

### Unit III

1. Give an account of classification of enzyme by Enzyme Commission of IUBMB.
2. Write a note on specificity on enzyme actions.
3. Compare chemical catalysts and enzyme as biocatalysts.
4. Write the thermodynamic principle behind enzyme action.
5. How the inhibitors affect the enzyme activity?
6. Write the applications of enzymes.
7. Write the chemical basis of enzyme action.
8. What is catalytic triad? How it catalyzes the hydrolysis of protein?
9. How the carbon di-oxide is being removed from the tissues of living organisms?
10. Write the mechanism of action of carbonic anhydrase enzyme.
11. Write the role of restriction enzymes in Recombinant DNA technology.
12. Write a note on nucleoside monophosphate kinase.
13. Classify protease enzymes based on their mechanism.
14. Write a note on chlorophyll.
15. Write a note on Calvin cycle.
16. Write the significance of photosynthesis.
17. Write the salient features of metabolic pathways.

### Unit IV

1. Classify molecular machines and write the features of ATP- based protein molecular machines.
2. Draw a neat diagram of  $F_0F_1$  ATP synthase motors and write its coordination to have its function.
3. Write the structural features of flagellar motor with neat diagram.
4. Write the functions of myosin linear motor.
5. Write the structural features of f myosin linear motor with neat diagram
6. Write the structural features of f kinesin linear motor with neat diagram
7. Write a note on dynein motor.
8. Give an account of the components of biosensors with schematic diagram.
9. Write the working principle of biosensors.
10. Classify biosensors and write about the biological elements and transducers used in the construction of biosensors.
11. Write a note on glucose biosensors.
12. Write a note on the biosensors used in the detection of pollutants.
13. Write a note on the biosensors used in food industry.
14. Write various applications of biosensors.
15. Write a note on the organisms used in bioremediation.
16. Explain the factors determining bioremediation.
17. Write the role of plants in the removal of pollutants.
18. Write about in-situ bioremediation.
19. Write about ex-situ bioremediation.

20. What are the advantages and disadvantages of bioremediation?

#### Unit V

1. Write the salient features of various glial cells with appropriate diagram.
2. Write the functions of various glial cells
3. Write about the structural unit of nervous system with neat diagram.
4. Write a note on synapse.
5. How action potential is being developed in the cell membrane of neuron?
6. Write short note on action potential.
7. Write a short note on the anatomy of central nervous system.
8. Write short note on peripheral nervous system
9. Write the factors that cause disorders/diseases of nervous system with suitable examples.
10. Write short note on computer based neural networks.
11. Write the applications of computer based neural networks.
12. Classify and write the features of various immune responses.
13. Write the functions of lymphoid organs.
14. Write short note on the features of fluid systems of human body.
15. Write the surface barriers and chemical factors involved in innate immunity.
16. Write short note on the cells involved in innate immune system.
17. Write short note on humoral immunity.
18. Write short note on cell-mediated immunity.
19. Write short note on the diseases of the immune system.
20. Write a note on immune engineering.
21. Write short note on various types of intercellular signaling.
22. Write short note on different types of signaling mediated by secreted molecules.
23. Write short note on intracellular signaling.
24. Write a note on cell surface receptors involved in signaling process.
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