

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

END SEMESTER EXAMINATION-2015

M.Pharm IV Semester

COURSE CODE: 14M1WPY431

MAX. MARKS: 45

COURSE NAME: Cellular and Molecular Neuropharmacology

COURSE CREDITS: 03

MAX. TIME: 3 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Section A

1. What is excitotoxicity?
2. VIATT term stands for?
3. Which disease reduces the efficiency of neuromuscular transmission?
4. Enlist 3 classes of signaling molecules?
5. Define neuropil
6. Define microscopic current
7. Name the precursors of acetylcholine and GABA.
8. What is the role of synaptotagmin?
9. Which bacteria produces tetanus toxin?

Section B

1. Enlist the categories of cellular receptors and diagrammatically explain them.
2. What are the two basis of classes of GTP binding protein? Differentiate them on the basis of structure and molecular targets.
3. Differentiate chemical and electrical synapse. What are upstream and downstream neurons?
4. Write short notes on (a) quantal release of neurotransmitters. (b) Loewi experiment demonstrating chemical neurotransmission. (c) functional properties of Na⁺/K⁺ pump.

Section C

1. Diagrammatically explain effector pathways associated with G protein coupled receptors linked with three different types of heteromeric G protein.
2. Draw the scheme for voltage clamping post synaptic muscle fiber. What is the effect of membrane voltage on host synaptic end plate currents?
3. Show the five stages of ionic movements due to Na⁺/K⁺ pump and show the topology of principal subunits of voltage gated Na⁺, Ca²⁺, K⁺ and Cl⁻ channels.
4. How is transcriptional regulation done by CREB? Give examples of neuronal signal transduction and show the mechanism of action of NGF.

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