



## **BIOLOGY**

# **BOOKS - NEW JYOTHI BIOLOGY (TAMIL ENGLISH)**

## **MICROBES IN HUMAN WELFARE**

### **Ncert Text Book Questions**

1. Bacteria cannot be seen with the naked eyes, but these can be seen with the help of a microscope. If you have to carry a sample from your home to

your biology laboratory to demonstrate the presence of microbes under a microscope, which sample would you carry and why?



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2. Give examples to prove that microbes release gases during metabolism.



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3. In which food would you find lactic acid bacteria? Mention some of their useful

applications.



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4. Name some traditional Indian foods made of wheat, rice and Bengal gram (or their products) which involves use of microbes.



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5. In which way have microbes played a major role used in the production of the antibiotics.



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6. Name any two species of fungus, which are used in the production of the antibiotics.



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7. What is sewage? In which way can sewage be harmful to us?



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8. What is the key difference between primary and secondary sewage treatment ?



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9. Do you think microbes can also be used as source of energy? If yes, how?



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10. Microbes can be used to decrease the use of chemical fertilisers and pesticides. Explain how this

can be accomplished.



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11. Three water samples namely river water, untreated sewage water and secondary effluent discharged from a sewage treatment plant were subjected to BOD test. The samples were labelled A, B and C. but the laboratory attendant did not note which was which. The BOD values of the three samples A, B and C were recorded as 20 mg/L, 8 mg/L and 400 mg/L, respectively. Which sample of the water is most polluted? Can you assign the

correct to each assuming the river water is relatively clean ?



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**12.** Find out the name of the microbes from which Cyclosporin A (an immunosuppressive drug) and Statins (blood cholesterol lowering agents) are obtained.



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**13.** Find out the role of microbes in the following and discuss it with your teacher.

a. Single cell protein (SCP) b. Soil



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**14.** Arrange the following in the decreasing order (most important first) of their importance, for the welfare of human society. Give reasons for your answer.

Biogas, Citric acid, Penicillin and Curd.



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15. How do biofertilisers enrich the fertility of the soil /



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## New Evaluation Type Questions

1. Do you agree with the statement that microbes are omnipresent?



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2. A person complained to the doctor about the myocardial infraction he suffered and about a doctor he consulted earlier. The earlier doctor told about curing of the diseases using microbes. Will the doctor support the earlier doctor or not? Substantiate your answer.



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3. "Antibiotics are chemical substance produced from microbes".

a. What is the meaning of the term antibiotics?

b. Name the first antibiotic.

c. Who discovered antibiotics?



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4. Some discoveries are made unexpectedly.

a. What is it known as ?

b. Give one example.



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5. "BOD must be low in fresh water"

a . Expand BOD.

b. Define BOD.

c. Write the importance of BOD.



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6. Complete the following.

Microbes	Products
i. (a) .....	Penicillin
ii. Trichoderma polysporum	(b) .....
iii. Propionibacterium Sharmanii	(c) .....
iv. (d) .....	Statin



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7. The puffed-up appearance of dough is due to the production of  $CO_2$  gas. Can you tell which metabolic pathway is taking place resulting in the formation of  $CO_2$ ?



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8. What is baker's yeast ?



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9. Which among the following is used for making Roquefort cheese ?

A. *Propionibacterium sharmanii*

B. LAB

C. *Saccharomyces cerevisiae*      d . None of these

D. None of these

**Answer: D**



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**10. Why is curd more nutritious than milk ?**



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**11. What is alcoholic fermentation.**



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**12. Penicillin was a chance discovery. Is it true or not? If the answer is true give reason.**



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13. Today, we cannot imagine a world without antibiotics. Justify the statement.



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14. Observe the table and fill in the blanks .

Microbes	Acids
i. <i>Aspergillus niger</i>	a. ....
ii. <i>Acetobacter aceti</i>	b. ....
iii. ....	c. Lactic acid



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15. Name a bioactive molecule produced by *Trichoderma polysporum*. Mention the significance



also.



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**16.** Expand the following .

a. Bt cotton

b. BOD

c . LAB.



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**17.** What are methanogens?

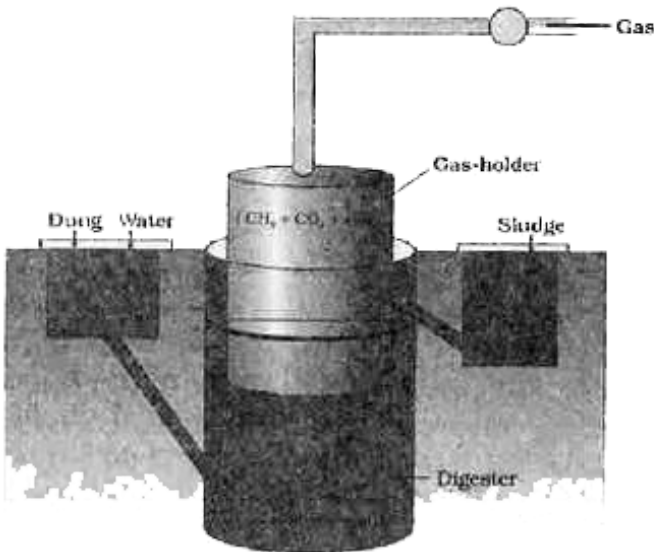


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18. What are baculoviruses ?

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19. Identify the figure and write a short note on it.



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**20.** Name a microbial biocontrol agent.



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**21.** Rhizobium, Azospirillum and Azotobacter act as biofertilisers. How?



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**22.** Do you think that fungi can help the plant to grow and develop resistance ? If yes how ?



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**23.** Name a microbe which serves as a biofertiliser in the paddy field.



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**24.** Biocontrol is the best alternative for chemical control. Justify your answer.



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25. Match the following.

Microbe	Uses
i. <i>Anabaena</i>	a. Biogas
ii. <i>Penicillium notatum</i>	b. Cheese
iii. <i>Methanobacterium</i>	c. Penicillin
iv. <i>Monascus purpureus</i>	d. Biofertiliser



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26. Name a fungus used for the control of pest.



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Previous Year Hse Questions

1. Ramu cultivated pea plants as an inter crop in his paddy field. After harvesting, he allowed the roots of the pea plants remain in the soil for some period.

a. Is the action of Ramu reasonable?

b. Justify your answer.



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2. Match column I with II.

Column I	Column II
i. Methano bacteria	a. Plague
ii. Bacillus thuringiensis	b. Cyclosporin A
iii. Azospirillum	c. Gobar gas production
iv. Trichoderma polysporum	d. Bio control
	e. Citric acid production
	f. Biofertilizer



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## Previous Year Competitive Exam Questions

1. Bacteria used as biogas fermenters are

- A. halophites
- B. methanogens
- C. thermoacidophils
- D. vibrio bacteria

**Answer: B**





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2. Rhizobium bacteria and root nodules of pea plant is an example for

- A. symbiosis
- B. commensalism
- C. predation
- D. parasitism

**Answer: A**



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3. What does Bt stand for in the popular crop Bt cotton

- A. Biotechnology
- B. Best type
- C. Bacillus tomentosa
- D. Bacillus thuringensis

**Answer: D**



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4. BOD stands for .....

- A. Biological Oxygen Demand
- B. Biosynthetic Oxygen Demand
- C. Biogeochemical Oxygen Destroyer
- D. Biological Oxygen Dimension

**Answer: A**



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5. Match the microbes in Column I with their commercial/industrial products in Column II and choose the correct answer.

Column I

- i.* *Aspergillus niger*
- ii.* *Clostridium butylicum*
- iii.* *Saccharomyces cerevisiae*
- iv.* *Trichoderma polysporum*
- v.* *Monascus purpureus*

Column II

- a.* ethanol
- b.* statins
- c.* citric acid
- d.* butyric acid
- e.* cyclosporin A

A. *i* - *d*, *ii* - *e* , *iii* - *b* , *iv* - *a* , *v* - *c*

B. *i* - *e*, *ii* - *d*, *iii* - *a* , *iv* - *b*, *v* - *c*

C. *i* - *c*, *ii* - *d*, *iii* - *a*, *iv* - *e* , *v* - *b*

D. *i* - *c*, *ii* - *d*, *iii* - *e*, *iv* - *a*, *v* - *b*

**Answer: C**



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