



## QUESTION BANK

### FAQ IN ACIDS, BASES, pH

#### SHORT ANSWER QUESTIONS

1. Write short notes on buffers
2. Strong and weak acids
3. Buffering capacity
4. pH

#### ESSAY TYPE QUESTIONS

1. Write an essay on biological buffer system.
2. Give an account of Donnan membrane equilibrium and its significance.
3. Derive Henderson-Hasselbalch equation and what are its importance.

### FAQ IN CARBOHYDRATES

#### SHORT ANSWER QUESTIONS

1. Structure and importance of maltose
2. Structure and importance of sucrose
3. Structure and importance of lactose
4. Structure and importance of cellulose
5. Structure and importance of starch
6. Structure and importance of glycogen
7. Mutarotation
8. Functions of glycoproteins
9. Polysaccharides
10. Haworth structure of glucose
11. Invert sugar
12. Reducing property of carbohydrates.
13. Mucopolysaccharides
14. Give the reaction of glucose with phenylhydrazine.

15. Inversion of sugar
16. Bacterial cell wall polysaccharides
17. Glycosidic bond
18. Hyaluronic acid

### **ESSAY TYPE QUESTIONS**

1. Classify carbohydrates with suitable examples.
2. Write an essay on structure and importance of mucopolysaccharide.
3. Give an account of physiologically important carbohydrates.
4. Illustrate with diagram the structures of different types of carbohydrates found in animal body.
5. Differentiate the following:  
a) Glucose and fructose b) Glycerophospholipids and sphingolipids.
6. Write an account on 1) Polysaccharides 2) glycolipids
7. Describe the structures and functions of any two homo and heteropolysaccharides.

### **FAQ IN LIPIDS AND MEMBRANE BIOCHEMISTRY**

#### **SHORT ANSWER QUESTIONS**

1. Essential fatty acids
2. Nomenclature of fatty acids
3. Waxes
4. Biological significance of phospholipids
5. Rancidity
6. Glycolipids
7. Gangliosides
8. Amphipatic property of phospholipids.
9. Lipoprotein
10. Bile salts
11. Prostaglandins

12. Differentiate any three of the following
  - i) Amylose and amylopectin
  - ii) RM value and iodine number
  - iii) Fats and waxes
13. Differentiate between the following
  - b) Dextrins and dextrans
  - c) Essential and Non essential fatty acids
14. Write short notes on structure of biological membrane.
15. Active transport
16. Passive transport
17. Diffusion
18. Uniport
19. Symport
20. Antiport
21. Factors influencing fluidity of membrane
22. Differentiate active transport from passive transport

### **ESSAY TYPE QUESTIONS**

1. Write structures and functions of phospholipids.
2. Explain different fat indices and their importance.
3. Explain different types of fatty acids & their functions.
4. What do you understand by membrane transport? What are the different processes?
5. Structure of cholesterol and its importance
6. Write an essay on different types of transport processes.
7. Classify the lipids and describe their functions. Explain why the energy yield of lipids is much greater than that of carbohydrates as per gram basis.
8. Explain the following a) Saturated and Unsaturated fatty acids b) Triacylglycerols.
9. Describe in brief the structure and biochemical functions of eicosanoids.
10. Steroids.
11. Discuss the biological importance of phospholipids, sphingolipids and glycolipids and write the structures of these class of lipids.

12. Draw the structures of phenylalanine, ATP and cholesterol.
13. Explain the different fat indices and their importance.
14. Differentiate between the following
  - ii. Amylose and amylopectin
  - iii. Saturated and unsaturated fatty acids

## **FAQ IN PROTEIN AND AMINOACIDS**

### **SHORT ANSWER QUESTIONS**

1. Essential and non-essential amino acids
2. Zwitter ion & isoelectric pH.
3. Reactions due to presence of carboxyl group on amino acids
4. Ninhydrin reaction
5. Importance of amino acids
6. What are the bonds stabilizing the protein structure.
7. Amphoteric nature of proteins
8. Denaturation and renaturation of protein
9. Peptide bond
10. Salting out of proteins
11. Amphoteric property of protein
12. Properties of proteins
13. Conjugated proteins

### **ESSAY TYPE QUESTIONS**

1. How are proteins classified? Explain with examples.
2. Give an account of different structural levels of proteins.
3. Classify amino acids based on the functional groups in the side chain. Give examples for each class.
4. Classify amino acids based on polarity with example.
5. Chemical reactions specific for alpha – amino groups.
6. Describe the physical and chemical properties of amino acids.
7. Differentiate
  - a) Polar-charged, Uncharged and non-polar amino acids
  - b) Uridine, pseudouridine and dihydrouridine

## FAQ IN NUCLEIC ACIDS

### SHORT ANSWER QUESTIONS

1. Structure and functions of t-RNA
2. Nucleoside
3. Pyrimidine bases
4. Ribosomes
5. Chemistry of nucleotides
6. Biological significance of nucleotides and nucleoside.
7. Denaturation of DNA
8. m-RNA

### ESSAY TYPE QUESTIONS

1. Give a detailed account on different type of RNA's.
2. Describe the salient features of Watson and crick model of B-DNA.  
Draw appropriate figure to explain the structure.
3. What are nucleotides and nucleosides? Illustrate with suitable structures.
4. Compare and contrast the structures of DNA and RNA.
5. Write the structures of
  - I. Deoxyribose
  - II. Tryptophan
  - III. Maltose
  - IV. Linoleic acid
6. Write short answers on
  - a) Physiologically important nucleotides
  - b) RM value
  - c) Salting out
  - d) Donnan membrane equilibrium