

Chapter 10 Microbes in Human Welfare

1. Lactic acid is formed by the process of

- (a) fermentation
 - (b) glycolysis
 - (c) citric acid cycle
 - (d) P-oxidation
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2. Nitrogen fixation in root nodules of *Alnus* is brought about by

- (a) *Frankia*
 - (b) *Azospirillum*
 - (c) *Nostoc*
 - (d) *Rhizobium*
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3. *Bacillus thuringiensis* is used to control

- (a) fungal pathogens
 - (b) nematodes
 - (c) bacterial pathogens
 - (d) insect pests.
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4. *Propionibacterium* produces large holes in swiss cheese due to the

- (a) process of oxidation of the dough
 - (b) formation of large amount of CO_2
 - (c) consumption of carbohydrates
 - (d) all of these
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5. The primary treatment of waste water involves the removal of [NCERT Exemplar]

- (a) dissolved impurities
 - (b) stable particles
 - (c) toxic substances
 - (d) harmful bacteria.
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6. Which one of the following is not a nitrogenfixing organism? [NCERT Exemplar]

- (a) *Anabaena*
- (b) *Nostoc*
- (c) *Azotobacter*
- (d) *Pseudomonas*

7. BOD of waste water is estimated by measuring the amount of [NCERT Exemplar]

- (a) total organic matter
- (b) biodegradable organic matter
- (c) oxygen evolution
- (d) oxygen consumption.

8. The vitamin whose content increases following the conversion of milk into curd by lactic acid bacteria is [NCERT Exemplar]

- (a) vitamin C
- (b) vitamin D
- (c) vitamin B₁₂
- (d) vitamin E.

9. Which one of the following alcoholic drinks is produced without distillation? [NCERT Exemplar]

- (a) Wine
- (b) Whisky
- (c) Rum
- (d) Brandy

10. The residue left after methane production from cattle dung is [NCERT Exemplar]

- (a) burnt
- (b) burned in land fills
- (c) used as manure
- (d) used in civil construction.

11. Methanogens, growing anaerobically on cellulosic material, produce

- (a) methane gas
- (b) methane and carbon dioxide
- (c) methane and hydrogen
- (d) methane, carbon dioxide, hydrogen.

12. Cyanobacteria are used as biofertilisers because they

- (a) are photosynthetic
- (b) grow easily anywhere
- (c) have mucilage
- (d) fix atmospheric nitrogen

13. Alexander Fleming, Ernest Chain and _____ were awarded Nobel Prize for the discovery of penicillin.

14. The enzymes, _____ are used in detergent formulations to remove oil stains.

15. Treatment of sewage water is done by the _____ microbes naturally present in the sewage.

16. Filtration and _____ are used in the primary treatment of sewage.

17. _____ species of fungi form mycorrhizae.

18. _____ are organisms, which enrich the nutrient quality of the soil.

19. _____ are masses of bacteria associated with fungal hyphae.

20. _____ produces the enzyme, used as clot buster.

21. Manufacture of beverages and other useful products for human welfare requires growing of microbes in large vessels, called _____ .

22. _____ is the traditional drink made by fermenting the sap from palms, in South India.

23. Match the list of microbes in Column I with their commercially important products in Column II.

Column I	Column II
A. Lactobacillus	1. Acetic acid
B. Clostridium butylicum	2. Citric acid
C. Aspergillusniger	3. Lactic acid
D. Saccharomyces cereviseae	4. Butyric acid
E. Acetobacter aceti	

24. Match the items in Column I with those in Column II.

Column I	Column II
A. <i>Penicillium notatum</i>	1. Biogas
B. <i>Propioni-bacterium sharmanii</i>	2. Statins
C. <i>Trichoderma polysporum</i>	3. Antibiotic, Penicillin
D. <i>Methano-bacterium</i>	4. Swiss cheese
	5. Cyclosporin A

25. *Trichoderma* is a fungus used as a biocontrol agent. [True/False]

26. Cyclosporin A is used for lowering the blood cholesterol level. [True/False]

27. Biogas plants are more often built in rural areas. [True/False]

28. Ladybird beetle and mycorrhizae control many insect pests. [True/False]

29. Bacteria, viruses and fungi are used as biofertilisers. [True/False]

Directions: (Q30 to Q33): Mark the odd one in each of the following groups.

30. *Anabaena*, *Streptococcus*, *Nostoc*, *Oscillatoria*.

31. Dragonflies, *Trichoderma*, Baculoviruses, *Streptococcus*.

32. Whisky, Wine, Brandy, Rum.

33. *Clostridium*, *Lactobacillus*, *Aspergillus*, *Acetobacter*.

34. What are prions?

35. Name the nutrient that gets enhanced while curdling of milk by *Lactobacillus*. [Delhi 2013C]

36. Name the gas released and the process responsible for puffing up of the bread dough when *Saccharomyces cerevisiae* is added to it. [Delhi 2013C]

Or

Name the metabolic pathway associated with the rising of dough in making bread. What makes the dough rise? [Delhi 2012C]

37. Which one of the following is the baker's yeast used in fermentation?
Saccharum barberi, *Saccharomyces cerevisiae*, Sonalika

38. What is toddy?

39. Write the scientific name of the microbe used for fermenting malted cereals and fruit juices. [Delhi 2011]

40. Give the scientific name of the source organism from which the first antibiotic was produced. [Foreign 2014]

41. Who won the Nobel Prize for the discovery of Penicillin?

42. Why do we prefer to call secondary waste water treatment as biological treatment? [HOTS]

43. What are 'flocs' formed during secondary treatment of sewage? [Delhi 2019]

44. Mention the information that the health workers derive by measuring BOD of a water body. [AI 2010]

45. Why is sewage water treated until the BOD is reduced? Give a reason. [Delhi 2010C]

46. Write any two places where methanogens can be found. [Delhi 2019]

47. Why is cow dung used in the generation of biogas? [HOTS]

48. Who developed the technology of biogas production in India?

49. What is meant by biocontrol?

50. What makes the Nucleopolyhedrovirus a desirable biological control agent? [AI 2013C]

Or

What is the significance of Nucleopolyhe-drovirus in pest management? [AI 2012C]
