Rayat Shikshan Sanstha's

Yashavantrao Chavan Institute of Science, Satara
(Autonomous)

Department of Microbiology

B.Sc.I Sem II

Course Code : BMiT 201

Titel : Microbial Physiology

Question Bank

Q. 1 Give two name of followings (2 Marks/Question)

1. Enlist techniques of isolation of pure culture
2. Enlist biochemical tests for systemic study of pure culture.
3. Enlist common culture media components & write its anyone role
4. Define Autotrophs with examples.
5. Enlist five colonial characters & describe in brief the types of opacities of bateria.
6. Write growth factors requirement related types
7. Write stock culture preservation methods
8. Enlist methods of culture preservation for longer period
9. What are fastidious organisms?
10. Give classes of organism depending on their carbon source with example.
11. Define auxotroph with examples.
12. Write nutrition classification with examples
13. Enlist the types streak plate techniques & draw a diagram of any one.
14. Enlist uses of pure culture
15. Enlist the main two ways of cultivation of anaerobic bacteria.
16. Enlist cultural characters of colony on solid medium surface.
17. Enlist methods of anaerobic cultivation of bacteria.
18. What are semisynthetic media?
19. Write groups of bacteria depending upon carbon & energy source
20. Enlist examples of Differential media & their target organism

21. Enlist examples of Enriched media.
22. Enlist examples of enrichment media & their target organism
23. Enlist Examples of selective media and their target organisms.
24.Give disadvantages of pour plate techniques
25. Give advantages of streak plate technique.

Q. 2 Long answer questions (10 M /Question)

1. Define nutrition & explain in brief the nutritional requirement of bacteria.
2. Describe the classification of bacteria based on sources of carbon and energy.
3. Define nutrition. Explain in detail the nitrogen, phosphorous and sulfur sources for microorganisms.
4. Define culture media. Describe in details the components used in culture media & their role in the same.
5. Define culture media. Describe in brief natural, semisynthetic and synthetic media.
6. What are growth factors for microorganisms? Describe the auxotrophs, prototrophs and fastidious organisms.
7. Define culture media. Describe in brief differential, selective & enrichment media.
8. Explain in brief the importance of culture preservation. Discuss the lyophilization method of culture preservation.
9. Define pure culture. Discuss in brief the serial dilution technique, spread plate technique.
10. Define pure culture. Discuss in brief the streak plate technique, pour plate technique.
11. Why is it necessary to preserve the microbial culture? Discuss in brief the subculturing & overlaying with mineral oil techniques of culture preservation
12. Describe in detail the biochemical test - 'H2S production test' performed for identification of culture.
13. Describe in detail the biochemical test-'Catalase production test' performed for identification of culture.

14. Describe in detail the biochemical test –'sugar fermentation test' performed for identification of culture.

15. Describe in detail the biochemical test –'amylase and caseinase production test' performed for identification of culture

Q. 3 Short notes **(5 Marks/Question)**

1) Chemoautotroph
2) Photoautotroph
3) Photoheterotrophs
4) Chemoheterotrophs
5) Nitrogen sources for microorganisms.
6) Growth factors for microorganisms
7) Classification of microorganisms based on need of growth factor
8) Micronutrients for microorganisms
9) Classification of microorganisms based on energy sources
10) Differential media
11) Selective media
12) Enrichment media
13) Culture media component: Peptone and Yeast extract
14) Semisynthetic media
15) Types of culture media based on consistency
16) Streak plate technique
17) Pour plate technique
18) Serial dilution technique
19) Lyophilization
20) Preservation by oil overlay method.
21) Preservation by subculturing method
22) Cultivation of anaerobes by using hydrogen jar.
23) Anaerobic chamber
24) Types of organisms regarding to oxygen requirement
25) Hydrogen jar for cultivation of anaerobic bacteria.

26) Describe morphological characters of microorganisms.

27) Colony characteristics on solid media

28) Growth in liquid media & on slants

29) Describe in detail the detection of amylase production by microorganisms

30) Describe in detail the detection of caseinase production by microorganisms

****

Rayat Shikshan Sanstha's

Yashavantrao Chavan Institute of Science, Satara
(Autonomous)

Department of Microbiology

B.Sc.I Sem II

Course Code: BMiT 202

Title of course: Biochemistry

Question Bank

Q. 1 Define (2 Marks/Question)

1. Nucleic acid
2. Draw general structure of an amino acid
3. Replication
4. Mention any two examples of pentoses
5. Compound lipids
6. State two examples of disaccharides
7. Iodine number
8. Coenzyme
9. State two examples of polysaccharides
10. Transcription
11. Enzymes
12. Codon
13. Mention two examples of monosaccharides
14. Simple lipids
15. Cofactor
16. Derived Lipids
17. Proteins
18. Rancidity
19. Carbohydrates
20. Peptide linkage

21. Saponification number
22. State two types of secondary structures of protein
23. Fatty acids
24. State any two examples of globular proteins
25. Hydrolysis

Q. 2 Long answer questions (10 M /question)

1) Define Nucleic acid. Describe in detail chemical structure of DNA.
2) What are polysaccharides? Describe in brief structure and function of starch.
3) What are proteins? Describe in brief general properties and 4 different levels of organization of protein molecules.
4) Define Nucleic acid. Describe in detail chemical structure of RNA.
5) State general structure of amino acids. Describe in brief essential and non-essential amino acids with two examples of each type
6) Describe classification of proteins based on their molecular shape
7) Define Codon. Explain in detail types of RNA.
8) Describe the common types of secondary structures of proteins.
9) What are Lipids? Explain in detail compound Lipids.
10) Describe in brief structure and function of glycogen and cellulose
11) Describe in detail Derived Lipids with examples.
12) State general structure of amino acids. Describe concept of zwitter ion and amphoteric behaviour of amino acids
13) Explain in detail Phospholipids and glycolipids.
14) Explain dehydration synthesis of sucrose and lactose.
15) What are carbohydrates? Describe in brief classification of carbohydrates.
16) Give an brief account about Classification of lipids

Q. 3 Short notes (5 Marks/Question)

1. Nitrogen base
2. Dehydration synthesis of lactose
3. Mitochondrial DNA
4. Explain dehydration synthesis of maltose
5. t-RNA
6. Alpha helix structure
7. Beta pleated structure of proteins
8. Fatty acids
9. Dehydration synthesis of sucrose
10. Triacylglycerol
11. Detailed account of Glucose – open chain structure and cyclic structure.
12 Phospholipids
13. Starch
14. Glycolipids
15. Glycogen and cellulose
16. Cholesterol
17. Fibrous proteins
18. Simple lipids
19. Globular proteins
20. Salient features of DNA
21. Essential and non-essential amino acids with examples
22. m-RNA
23. Amino acid general structure and properties
24. Enzymes and their general properties.
25. Functions of proteins

26. Function of carbohydrates

27. Classes of enzymes

28. One example each of: Triose, Tetrose, Pentose, Hexose, Heptose

29. Primary and secondary structure of protein

30. Tertiary and Quaternary structure of protein