

Question bank

Subject title- Microbial Physiology and Enzymology

Class: B.Sc
MbBcC & MbBtC

Group: Common for

Unit - I Microbial Nutrition and Photosynthesis**Short answers**

1. Microbial Nutrition.
2. Macro Nutrients.
3. Micro Nutrients.
4. Growth factors.
5. Facilitated Diffusion.
6. Active Transport.
7. Group Translocation.
8. Photolithoautotrophs.
9. Chemolithoautotrophs.
10. Photo-organoheterotrophs.
11. Chemo-organoheterotrophs.
12. Methylotrophs.
13. Mixotrophs.
14. Autotrophs.
15. Heterotrophs.
16. Chlorophylls.
17. Bacteriochlorophyll.
18. Carotenoids.
19. Phycobiliprotein.
20. Cyclic photophosphorylation.
21. Non-Cyclic photophosphorylation.
22. Anoxygenic photosynthesis.

Long answers

1. Write note on Vitamins and their function in a bacterial cell.
 2. What is nutrition? Give a detail account of nutritional requirement of bacteria.
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3. What is active transport? How bacteria uptake their nutrition by this mechanism.
4. What is Facilitated diffusion? How bacteria uptake their nutrition by this mechanism.
5. What is Group translocation? How bacteria uptake their nutrition by this mechanism.
6. Discuss the process of Photo-organoheterotrophs and Chemo-organoheterotrophs in detail.
7. Discuss the process of Photoithoautotrophs and Chemolithoautotrophs in detail.
8. What are methylotrophs? How do they differ from methanogens?
9. Describe the photosynthetic apparatus in prokaryotes.
10. Describe briefly about anoxygenic photosynthesis.
11. Describe briefly about oxygenic photosynthesis.

Unit - II Microbial Growth

Short answers

1. Growth media.
2. Synthetic Media.
3. Non-Synthetic Media
4. Enrichment Media.
5. Selective Media.
6. Differential Media.
7. Transport Media.
8. Synchronous Growth Culture.
9. Batch Culture.
10. Continuous Culture
11. Bi-Phasic(Diauxic Growth)
12. Viable count.
13. Turbidometry.
14. Direct Microscopic.

Long answers

1. Describe different phases of growth in Batch Culture of microorganism.
2. Explain different types of Growth media used for culturing microorganism.
3. What is Continuous Culture? Why is Continuous culture system so useful to microorganism?
4. Describe various methods used to measuring Microbial growth.
5. Briefly discuss the Factors Influencing Microbial growth.
6. What is Synchronous growth culture? Why Synchronous growth system so useful to microorganism?

7. What is Biphasic growth? Why Synchronous growth system is useful to microorganism?

Unit III – Microbial Metabolism

Short answers

1. Aerobic Respiration.
2. Glycolysis.
3. Hexose Mono-Phosphate Pathway
4. ED Pathway.
5. Anaplerotic Reaction
6. Oxidative Phosphorylation
7. Proton Motive Force
8. Substrate Level Phosphorylation
9. β -Oxidation of Fatty Acids
10. Glyoxylate Cycle
11. Nitrate Respiration
12. Sulphate Respiration
13. Alcohol Fermentation
14. Lactic Acid Fermentation

Long answers

1. Explain briefly about anaerobic respiration.
2. What do you understand by electron transport chain?
3. Explain briefly about Glycolysis cycle?
4. Explain briefly about HMP cycle?
5. Explain briefly about E D pathway?
6. Explain briefly about TCA cycle?
7. Write difference between Oxidative Phosphorylation and Substrate Level Phosphorylation?
8. Give an account of β -Oxidation of fatty acids.
9. Explain briefly about aerobic respiration?
10. Explain briefly about Glyoxylate Cycle.
11. Give an account on Lactic acid fermentation
12. Give an account on Alcohol fermentation

Unit IV - Ezyme

Short answers.

1. Enzymes
2. Enzyme Unit
3. Bio-catalysis
4. Lock and Key model
5. Induced fit model
6. Co-enzyme

7. Co-factor
8. Competitive Inhibition
9. Un-Competitive inhibition
10. Non-Competitive inhibition
11. Allosteric Regulation
12. Activation energy.

Long answers

1. Give an account on Classification of Enzymes and Nomenclature of Enzyme?
2. What is Co-enzyme? Discuss their role in catalytic activity in living system.
3. Give a detailed account in inhibition of enzyme activity.
4. What is Bio-catalysis?
5. Write in detail about the factor affecting the catalytic activity of enzyme?
6. Give an account on Induced fit model of enzyme?
7. Give an account on Lock and Key model of enzyme?
8. Give an account on properties of enzyme.

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