**QUESTION BANK- 2024-2025**

**B.Sc. MICROBIOLOGY II YEAR**

**B-203**

**MICROBIAL PHYSIOLOGY**

Q1. Describe in detail about different nutritional types exhibited by microbes. (CO1)

Q2. Describe the various types of transport mechanism in the microorganisms. (CO3)

Q3. Explain the factors affecting growth of microorganisms. (CO2)

Q4. Explain in details about the types of media used for the cultivation of the microorganisms with suitable examples. (CO2)

Q5. Write shot note on- a.) Chemostat culture b.) Bacteriochlorophyll .)Synchronous growth d.) Continuous culture e.) Passive transport f.) ABC transporters. (CO2)

Q6. Differentiate between bacterial photosynthesis and plant photosynthesis. (CO4)

Q7. Write an assay on heterotrophic CO2 assimilation. (CO5)

Q8. Differentiate between a.) Solid and liquid cultures b.) Batch and continuous cultures (CO2)

Q9. Discuss in detail about the mechanism of group translocation in microorganisms. (CO2)

Q10. Give a general account of autotrophic CO2 fixation.(CO4)

Q11. Discuss bacterial photosynthesis in detail.(CO4)

Q12. Differentiate between active and passive transport mechanism. (CO3)

Q13. Discuss in detail autotrophic carbon dioxide fixation.(CO4)

Q14. Discuss C3 & C4 cycle in detail. (CO4)

Q15. Enlist the differences between oxygenic and anoxygenic photosynthesis. (CO4)

Q16. Write notes on the following: (a) Growth factors (b) Culture media. (CO2)

Q17. Differentiate between a chemostat and turbidostat. (CO2)

Q18. Discuss the following: (a) Light reactions (b) Dark reactions (CO3)

Q19. Discuss in detail about Facilitated diffusion (CO3)

Q20. Give a detailed account of group translocation in microbes. (CO3)

Q21. Draw a neat and well labelled Krebs Cycle. (CO5)

Q22. What are nutrients? State the differences between Micronutrients and Macronutrients. (CO1)

Q23. Discuss in detail about the role of temperature in microbial growth. (CO2)

Q24. Write a note on: (a) Shift-up approach (b) Shift down approach (CO2)

Q25. Discuss the role of following in microbial growth: (a) Radiation (b) Oxygen (c) Water activity (CO2)

Q26.Explain the different phases of a typical microbial growth curve in a closed system. (CO2)

Q27. Explain the Bacterial PTS. (CO2)

Q28. Write note on the following: (a) Vitamins in microbial growth (b) Amino acids in microbial growth (CO2)

Q29. Discuss in detail about heterotrophic carbon dioxide assimilation. (CO5)

Q30. Describe the importance of microbes and their diversity in nature. (CO1) **(June-2021)**

Q31. Discuss the process of photosynthesis in Eukaryotes.(CO4)**(June-2021)**

Q32. Write notes on: (CO2 and CO4) **(June-2021)**

1. Bacteriochlorophyll
2. Chemostat culture

Q33.Write notes on: (a) Growth curve (b) Growth kinetics. (CO2) **(June-2021)**

Q34. Explain the molecular mechanism of nutrient transport across the membrane in microbes.(CO3) **(June-2021)**

Q35. Describe in detail various chemical factors effecting growth in microbes. (CO2) **(June-2021)**

Q36. What is microbial physiology give a brief account of microbial metabolism process? (CO1) **(June-2021)**

Q37.Write notes on: (a)Synchronous growth (b) continuous culture (CO2) **(June-2021)**

Q38. Differentiate between solid culture and liquid cultures. Explain batch culture with the help of suitable example. (CO2) **(June-2021)**

Q39.Write notes on: (a) Secondary metabolites (b) Heterotrophic assimilation. (CO5) **(June-2021)**

Q40. With the suitable example describe various transport mechanism used for nutrient transport with special reference to transport of Glucose, Lactose, H2O and Na+ions. (CO3) (**June-2022**)

Q41. Discuss the nutritional requirements and mode of nutrition in microbes. (CO1) (**June-2022**)

Q42. Discuss the bacterial growth curve, measurement of growth and environmental factors affecting growth. (CO2) (**June-2022**)

Q43. Describe in detail about suphur metabolism. (CO1) (**June-2022**)

Q44. Discuss photosynthesis in prokaryotes and write note on Electron Transport Chain. (CO4) (**June-2022**)

Q45. Write a brief note on heterotrophic CO2 assimilation. (CO5) (**June-2022**)

Q46. How photosynthesis bacteria utilise light as energy source? With special reference to Cyanobacteria describe in detail the full pathway of photosynthesis. (CO4) (**June-2022**)

Q47. Draw a bacterial growth curve and express mathematically the generation time. (CO2) (**June-2022**)

Q48. Discuss in detail about the metabolic process of microorganism. (CO1)(**June-2022**)

Q49. Write short notes on the following:

Q50. (a) Synchronous Growth; (b) Rubisco; (c) Photosynthetic and accessory pigments of photosynthesis; (d) Active Transport; (e) Catabolism; (f) Fermentation; (g) Facilitated diffusion; (h) Chemostat Culture; (i)Batch Culture and (j) CFU (CO2 and CO3)(**June-2022**)

Q51.Discuss classification of microbes on the basis of nutritional types and also discuss the nutritional requirement and mode of nutrition in microbes. (CO1)

Q52. Write short notes on the following: (CO2) (**June-2024**)

1. Photosynthetic and accessory pigments of photosynthesis
2. Fermentation
3. Chemostat culture
4. CFU
5. Batch culture
6. Carotenoids

Q53. Define effect of physical and chemical factors on growth of microbes. (CO2) (**June-2024**)

Q54. Discuss photosynthesis in eukaryotes and write note on electron transport chain.   
(CO4) (**June-2024**)

Q55. Draw a bacterial growth curve and express mathematically the generation time. (CO2) (**June-2024**)

Q56. Discuss in detail about the metabolic process of microorganism. (CO1) (**June-2024**)

Q57.Write notes on the following: (CO1 and CO4) (**June-2024**)

1. Heterolactic fermentation
2. Cyclic photophosphorylation
3. Carotenoids

Q58. What do you mean by catabolism? Describe the glycolytic pathway for sugar catabolism. (CO1)(**June-2024**)

Q59. Differentiate between mitochondria and bacterial ETC. (CO1)(**June-2024**)

Q60. What do you mean by Active Transport? Explain the process of group translocation. (CO3) (**June-2024**)

