

BIOLOGY

NEET

CRASH COURSE

MICROBES IN HUMAN WELFARE

SMART ACHIEVERS
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MICROBES IN HUMAN WELFARE

1. Microbes are very important component of life on earth and many are very useful to human beings.
2. LAB (lactic acid bacteria) convert milk into curd. Dough, which is fermented by yeast (*Saccharomyces cerevisiae*) is used to make bread.
3. Taste, texture and flavour in cheese is imparted by bacteria and fungi.
4. Industrial products like lactic acid, acetic acid, alcohol and antibiotics are also produced by microbes.
5. Microbes are being used to treat sewage by the process of activated sludge formation and this helps in recycling of water in nature. Methanogens produce biogas while degrading plant waste.
6. Microbes can also be used to kill harmful pests and this biocontrol measure helps us to avoid use of toxic pesticides.
7. Microbes as biofertilisers can reduce use of chemical fertilisers and promote organic farming.

EXERCISE

- Q.1 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*
- Q.2 Formation of vinegar from alcohol is caused by
 (1) *Bacillus subtilis* (2) *Clostridium* (3) *Acetobacter aceti* (4) *Azotobacter*
- Q.3 For biogas production besides dung an extensive use of which weed is recommended in our country
 (1) *Mangifera indica* (2) *Hydrilla*
 (3) *Eichhornia crassipes* (4) *Solanum*
- Q.4 Beer is obtained from :
 (1) Molasses (2) Grapes (3) Barley (4) Rye
- Q.5 First fermented acid is :
 (1) Gluconic acid (2) Lactic acid (3) Fumaric acid (4) All the above
- Q.6 What are the advantage of gobar gas over conventional utilization :
 (1) More efficient source of energy
 (2) Used as good fertilizer
 (3) Reduces the chances of spreading of pathogens
 (4) All the above
- Q.7 Milk is changed into curd by –
 (1) *Bacillus Megatherium* (2) *Acetobacter aceti*
 (3) *Xanthomonas citri* (4) *Lactobacillus acidophilus*
- Q.8 Which one produce gas by decomposing the gobar (Dung) in gobar gas:-
 (1) Fungus (2) Virus
 (3) Methanogenic bacteria (4) Algae
- Q.9 Which of the following is used to manufacture ethanol from starch :
 (1) Penicillin (2) *Saccharomyces* (3) *Azotobacter* (4) *Lactobacillus*
- Q.10 Which bacteria is utilized in Gobar gas plant :-
 (1) Methanogens (2) Nitrifying bacteria
 (3) Ammonifying bacteria (4) Denitrifying bacteria
- Q.11 The term "antibiotic" was coined by :
 (1) Edward Jenner (2) Louis Pasteur (3) Selman waksman (4) Alexander Fleming

- Q.12 Yeast is used in the formation of:
 (1) Ammonia (2) Alcohol (3) Curd (4) Petrol
- Q.13 Biogas produced by anaerobic fermentation of waste biomass consists of:
 (1) methane (2) traces of H₂, H₂S and N₂
 (3) CO₂ (4) all of these
- Q.14 Rennet is used in :
 (1) Bread making (2) Fermentation (3) Cheese making (4) Synthesis of antibiotics
- Q.15 Which one of the following is used in the making of bread :
 (1) Rhizopus stolonifer (2) Saccharomyces cerevisiae
 (3) Zygasaccharomyces (4) Saccharomyces ludwigi
- Q.16 Which one of the following is a wrong matching of a microbe and its industrial product, while the remaining three are correct ?
 (1) *Aspergillus niger* - citric acid (2) Yeast - Statins
 (3) *Acetobacter aceti* - acetic acid (4) *Clostridium butylicum* - lactic acid
- Q.17 The drug Cyclosporin used for organ transplant patients is obtained from a
 (1) Bacterium (2) Fungus (3) Virus (4) Plant
- Q.18 A common biocontrol agent for the control of plant diseases caused by fungi is
 (1) Agrobacterium (2) Glomus (3) Trichoderma (4) Baculovirus
- Q.19 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*

AIIMS Special

Instructions for following questions (Q.20 to Q.26).

- (1) If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).
- (2) If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).
- (3) If Assertion is true statement but Reason is false, then mark (3).
- (4) If both Assertion and Reason are false statements, then mark (4).

- Q.20 **Assertion :** Curd is more nutritious than milk.
Reason : LAB present in curd checks growth of disease causing microbes.

- Q.21 **Assertion :** After 24 hrs toddy becomes unpalatable.
Reason : Toddy left for a few hours undergoes fermentation.
- Q.22 **Assertion :** Newer antibiotics are required to be produced regularly.
Reason : Pathogens often develop resistance to existing antibiotics.
- Q.23 **Assertion :** Cyclosporin A is antifungal and immuno suppressive medicine.
Reason : It stimulates activation of T-cells and prevents rejections.
- Q.24 **Assertion :** Barley, sorghum and millet are smoother crops.
Reason : They favour the growth of some common weeds.
- Q.25 **Assertion :** Agricultural output increased several times after introduction of DDT.
Reason : DDT was the first insecticide used on a wide scale.
- Q.26 **Assertion :** The disadvantages of chemical pesticides can be overcome by the use of biopesticides.
Reason : Biopesticides are the harmless pesticides of biological origin which are used to control weeds and pests without causing any significant damage.

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ANSWER KEY

Q.1	3	Q.2	3	Q.3	3	Q.4	3	Q.5	2	Q.6	4	Q.7	4
Q.8	3	Q.9	2	Q.10	1	Q.11	3	Q.12	2	Q.13	4	Q.14	3
Q.15	2	Q.16	4	Q.17	2	Q.18	3	Q.19	1	Q.20	2	Q.21	1
Q.22	1	Q.23	3	Q.24	3	Q.25	1	Q.26	1				