

Chapter 10

MICROBES IN HUMAN WELFARE

ONE MARK QUESTIONS:

1. Name the bacterium that converts milk into curd. (K)
2. Expand LAB. (K)
3. How does LAB convert milk into curd? (A)
4. Why small amount of curd is added to fresh milk as inoculums to convert it into curd? (A)
5. Write any one use of LAB other than curding. (K)
6. How LAB increases nutritional quality of milk? (A)
7. Mention the gas which is responsible for the puffed up appearance of dough. (K)
8. Dough used for making 'dosa' has puffed up appearance. Why? (A)
9. Name the scientific name of the microorganism used to for making bread. (K)
10. Write the scientific name of baker's yeast. (K)
11. Write the scientific name of fungus used in the fermentation of dough in bakery. (K)
12. What is toddy? (K)
13. Name the traditional drink obtained from fermenting sap from palm. (K)
14. Name the plant from which toddy is obtained. (K)
15. Name the bacterium that is used for production of 'Swiss cheese'. (K)
16. Name the gas responsible for large holes in 'Swiss cheese'. (K)
17. Mention the group of organisms which are used in the production of 'Roquefort cheese'. (K)
18. Write the scientific name of brewer's yeast. (K)
19. Name the metabolic reaction which results in the production of ethanol by yeast. (K)
20. Name alcoholic drink obtained without distillation. (K)
21. Name alcoholic drink obtained with distillation. (K)
22. Name the scientific name of the organism used for fermenting malted cereals and fruit juices to produce ethanol. (K)
23. Name the product obtained by fermenting malted cereals and fruit juices. (K)
24. Name the first antibiotic to be discovered. (K)
25. Name the scientist who discovered penicillin. (K)
26. Name the antibiotic that was extensively used to treat American soldiers who were wounded in World War II. (K)
27. Name the scientific name of the source organism for citric acid. (K)
28. Name the scientific name of the source organism for lactic acid. (K)
29. Name the scientific name of the source organism for butyric acid. (K)
30. Name the scientific name of the source organism for acetic acid. (K)
31. Name the scientific name of the source organism for streptokinase. (K)
32. Name the scientific name of the source organism for Cyclosporin A. (K)
33. Name the scientific name of the source organism for Statin. (K)
34. Name the scientific name of the source organism for ethanol. (K)
35. Name the scientific name of the source organism for penicillin. (K)
36. Name the microorganism which produces butyric acid.
37. Name the microorganism which produces acetic acid.
38. Name the microorganism which produces lactic acid.

39. Name the microorganism which produces acetic acid.
40. Name the enzyme used in laundry to remove oily stains? (K)
41. Why lipases are used in detergent formulations? (A)
42. Name an enzyme used to clarify bottled fruit juices. (K)
43. Why bottled juices are clearer than homemade juices? (A)
44. What is clot buster? (K)
45. Write the clinical significance of clot buster. (U)
46. A person has been diagnosed with 'clots' in his blood vessels. Suggest a bioactive chemical of microbial origin to treat this person. (A)
47. Write the clinical significance of Cyclosporin A. (U)
48. Patients who have undergone organ transplantation are administered Cyclosporin A. Why? (A)
49. Write the clinical significance of Statin. (U)
50. How statin reduces cholesterol? (A)
51. A person after a clinical analysis of blood finds out that his blood has high cholesterol content. Suggest a bioactive chemical of microbial origin to treat this person. (A)
52. Why sewage water cannot be discharged directly into rivers? (A)
53. How floating debris is removed in primary sewage treatment? (A)
54. How grit is removed in primary sewage treatment? (A)
55. Expand STP. (K)
56. What is primary sludge? (K)
57. Expand BOD. (K)
58. What is the significance of BOD? (K)
59. Define Biological Oxygen Demand? (K)
60. Why sewage water is treated until the BOD is reduced? (A)
61. What are anaerobic sludge digesters? (K)
62. What is active sludge? (K)
63. What are flocs? (K)
64. Write the scientific name of the microbe present in the rumen of the cattle. (K)
65. What is the function of *Methanobacterium* in the rumen of cattle? (K)
66. What are methanogens? (K)
67. Which is the major gaseous component of biogas? (K)
68. Define biocontrol. (K)
69. Biocontrol of insects and pests is desirable and beneficial compared to the use of insecticides and pesticides. Justify this with a reason. (A)
70. Identify the principle on which biocontrol is based. (A)
71. Why eradication of pests completely is undesirable? (A)
72. Mention a biocontrol agent which gets rid of aphids. (K)
73. Mention a biocontrol agent which gets rid of mosquitoes. (K)
74. Give an example for a biocontrol agent against butterfly caterpillar. (K)
75. Name the fungus used in biological control of pathogens which cause plant diseases. (K)
76. Why baculoviruses are excellent biological control agents? (A)
77. Name the species specific baculovirus which is used in the biocontrol of many insects and other arthropods. (K)
78. Expand IPM in relation to agriculture and farming. (K)
79. What are biofertilizers? (K)

80. Use of biofertilisers in agriculture ensures a better environment. Justify. (A)
81. Name the scientific name of the microorganism that serves as an important biofertilizer in paddy fields. (K)
82. Give an example for a fungus which forms mycorrhiza. (K)
83. Name the bacterium found in the root nodule of leguminous plants. (K)
84. Write the function of *Rhizobium* in roots of leguminous plants. (K)
85. Give an example for free living bacterium which fixes atmospheric nitrogen. (K)
86. Mention the role of *Azospirillum* as biofertilizer. (K)

TWO MARK QUESTIONS:

1. Mention any two significant roles of LAB. (K)
2. Write any two uses of LAB other than its role in converting milk into curd. (K)
3. Name any two distilled and two undistilled alcoholic beverages. (K)
4. Name two enzymes used to clarify bottled juices. (K)
5. Name any two bacteria which are used in the production of organic acids. (K)
6. Mention the scientific name of the source organism of streptokinase. How does this bioactive molecule function in our body? (U)
7. Mention the scientific name of the source organism of cyclosporin A. Mention the function of cyclosporine A. (K)
8. Mention the scientific name of the source organism of antibiotic penicillin. Mention the function of penicillin. (K)
9. List any two bioactive molecules of fungal origin and explain how those molecules help in restoring good health in humans. (U)
10. Mention the scientific names of the source organisms of butyric acid and acetic acid. (K)
11. Mention the scientific names of the source organisms of butyric acid and citric acid. (K)
12. Mention the scientific names of the source organisms of butyric acid and lactic acid. (K)
13. Mention the scientific names of the source organisms of acetic acid and citric acid. (K)
14. Mention the scientific names of the source organisms of acetic acid and lactic acid. (K)
15. Mention the scientific names of the source organisms of lactic acid and citric acid. (K)
16. Name the microbe used for statin production. How do statins lower blood cholesterol level? (A)
17. Mention the scientific names of source organisms of ethanol and butyric acid. (K)
18. Mention the scientific names of source organisms of ethanol and lactic acid acid. (K)
19. Mention the scientific names of source organisms of ethanol and acetic acid. (K)
20. Mention the scientific names of source organisms of ethanol and citric acid. (K)
21. Mention the scientific names of source organisms of ethanol and penicillin. (K)
22. Mention the scientific names of source organisms of ethanol and streptokinase. (K)
23. Mention the scientific names of source organisms of ethanol and cyclosporin A. (K)
24. Mention the scientific names of source organisms of ethanol and statin. (K)
25. Mention the scientific names of source organisms of butyric acid and penicillin. (K)
26. Mention the scientific names of source organisms of butyric acid and streptokinase. (K)
27. Mention the scientific names of source organisms of butyric acid and cyclosporin A. (K)
28. Mention the scientific names of source organisms of butyric acid and statin. (K)
29. Mention the scientific names of source organisms of lactic acid and penicillin. (K)
30. Mention the scientific names of source organisms of lactic acid and streptokinase. (K)
31. Mention the scientific names of source organisms of lactic acid and cyclosporin A. (K)

32. Mention the scientific names of source organisms of lactic acid and statin. (K)
33. Mention the scientific names of source organisms of acetic acid and penicillin. (K)
34. Mention the scientific names of source organisms of acetic acid and streptokinase. (K)
35. Mention the scientific names of source organisms of acetic acid and cyclosporin A. (K)
36. Mention the scientific names of source organisms of acetic acid and statin. (K)
37. Mention the scientific names of source organisms of citric acid and penicillin. (K)
38. Mention the scientific names of source organisms of citric acid and streptokinase. (K)
39. Mention the scientific names of source organisms of citric acid and cyclosporin A. (K)
40. Mention the scientific names of source organisms of citric acid and statin. (K)
41. Mention the scientific names of source organisms of penicillin and streptokinase. (K)
42. Mention the scientific names of source organisms of penicillin and cyclosporin A. (K)
43. Mention the scientific names of source organisms of penicillin and statin. (K)
44. Mention the scientific names of source organisms of streptokinase and cyclosporin A. (K)
45. Mention the scientific names of source organisms of streptokinase and statin. (K)
46. Mention the scientific names of source organisms of statin and cyclosporin A. (K)
47. Write the steps involved in primary treatment of sewage. (U)
48. What is BOD? Write its significance. (U)
49. What are flocs? Write their significance in sewage treatment. (U)
50. Name two groups of organisms which constitute flocs. Write their significance. (U)
51. Name any two gases produced during sludge digestion in sewage treatment. (K)
52. Write two uses of biogas. (U)
53. Biocontrol of insects and pests is desirable and beneficial compared to the use of insecticides and pesticides. Justify this with two reasons. (A)
54. Give any two examples for free living bacteria which can fix atmospheric nitrogen. (K)
55. Give any two examples for cyanobacteria which can fix atmospheric nitrogen. (K)
56. How do cyanobacteria act as biofertilizers? (A)

THREE MARK QUESTIONS:

1. Write about any three microorganisms and their role in household products. (U)
2. What are antibiotics? Name the first antibiotic to be discovered and the person who discovered it. (K)
3. Mention any three bacteria which are used in the production of organic acids. Mention the products obtained from them. (K)
4. Explain three biological methods to control pests and diseases. (U)
5. Mention the microbial source (scientific name) and the function of penicillin, cyclosporin A and statin. (K)
6. Mention the microbial source (scientific name) and the function of penicillin, cyclosporin A and streptokinase. (K)
7. Mention the microbial source (scientific name) and the function of penicillin, streptokinase and statin. (K)
8. Mention the microbial source (scientific name) and the function of streptokinase, cyclosporin A and statin. (K)
9. Explain the roles of lipase, pectinase and penicillin in human welfare. (K)
10. Explain the roles of lipase, pectinase and streptokinase in human welfare. (K)
11. Explain the roles of lipase, pectinase and statin in human welfare. (K)

12. Explain the roles of lipase, pectinase and cyclosporin A in human welfare. (K)
13. Explain the roles of pectinase, penicillin and streptokinase in human welfare. (K)
14. Explain the roles of pectinase, penicillin and statin in human welfare. (K)
15. Explain the roles of pectinase, penicillin and statin in human welfare. (K)
16. Explain the roles of penicillin, statin and streptokinase in human welfare. (K)
17. Explain the roles of penicillin, statin and cyclosporin A in human welfare. (K)
18. Explain the roles of statin, streptokinase and cyclosporin A in human welfare. (K)
19. Draw a neat labeled diagram of Biogas plant. (S)
20. Explain the role of any three microorganisms as biofertilizers. (K)
21. Mention any three significances for plants having symbiotic association with fungi. K
22. List any three benefits for plants from mycorrhiza. (U)

FIVE MARK QUESTIONS:

1. Explain the role of microbes in house-hold products. (U)
2. Explain the role of microbes in the production of industrial products. (U)
3. Explain different stages involved in sewage treatment. (U)
4. Describe the biogas plant with a neat labeled diagram. (U)
5. Explain the role of any five microorganisms as biocontrol agents.
6. Describe the role of microbes as biofertilizers. (U)
7. Write the scientific names of microbes from which following products are obtained: (K)
(a) Ethanol (b) Acetic acid (c) Butyric acid (d) Citric acid (e) Lactic acid
8. Write the scientific names of microbes from which following products are obtained: (K)
(a) Ethanol (b) Acetic acid (c) Butyric acid (d) Citric acid (e) Statin
9. Write the scientific names of microbes from which following products are obtained: (K)
(a) Ethanol (b) Acetic acid (c) Butyric acid (d) Citric acid (e) Streptokinase
10. Write the scientific names of microbes from which following products are obtained: (K)
(a) Ethanol (b) Acetic acid (c) Butyric acid (d) Citric acid (e) Cyclosporin A
11. Write the scientific names of microbes from which following products are obtained: (K)
(a) Acetic acid (b) Butyric acid (c) Citric acid (d) Lactic acid (e) Statin
12. Write the scientific names of microbes from which following products are obtained: (K)
(a) Acetic acid (b) Butyric acid (c) Citric acid (d) Lactic acid (e) Streptokinase
13. Write the scientific names of microbes from which following products are obtained: (k)
(a) Acetic acid (b) Butyric acid (c) Citric acid (d) Lactic acid (e) Cyclosporin A
14. Write the scientific names of microbes from which following products are obtained: (k)
(a) Butyric acid (b) Citric acid (c) Lactic acid (d) Statin (e) Streptokinase
15. Write the scientific names of microbes from which following products are obtained: (k)
(a) Butyric acid (b) Citric acid (c) Lactic acid (d) Statin (e) Cyclosporin A
16. Write the scientific names of microbes from which following products are obtained: (k)
(a) Citric acid (b) Lactic acid (c) Statin (d) Streptokinase (e) Cyclosporin A
17. Write the products obtained from following microorganisms: (K)
(a) *Clostridium butylicum* (b) *Trichoderma polysporum* (c) *Aspergillus niger* (d) *Monascus purpureus* (e) *Streptococcus*
18. Write the products obtained from following microorganisms: (K)
(a) *Clostridium butylicum* (b) *Aspergillus niger* (c) *Saccharomyces cerevisiae* (d) *Monascus purpureus* (e) *Streptococcus*

19. Write the products obtained from following microorganisms: (K)

(a) *Trichoderma polysporum* (b) *Aspergillus niger* (c) *Saccharomyces cerevisiae* (d) *Monascus purpureus* (e) *Streptococcus*

20. Mention the products obtained from the following microbes and explain their roles in human welfare: (K)

(a) *Methanobacterium* (b) *Trichoderma polysporum* (c) *Penicillium notatum* (d) *Monascus purpureus* (e) *Streptococcus*
