



Shree H. N. Shukla College of Science Rajkot
B.Sc. (Sem. II) (CBCS)

[MB-201]: BASICS OF BIOCHEMISTRY AND MICROBIAL CONTROL
Microbiology Question Bank

UNIT 1: SCOPE AND HISOTRY OF MICROBIOLOGY

One Marks Questions

1. Define element.
2. Give the name of six biologically important element.
3. Define compounds.
4. What are ions? How they are formed?
5. Define isotopes giving two examples.
6. What is cofactor?
7. Define acid giving example.
8. Define pH.
9. What do you understand by reduction?
10. Define redox potential.
11. What is condensation reaction?

Describe in short (2 & 3 marks)

1. define covalent bond giving two examples.
2. Define dipole moment. Give its importance.
3. Arrange the chemical bonds in the ascending order to their strength.
4. What is the importance of covalent bond? Why carbon forms the skeleton of all biomolecules?
5. State the importance of hydrogen bonds.
6. Define valance shell giving its role in formation of molecules.
7. What is molecular formula? Give formula of water.

Describe in detail (5 marks)

1. Scope of biochemistry.
2. Write a note on chemical bonds,
3. Write a note on molecules.
4. Oxidation reduction reactions.
5. Write a note on acid base reaction.

UNIT-2 BIOMOLECULES

One Marks Questions

1. Definition of Biomolecule.
2. Which one is example of carbohydrate?
3. What is peptide bond?



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4. Which one is the source of unsaturated fatty acids?
5. Mention types of RNA with abbreviation.
6. Genetic material is made up of _____.
7. What are the biomolecules found in cell membrane?
8. Main component of fungal cell wall is _____ which is a _____.
9. What type of molecules are present in nucleus of eukaryotes?
10. Difference between fats and wax.

Describe in short (2 & 3 marks)

1. Write functions of lipids and carbohydrates.
2. Short note on types of structure of proteins.
3. Write brief note on Nucleoside and Nucleotide. (With diagram)
4. Write different types of DNA in detail.
5. Explain epimer, enantiomer and mutarotation.
6. Explain supramolecular assembly along with example.
7. Difference between Homopolysaccharides vs Heteropolysaccharides.
8. Explain difference between glycogen and starch.
9. Explain types of biomolecules on the basis of size.
10. What are the essential fatty acids? Explain why they are essential.
11. Draw common structure of amino acid and explain D and L configuration.
12. Draw structure of Lysine, Tyrosine, Tryptophan, Glutamate, Asparagine and Aspartate.

Describe in detail (5 marks)

1. Explain essential amino acids along with examples and their sources.
2. Give a detailed note on steroid with their examples and function.
3. Write a note on polysaccharide in detail.
4. Explain types of proteins on the basis of their function.
5. Draw flow chart for types of carbohydrates and types of lipids.
6. Detailed note on types of amino acids.

UNIT-3 ENZYMES

One Marks Questions

1. What are enzymes?
2. Enzyme are basically made up of.....?
3. The enzyme which hydrolyses starch to maltose is.....?
4. Which compound influence feedback inhibition?
5. Define allosteric enzyme.
6. What is Km value of enzyme?
7. Give formula of m.m equation.



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8. The first enzyme to be purified and crystallized was.....
9. Lock and key theory was proposed by.....
10. Fat is hydrolysed by the enzyme is known as.....

Describe in short (2 & 3 marks)

1. Who proposed the word enzyme?
2. What is active site?
3. What is induced fit?
4. Define V_{max} .
5. What is cofactor?
6. What is coenzyme?
7. Write a note on lock and key model.
8. Write a brief note on regulation of enzyme activity.

Describe in detail (5 marks)

1. What is E.C. numbers? What is trival and systematic name of enzyme?
2. Write a note on ribozyme.
3. Name of various class of enzymes with examples.
4. Difference between enzyme and allosteric enzyme.
5. Write a note on physical properties of enzyme.
6. Mechanisms of regulation of enzyme synthesis.

**UNIT- 4 CONTROL OF MICROORGANISMS BY PHYSICAL AND
CHEMICAL AGENT**

One Marks Questions

1. Moist heat sterilization by autoclave is carried out at temperature.
2. Range of U.V. radiation is.....
3. Define dessication.
4. Define bacteriostatic.
5. Give an example of bacteriocidal agent.
6. Pasteurization is used for.....
7. Give an example of filters used in filtration technique.
8. give an example of halogen used in antimicrobial agent.
9. Which are quarternary ammonium compounds?
10. Give an example of gas used as antimicrobial agent.



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Describe in short (2 & 3 marks)

1. Which are ideal characteristics of ideal antimicrobial agents?
2. What is the need to control the microorganisms?
3. Describe pattern of death of microorganisms.
4. Write a note on autoclave.
5. What is TDT and TRT?
6. What is fractional sterilization?
7. Describe mode of action of U.V. rays.

Describe in detail (5 marks)

1. Write a note on moist heat sterilization.
2. Write a note on osmotic pressure.
3. Write a note on filtration.
4. Write a note on characteristics of ideal chemical agents.
5. Write mode of action of halogens.

UNIT-5 ANTIBIOTICS AND THEIR MODE OF ACTION

One word question

1. Define antibiotics.
2. Write down names of antibiotics used for cell wall synthesis inhibition.
3. Example of antifungal agent.
4. Give non-medical use of antibiotics.
5. Mode of action of Ampicillin.
6. Mode of action of Streptomycin.
7. Give full form of AZT.
8. Give example of commonly used antiviral agents.
9. Give example of antibiotic which causes damage to bacterial cell membrane.
10. Full form of HIV.

Describe in short (2 & 3 marks)

1. Give the characteristics of an ideal chemical antimicrobial agent.
2. Difference between antibiotics and chemical therapeutic agents.
3. Define narrow spectrum and broad-spectrum antibiotics.
4. Write note on natural and semi-synthetic penicillin.
5. Write down categories of antibiotics on the basis of their action.
6. Short note on Ampicillin.



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Describe in detail (5 marks)

1. Why antifungal, antiviral and antitumor drugs have toxicity?
2. Why antibiotics which used for bacterial protein synthesis inhibitions are non-toxic to animals and humans?
3. Write a note on Antiviral agents.
4. Write a note on Antifungal agents.
5. Write down fungal infections.