

EXERCISE – I (Conceptual Question)**Build Up your Understanding**

1. Which one of the following is not true about antibiotics -
 (1) First antibiotic was discovered by Alexander Fleming
 (2) The term 'antibiotic' was coined by S. Waksman in 1942
 (3) Some persons can be allergic to a particular antibiotic
 (4) Each antibiotic is effective only against one particular kind of germ.
2. Which one of the microorganism is used for production of citric acid in industries ?
 (1) *Lactobacillus bulgaricus* (2) *Penicillium citrinum*
 (3) *Aspergillus niger* (4) *Rhizopus nigricans*
3. Formation of vinegar from alcohol is caused by
 (1) *Bacillus subtilis* (2) *Clostridium* (3) *Acetobacter aceti* (4) *Azotobacter*
4. Biogas consists of
 (1) Carbon monoxide, methane and hydrogen
 (2) Carbon dioxide, methane and hydrogen
 (3) Carbon monoxide, ethane and hydrogen
 (4) Carbon dioxide, ethane and hydrogen
5. The pioneer country in the production of 'Fuel alcohol' is
 (1) Japan (2) Brazil (3) Saudi Arabia (4) India
6. Most of the petro crops belong to family
 (1) Leguminosae (2) Euphorbiaceae (3) Rutaceae (4) Malvaceae
7. Biogas is produced by anaerobic breakdown of biomass of agricultural waste by methanogenic bacteria. It is a
 (1) One step process (2) Two step process (3) Three step process (4) Multistep process
8. Beer is obtained from :
 (1) Molasses (2) Grapes (3) Barley (4) Rye
9. Maximum percentage of alcohol present in the product of yeast fermentation :
 (1) Brandy (2) Gin (3) Rum (4) Wine
10. Which of the following Microorganisms use for swiss cheese :
 (1) *Propionibacterium* (2) *Geotrichum*
 (3) *Penicillium* (4) *Streptococcus*
11. Rate limiting material in biogas production is :
 (1) Methane (2) Cellulose (3) Starch (4) Acetic acid
12. Which group is not related with petro plantation :
 (1) Euphorbiaceae (2) Asclepiadiaceae (3) Apocyanaceae (4) Leguminaceae
13. What are the advantage of gobar gas over congenital utilization :

- (1) More efficient source of energy
 (2) Used as good fertilizer
 (3) Reduces the chances of spreading of pathogens
 (4) All the above
14. Milk is changed into curd by –
 (1) *Bacillus Megatherium* (2) *Acetobactor aceti*
 (3) *Xanthomonas citri* (4) *Lactobacillus acidophilus*
15. *Saccharomyces cerevisiae* is used in the formation of :-
 (1) Ethanol (2) Methanol (3) Acetic acid (4) Antibiotics
16. Modern farmer's can increase the yield of Paddy upto 50% by the use of :-
 (1) Cyanobacteria (2) Rhizobium (3) Mycorrhiza (4) Farm yard manure
17. Which one produce gas by decomposing the gobar (Dung) in gobar gas:-
 (1) Fungus (2) Virus
 (3) Methanogenic bacteria (4) Algae
18. Which of the following is used to manufacture ethanol from starch:-
 (1) Penicillin (2) *Saccharomyces* (3) *Azotobacter* (4) *Lactobacillus*
19. Which of the following is the pair of biofertilizers :
 (1) Azolla and BGA (2) Nostoc and legume
 (3) Rhizobium and grasses (4) Salmonella & E. Coli
20. Which bacteria is utilized in Gobar gas plant :-
 (1) Methanogens (2) Nitrifying bacteria
 (3) Ammonifying bacteria (4) Denitrifying bacteria
21. During the formation of bread it becomes porous due to release of CO₂ by the action of :-
 (1) Yeast (2) Bacteria (3) Virus (4) Protozoan's
22. During anaerobic digestion of organic waste, such as in producing biogas, which one of the following is left under graded :-
 (1) Lipids (2) Lignin (3) Hemi-cellulose (4) Cellulose
23. The term "antibiotic" was coined by :-
 (1) Edward Jenner (2) Louis Pasteur (3) Selman Waksman (4) Alexander Fleming
24. Recently Govt of India has allowed mixing of alcohol in petrol. What is the amount of alcohol permitted for mixing in petrol?
 (1) 5% (2) 2.5% (3) 10-15% (4) 10%
25. A free living nitrogen-fixing cyanobacterium which can also form symbiotic association with the water fern Azolla is :
 (1) *Anabaena* (2) *Tolypothrix* (3) *Chlorella* (4) *Rhizobium*

26. The technology of biogas production was developed in India mainly due to the efforts of
 (1) IARI (2) KVIC (3) both (1) and (2) (4) WHO
27. Biogas produced by anaerobic fermentation of waste biomass consists of :
 (1) methane (2) traces of H_2 , H_2S and N_2
 (3) CO_2 (4) all of these
28. Which one of the Following is used in the making of bread :
 (1) Rhizopus stolonifer (2) Saccharomyces cerevisiae
 (3) Zygasaccharomyces (4) Saccharomyces ludwigi
29. The drug Cyclosporin used for organ transplant patients is obtained from a
 (1) Bacterium (2) Fungus (3) Virus (4) Plant
30. A common biocontrol agent for the control of plant diseases caused by fungi is
 (1) Agrobacterium (2) Glomus (3) Trichoderma (4) Baculovirus
31. Which one of the following microbes forms symbiotic association with plants and helps them in their nutrition?
 (1) Glomus (2) Trichoderma (3) Azotobacter (4) Aspergillus
32. Lactic acid bacteria (LAB) grow in milk and convert it to curd and also improve its nutritional quality by increasing :-
 (1) Vitamin A (2) Vitamin B_{12} (3) Vitamin B_6 (4) Vitamin C and A
33. The puffed-up appearance of dough is due to –
 (1) Growth of LAB (2) Production of O_2 & ethanol
 (3) Production of CO_2 (4) Growth of yeast Monascus
34. Which of the following fermented beverage will not be produced by distillation of fermented broth.
 (1) Whisky (2) Brandy (3) Rum (4) Wine
35. Select the correct match-
 (1) Aspergillus niger - Acetic acid (2) Streptokinase - Immunosuppressive
 (3) Cyclosporin - A - Clot buster (4) Statins - Cholesterol lowering agent
36. Biogas is the mixture of gases produced by the microbial activity. The type of the gas produced depends upon-
 (1) type of microbes (2) type of organic substrate I waste
 (3) size of digester (4) 1 & 2both
37. Which biocontrol agent in very common in root ecosystem & is effective against several plant pathogens.
 (1) Baculoviruses (2) Trichoderma
 (3) Nucleopolyhedro virus (4) Ladybird beetle & Dragonflies

38. Which biocontrol agent is very common in root production of bioinsecticide is ?
 (1) *Bacillus subtilis* (2) *Bacillus thuringiensis*
 (3) *Agrobacterium* (4) *Azotobacter*
39. Bio pesticide include :
 (1) Only bioinsecticide (2) Only bioherbicide
 (3) Bioinsecticide & bioherbicide (4) Bioherbicide, bioinsecticide & biofertilisers
40. *Bacillus thuringiensis* is used to control :-
 (1) Moth (2) Flies (3) Mosquito (4) All the above
41. *Trichoderma* has proved a useful microorganism for:-
 (1) Gene transfer in higher plants
 (2) Biological control of soil-borne plant pathogens
 (3) Bioremediation of contaminated soils
 (4) reclamation of wastelands
42. Microbial insecticide is :
 (1) *Bacillus polymixa* (2) *Bacillus brevis*
 (3) *Bacillus subtilis* (4) *Bacillus thuringiensis*
43. Ladybird is useful to get rid of
 (1) Aphids (2) Mosquitoes (3) Boll worm (4) Jassids

ANSWER KEY

EXERCISE-I (Conceptual Question)

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| 1. (4) | 2. (3) | 3. (3) | 4. (2) | 5. (2) | 6. (2) | 7. (3) |
| 8. (3) | 9. (1) | 10. (1) | 11. (2) | 12. (4) | 13. (4) | 14. (4) |
| 15. (1) | 16. (1) | 17. (3) | 18. (2) | 19. (1) | 20. (1) | 21. (1) |
| 22. (2) | 23. (3) | 24. (1) | 25. (1) | 26. (3) | 27. (4) | 28. (2) |
| 29. (2) | 30. (3) | 31. (1) | 32. (2) | 33. (3) | 34. (4) | 35. (4) |
| 36. (4) | 37. (2) | 38. (2) | 39. (3) | 40. (4) | 41. (2) | 42. (4) |
| 43. (1) | | | | | | |