



Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)

Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination –August 2020

VI Semester

Class : III UG

Time : 2 Hours

Major : Biochemistry and Biotechnology

Max. Marks : 50

15BBCC15 Molecular Physiology

Part A

10 x 1 = 10

Choose the Correct Answer

- Gases such as oxygen and carbondioxide cross the cell membrane by
 - passive diffusion through lipid bilayer
 - primary active transport
 - specific gas transport proteins
 - secondary active transport
- Which of the following is an example of primary active transport?
 - $\text{Cl}^- \text{HCO}_3^-$ exchange
 - $\text{Na}^+ \text{K}^+$ ATPase
 - $\text{Na}^+ \text{H}^+$ exchange
 - $\text{Na}^+ \text{Ca}^{2+}$ exchange
- Neurons are specialized to receive, conduct and transmit
 - action potentials
 - electrical signals
 - chemical signals
 - electrochemical signals
- Neurotransmitters are often stored in
 - synaptic buttons
 - microtubules
 - vesicles
 - endoplasmic reticulum
- Contractile protein of a muscle is
 - troponin
 - myosin
 - tubulin
 - tropomyosin
- The cross bridges involved in muscle contraction are located on the
 - actin myofilaments
 - myosin myofilaments
 - tropomyosin
 - dystrophin
- Chemical messengers secreted by ductless glands are called
 - lymph
 - platelets
 - plasma
 - hormones
- Which of the following is Growth hormone inhibiting hormone?
 - FSH
 - TRH
 - GHRH
 - Somatostatin
- Which of the following G-protein takes part in the regulation of vision ?
 - Gs family
 - Gi family
 - Gq family
 - None of the above
- Where the receptors for smell are located in the nose?
 - Olfactory epithelium
 - Olfactory foramina
 - Olfactory bulb
 - None of the above

Part B

3 x 6 = 18

Answer Any Three questions

Each answer should not exceed 400 words or two pages

11. Write notes on passive transport and its types.
12. Discuss the functions of lactose permease system.
13. Explain the structure of neuron with a neat diagram.
14. Write a note on action potentials.
15. Give a note on the types of muscles.
16. Draw and explain the structure of muscle cell.
17. Write notes on the functions of cyclic AMP.
18. Give an account on protein phosphorylation in cell signalling.
19. Write a short note on visual transduction.
20. What is signal transduction? Give an example.

Part C

2 x 11 = 22

Answer Any Two questions

Each answer should not exceed 800 words or four pages

21. Describe in detail about the types of ionic channels.
22. Discuss about structural features and chemical composition of plasma membrane.
23. Explain the mechanism of neurotransmission in synaptic cleft .
24. Describe the synthesis, storage and release of acetylcholine neurotransmitter.
25. Describe about the types of muscle protein and their functions.
26. Explain the molecular events involved in muscle contraction and relaxation.
27. Describe in detail about endocrine signalling with suitable examples.
28. Discuss the mechanism of secondary messenger system with suitable examples.
29. Explain mechanism of transduction in detail.
30. Give an detailed account on olfactory transduction.
