

ARS Main Descriptive Previous Questions - Agricultural Microbiology

Previous question papers

1. Write the contributions of Louis Pasteur to the fermentation industry.
2. Explain the role of 16S rDNA sequencing in microbial identification.
3. Discuss the importance of prebiotic and probiotic in foods.
4. List the distinguishing features of eubacteria and archaebacteria.
5. Explain the commensalic microbial interactions in soil with suitable example.
6. Explain DNA damage and repair mechanisms in bacteria with suitable example.
7. Define N₂-fixation, N-mineralization, N-immobilization, Denitrification and Nitrification.
8. Write the importance of downstream processing in fermentation industry.
9. Point out the role of mycorrhizae in agriculture and forestry.
10. Write a critical note on the Biodegradable plastics.
11. How do electron transport reactions generate the proton motive force?
12. How and in what ways does an input of organic matter, such as sewage, effect of O₂ content of a river or stream?
13. Distinguish between food borne infection and food poisoning.
14. Compare and contrast the production of natural, biosynthetic, semisynthetic -lactum antibiotics.
15. Compare and contrast primary and secondary metabolites and give an example for each.
16. Write short note on following
 - a) Trickling filters
 - b) Activated sludge
 - c) Oxidation ponds
17. Explain in brief the three important principles of design of experiments and write ANOVA table for Randomized Complete Block Design (RCBD).
18. Discuss the ways in which the microorganisms classified based on their requirement for energy, hydrogen and electron. Describe the nutritional requirements of the four major nutritional groups and give some microbial example of each.
19. Illustrate the difference between generalized and specialized transduction with suitable example.

20. Name fine foods that are prepared by microbial fermentation. Explain the mechanism of action of microorganisms in each example.

21. What are biosensors and how do they detect substances?

22. Explain the production of novel proteins using rDNA technology with suitable example.

23. Write short notes on:

a) Microbiological tests for potability of water

b) Bioremediation

c) Diauxic and synchronous growth

24. Compare and contrast manufacture of beer and wine

25. Define the following :

a) Plankton

b) Estuary

c) Benthos

d) Upwelling

e) Gyre