.</li> <li>Parasympathetic postganglionic fibers</li> <li>Sympathetic preganglionic fibers</li> <li>Parasympathetic preganglionic fibers</li> </ol> </li> <li>What determines the effect of neurotransmitter release on the post-synaptic neurons?               <ol style="list-style-type: none"> <li>the size of the action potential.</li> <li>the post-synaptic receptors.</li> <li>the neurotransmitter contained in the synaptic vesicles.</li> </ol> </li> </ol>	12	CO1, CO2, CO3, CO4	BT1, BT2, BT3



	<p>d) the concentration of calcium ions reached in presynaptic terminals.</p> <p>e) the size of the synaptic vesicles.</p> <p>6. Neuroplasticity does not involve which of the following</p> <p>a) Neurogenesis</p> <p>b) Synaptogenesis</p> <p>c) Neuronal loss</p> <p>d) Cortical reorganization</p> <p>7. Anatomically basal ganglia does not comprise of which of the following</p> <p>a) Putamen</p> <p>b) Corpora quadrigemina</p> <p>c) Subthalamic nucleus</p> <p>d) Substantia nigra</p> <p><b>B) Fill in the blanks (5)</b></p> <p>1. Dietary tryptophan converted to 5-hydroxy-tryptophan by _____ then to 5-HT by a non-specific _____.</p> <p>2. Catabolic functions are by _____ and anabolic functions are performed by _____ of PNS.</p> <p>3. Preganglionic neurons of sympathetic nervous system are located in _____ and _____.</p> <p>4. Initial neuronal migration occurs in a _____ fashion while later migration is _____.</p> <p>5. Cranial nerve VII is also known as _____ and supplies nerves to _____ region.</p>			
<b>Q.2</b>	<p><b>Short answer questions (2*5 = 10)</b></p> <p>1. Which are the major sources of glutamate?</p> <p>2. Describe the regulatory systems of ANS.</p> <p>3. What are tyrosine kinase receptors? Give some examples.</p> <p>4. Why is too much caffeine bad for health?</p> <p>5. Differentiate between Athetosis and Chorea</p>	<b>10</b>	CO1, CO2, CO3, CO4	BT1, BT2, BT3
<b>Q.3</b>	<p><b>Write short notes on (3*2 = 6)</b></p> <p>1. Theories of motor control</p> <p>2. Neuroplasticity</p>	<b>6</b>	CO1, CO2, CO3, CO4	BT1, BT2, BT3
<b>Q.4</b>	<p><b>Answer any 3 in detail (4*3 = 12)</b></p> <p>1. Discuss the major differences between inotropic and metabotropic receptors</p> <p>2. What are the various structural changes that occur in neuroplasticity?</p> <p>3. Enlist and explain the mechanisms by which movement disorders disrupt the motor function.</p> <p>4. Discuss the mode of action of agonists and antagonists.</p>	<b>12</b>	CO1, CO2, CO3, CO4	BT1, BT2, BT3

\*\*\*\*\*End of Question Paper\*\*\*\*\*