

Bajaj College of Science, Wardha

Practice Sheet during Lockdown

B.Sc. Sem IV

Subject: Microbiology

Industrial and Applied Microbiology

Long Questions (07 Marks)

1. Draw well labelled diagram of typical fermentor. Write in brief role of different parts of fermentor.
2. Describe any two methods used in primary screening of industrially important microorganism.
3. What are different fermentation processes.
4. Define strain improvement. Give its significance .Describe various methods of strain improvement.
5. Describe any two methods used in secondary screening of industrially important microorganism
6. Describe cell disintegration as a method employed for product recovery.
7. Discuss various raw materials used as a source of nitrogen in fermentation process.
8. Discuss any two methods employed for purification of product from fermented broth
9. Discuss various raw material used as a source of carbon in fermentation process.
10. Describe any two methods employed for extraction and crystallisation of products.
11. Discuss in detail biochemistry and production of Vit.B12
12. Discuss in detail production and biochemistry of citric acid
13. Describe in detail the process for production and biochemistry of beer.
14. Discuss in detail production and recovery of penicillin.
15. Give the detail account on production of Baker's yeast.

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16. Define Chlorination. Discuss in detail break point chlorination.
17. Describe in detail bacteriological analysis of water for faecal coliforms.
18. Describe in detail bacteriological analysis of water for faecal streptococci.
19. Discuss in detail slow sand filter.
20. Discuss in detail rapid sand filter
21. Discuss in detail process for collection and handling of water sample.
22. Describe trickling filter and activated sludge methods of sewage treatment.
23. Describe the working principle, design and advantages of oxidation pond.
24. Describe structure and working principle of septic and imhoff tank.
25. Discuss the physical, chemical and biological characteristics of sewage.
26. Discuss in detail tertiary treatment of sewage.
27. Define bio leaching. Discuss in detail bioleaching of copper.
28. Describe various food borne infections.
29. Discuss in detail Canning process.
30. Write a detail account on phosphate solubilizing bacteria as a biofertilizer.
31. Discuss various methods employed for preservation of food.
32. Discuss Anderson technique in detail.

Short Questions (3.5 Marks)

1. Design of typical fermentor
2. Giant Colony Method
3. Crowded Plate Technique
4. Strain improvement
5. Scope of Industrial Microbiology.
6. Sterilisation of fermentor
7. Optimisation of agitation during fermentation process.
8. Inoculum development for the fermentation process
9. Scale up of fermentation process.
10. Precipitation technique for harvesting of fermentation product.
11. Structure of Vitamin B12
12. Harvesting and crushing of grapes in wine preparation
13. Role of Hops flowers in beer production
14. Recovery of Penicillin.
15. Recovery of ethanol.

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16. Mechanism of chlorine action during water treatment.
17. Handling of water sample.
18. Significance of bacteriological analysis of water.
19. Describe False positive presumptive test
20. Indicators of excretal pollution.
21. Collection of water sample.
22. Classification of sewage
23. Biological characteristics of sewage.
24. Salient features of secondary screening.
25. Construction of Imhof tank.
26. Physical characteristics of sewage.
27. Food preservation by using low temperature.
28. How chemical pesticides are harmful
29. Write a note on Biopesticides.
30. Write a note on Food intoxication
31. Write a note on Food infection
32. Write a note on Mycorrhizae.

Shortest Questions (02 Marks)

1. Name any two mutagenic agents used in strain development.
2. Name the method used for sterilization of heat labile components of media.
3. What are primary metabolites? Give any two examples.
4. What are secondary metabolites? Give any two examples.
5. Give significance for strain improvement.
6. Give the different methods used for isolation of industrially important microorganism.
7. What is protoplast fusion?
8. What is batch and continuous fermentation process?
9. Define sparger and baffles.
10. What is the auxanography technique?
11. What is inoculum?
12. What is scale up process?

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13. Define inoculum development.
14. Give the significance of pretreatment of raw material.
15. Give the different sources of carbon required to formulate fermentation media.
16. Give the different sources of nitrogen required to formulate fermentation media.
17. Give the names of precipitating agents for recovery of product.
18. Enlist the names of antifoam agents.
19. Give the significance of antifoam agents
20. What is solvent-solvent extraction method for recovery of product.
21. What is red wine?
22. What are hops
23. What is carbonation of wine
24. How wine is matured
25. What are distilled beverages
26. Give two applications of baker's yeast
27. What are the raw materials used for ethanol production?
28. Name the top fermenting and bottom fermenting strain used for production of Industrial Alcohol.
29. Which microorganisms are use to produce citric acid?
30. What is sparkling wine?
31. What are the uses of single cell protein?
32. What is miling and mashing?
33. What is capping
34. What is semisynthetic penicillin?
35. Give the significance of clarification process in wine production.
36. Enlist different microorganisms used for SCP production?
37. What are faecal coliforms?
38. What are faecal streptococci
39. What is mean by backwashing?
40. What is superchlorination?
41. What are different methods of chlorination?
42. Why *E.coli* is called as faecal pollution indicator?
43. What is the basic difference between slow sand and rapid sand filter
44. What is clariflocculator

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45. Give the significance of clariflocculation
46. What are MFT and MTFT?
47. Give the advantages of membrane filter techniques.
48. Define break point chlorination.
49. What is RBC?
50. What is BOD, COD and ThOD ?
51. What trickling filter?
52. Name the organisms which are referred as faecal and non-faecal coliforms.
53. What is activated sludge?
54. Why rapid sand filter is called a mechanical filter?
55. Name the methods employed for primary and secondary screening.
56. What is zoogloal film?
57. What is oxidation pond
58. Give the physical characteristics of sewage
59. What is Endotoxin?
60. Define Canning.
61. Who is the father of canning process?
62. Define biopesticides and give its advantages.
63. Name the organisms used for production of Biopesticides
64. Enlist four chemical preservatives.
65. What is quick, slow and dehydro freezing?
66. What are biological control agents?
67. Define endo and ectendomycorrhizae.
68. Define microbial leaching.
69. Define PSB and give its examples.

For any queries, feel free to contact us on E-mail/ Whats App No.:

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