

# 14. MICROBES IN HUMAN WELFARE

1 x 2 = 2 Marks

## ROOT POINTS

1. **Microbes** (Micro organisms) are the organisms that are viewed only under Microscope.
2. **Microbes** are tiny micro organisms like **bacteria, fungi, yeasts** causing fermentation.
3. Some Microbes are **pathogenic**. They spoil food and edible items.
4. But **many microbes are very useful to human beings**.
5. Microbe derived products are **curd, dough, bread, cheese, Swiss Cheese etc.,**
6. Industrial microbial products are **Lactic acid, Acetic acid and Alcohol.**
7. Antibiotics like **Penicillin** is produced from microbes.
8. Antibiotics are used to control diseases like **diphtheria, whooping cough and pneumonia.**
9. Microbes are used to **treat sewage** and they help in recycling water.
10. Methanogens like **methane** are produced while degrading plant wastes.
11. **Biogas** is produced by microbes and used as a source of energy in rural areas.
12. Microbes are used to kill harmful **pests**. This process is called **biocontrol**.
13. **Biofertilisers** are produced from microbes and are used in the place of chemical fertilisers.
14. **Large holes** in 'Swiss cheese' are due to the production of large amounts of CO<sub>2</sub> . [IPE]
15. **Fermentors** are large vessels used to produce beverages and antibiotics on large scale. [IPE]
16. Microbe used for statin production is **Monascus purpureus yeast**. [IPE]
17. The **Nucleopolyhedroviruses** are used for biological control of insect pests. [IPE]
18. **Cyclosporin A** is used as immuno suppressive agent. [IPE]
19. The domestic sewage in large cities is **processed by aerobic and then anaerobic**

## FRUITY Qs OF IPE

1 x 2 = 2 Marks

1. Why does 'Swiss cheese' have big holes. Name the bacteria responsible for it.
2. What are fermentors?
3. Name a microbe used for statin production. How do statins lower blood cholesterol level?
4. What is Nucleopolyhedrovirus is being used for now a days?
5. Name any two industrially important enzymes.
6. Name an immuno suppressive agent. From where it is obtained?

135. Why does 'Swiss cheese' have big holes. Name the bacteria responsible for it.

[TS 17,18,20][AP 16,18,20]

- A:** 1) Large holes in 'Swiss cheese' are due to the production of large amounts of  $\text{CO}_2$  .
- 2) The Bacterium Propionibacterium is responsible for it.

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Propionibacterium looks  
Swiss cheese for Jerry  
but Tom spoiled it

136. What are fermentors?

[TS 22][AP 17,22]

- A:** Fermentors are large vessels used to produce beverages and antibiotics on large scale.

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Fermentors  
For  
Fermentation

137. Name a microbe used for statin production. How do statins lower blood cholesterol level?

[AP 15, 23] [TS 16,18,19,22]

- A:** 1) Microbe used for statin production is **Monascus purpureus yeast**.
- 2) The statins lower blood cholesterol level by competitively inhibiting enzyme which is responsible for synthesis of cholesterol.

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I like MP Yeast  
it produces statin  
that makes me less fatter

144. What is the group of bacteria found in both the rumen of cattle and sludge of sewage treatment?

- A:** Methanogens

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**Do You Know:**  
Methanogens are now used  
economically to save LPG by  
producing Methane gas (or)  
Gobber gas

146. Give any two microbes that are used in biotechnology.

- A:** 1) **Escherichia coli** : It is a plasmid used as a **cloning vector** in lab experiments.
- 2) **Agrobacterium tumifaciens**: Ti plasmid is used as a **gene transfer vector** in plants.

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E.Coli is watching C Tv  
while Abt is watching g Tv

147. In which food you find lactic acid bacteria? Name the bacterium.

- A:** 1) We find lactic acid bacteria in **Milk**.  
It converts milk into curd.
- 2) The bacterium unit is **Lactobacillus**.

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Lactobacillus helps my  
mother in curdling of milk