

Indian Institute of Science Education and Research – Kolkata, Date: 22-09-2018
Mid Sem, LS4105, Full marks: 15, 10:00 AM to 11:00 AM, Answer any Four:

1. Please explain Otto Loewi's experiments to show synaptic transmission is chemical in nature. Discuss the synthesis, mechanism of action and inactivation of acetylcholine. **2+3=5**
2. What are major differences between NMDA and AMPA receptors? Why excess glutamate is toxic to neuron? What is the mechanism of action of atropine? How curare toxin cause paralysis of muscles? **2+1+1+1=5**
3. Describe the evidence supporting vesicle fusion with the presynaptic membrane. What is SNARE? How many SNARE proteins do you find in nerve terminals? **2+1+2=5**
4. Classify neurons according to their structure and functions. What is the basis of resting membrane potential? Classify Ion Channel according to their activation? **2+1+2=5**
5. What is the mode of action of norepinephrine (NE) during synaptic transmission? How NE is synthesized in neuron? Describe the major mechanism by which norepinephrine is inactivated. What are the major functions of NE? **2+1+1+1=5**
6. Described experiments to show that organisers are involved in body axis formation in vertebrates? What do you mean by neural tube closer? If neural tube closer is defective: what will be the consequence? What is gastrulation? **2+1+1+1=5**

Sanku Kar

22/9/2018