



BIOLOGY

BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

MICROBES IN HUMAN WELFARE

Textbook Evaluation Solved

1. Which of the following microorganism is used for production of citric acid in industries ?

A. *Lactobacillus bulgaris*

B. *Penicillium*

C. *Aspergillus niger*

D. *Rhizopus nigricans*

Answer: c



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2. Which of the following pair is correctly matched for the product produced by them ?

A. *Acetobacter aceti* - Antibiotics

B. *Methanobacterium* - Lactic acid

C. *Penicilium notatum* - Acetic acid

D. *Saccharomyces cerevisiae* - Ethanol

Answer: d



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3. The most common substrate used in distilleries for the production of ethanol is

A. Soyameal

B. Groundram

C. Molasses

D. Corn meal

Answer: c



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4. Cry toxins obtained from *Bacillus thuringiensis* is are effective against for _____

A. Mosquitoes

B. Flies

C. Nematodes

D. Bollworms

Answer: d



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5. Cyclosporin - A is an immunosuppressive drug produced from

A. *Aspergillus niger*

B. *Manascus purpureus*

C. *Penicillium notatum*

D. *Trichoderma polysporum*

Answer: d



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6. Which of the following bacteria is used extensively as a bio - pesticide ?

A. *Bacillus thurigiensis*

B. *Bacillus subtilis*

C. *Lactobacillus acidophilus*

D. *Streptococcus lactis*

Answer: a



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7. Which of the following is not involved in nitrogen fixation ?

A. Pseudomonas

B. Azotobacter

C. Anabeana

D. Nostac

Answer: a



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8. CO_2 is not released during

A. Alcoholic fermentation

B. Lactate fermentation

C. Aerobic respiration in animals

D. Aerobic respiration in plants

Answer: b



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9. The purpose of biological treatment of waste water is to _____ .

A. Reduce BOD

B. Increase BOD

C. Reduce sedimentation

D. Increase sedimentation

Answer: a



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10. The gases produced in anaerobic sludge digesters are

A. Methane , oxygen and hydrogen sulphide.

B. Hydrogen sulphide , methane and sulphur dioxide.

C. Hydrogen sulphide, nitrogen and methane.

D. Methane , hydrogen sulphid and CO_2

Answer: d



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11. How is milk converted into curd ? Explain the process of curd formation.



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12. Give any two bioactive molecules produced by microbes and state their uses.



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13. What is biological oxygen demand ?



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14. Explain the role of cry-genes in genetically modified crops.



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15. Write the key features of organic farming.



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16. Justify the role of microbes as a bio-fertilizer.



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17. Write short notes on the following.

(i) Brewer's yeast (ii) *Ideonella sakaiensis* (iii)

Microbial fuel cells



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18. List the advantages of biogas plants in rural areas.



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19. When does antibiotics resistance develop ?



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



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[Additional Questions 1 Marks Questions](#)

1. The leavering of the dough during fermentation is due to

A. Formation of ethyl alcohol

B. Formation of CO_2

C. Formation of oxygen

D. Action of zymase enzyme

Answer:



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2. Match list I with list II:

List I

Biofertilizer

- (i) Free living N₂
- (ii) Symbiotic N₂
- (iii) P Solubilizing
- (iv) P Mobilizing

List II

Organisms

- (a) *Aspergillus*
- (b) *Amanita*
- (c) *Anabaena azollae*
- (d) *Azotobacter*



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3. Name the person who was the first to use the term antibiotic.

A. Selman

B. Alexander Flemming

C. Earnest Chain

D. Howard Florey

Answer:



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4. Queen of drugs _____



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5. Tetracycline is a

(i) bactericidal antibiotic

(ii) bacteriostatic antibiotic

(iii) narrow spectrum antibiotic

(iv) Broad spectrum antibiotic

A. I and iii

B. ii and iii

C. I and iv

D. ii and iv

Answer:





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6. Chlortetracycline was isolated from the culture.....

A. *Streptomyces aureofaciens*

B. *Streptomyces griseus*

C. *Streptococcus lactis*

D. *Aspergillus niger*

Answer:



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7. Identify the name and the formula of industrial alcohol.

A. Butanol , C_4H_9OH

B. Propanol , C_3H_7OH

C. Ethanol , C_2H_5OH

D. Methanol , CH_3OH

Answer:



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8. Pick the bacterial species which is not used in ethanol formation.

A. *Zymomonas mobilis*

B. *Sarcina ventriculi*

C. *Saccharomyces cerevisiae*

D. *Streptomyces aureofaciens*

Answer:



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9. Match the Microbes with the respective organic acids

Microbes

Organic acids

(a) *Aspergillus*

(i) Acetic acid

(b) *Acetobacter* species

(ii) Citric acid

(c) *Rhizopus* species

(iii) Butyric acid

(d) *Clostridium* species

(iv) Fumaric acid



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10. Human insulin is being commercially produced from a transgenic species of

A. *Escherichia*

B. Mycobacterium

C. Streptococcus

D. Penicillin

Answer:



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11. Select the correct statement from the following.

A. Primary treatment of sewage involves biological oxidation

B. Excreta of cattle is commonly called Gobur

C. Delta endotoxin of *Bacillus thuringiensis* is encoded by pen - genes.

D. *Trichoderma* is a free - living bacteria very common in root ecosystem.

Answer:



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12. Oil stains in laundry can be removed using....

.....

A. Peptidane

B. Protease

C. Amylase

D. Lipass

Answer:



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13. Find the odd sentence out.

(i) Biogas primarily consists of methane with CO_2 and hydrogen

(ii) the greater the BOD of waste water the more its polluting potential

(iii) World biofuel day is observed on 10th August

(iv) Cyclosporin A is obtained from *Trichoderma polysporum*.

A. I and iii

B. ii and iv

C. I and iv

D. none of the above

Answer:



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14. Match with correct pair

- | | |
|--------------------|------------------------------------|
| (a) Biofertilizer | (i) <i>Bacillus thuringiensis</i> |
| (b) Bioremediation | (ii) <i>Rhizobium</i> |
| (c) Biopesticide | (iii) <i>Pseudomonas</i> |
| (d) Bioherbicide | (iv) <i>Phytophthora palmivora</i> |



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15. Name the genus of virus which are used as effective Biocontrol agent.



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16. Assertion : Probiotics are compounds in food which induce activity of beneficial organisms

Reason : Cheese is a probiotic.

A. Statement 1 is correct . Statement 2 is incorrect.

B. Statement 1 is incorrect . Statement 2 is correct.

C. Both the statements 1 and 2 are incorrect.

D. Both the statements 1 and 2 are correct.

Answer:



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17. Statement 1 : *Saccharomyces cerevisiae* is commonly called as Baker 's yeast.

Statement 2 : Yogurt is produced by the

fermentation of milk by *saccharomyces cerevisiae*

A. Statement 1 is correct . Statement 2 is incorrect.

B. Statement 1 is incorrect . Statement 2 is correct.

C. Both the statements 1 and 2 are incorrect.

D. Both the statements 1 and 2 are correct.

Answer:



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18. The flavour in the yogurt is due to

A. Formal dehyde

B. Lactate

C. Acetaldehyde

D. Caesin

Answer:



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19. Assertion (A) : Streptomycin is an antibiotic

Reason (R) : Antibiotics are microbial products
inhibits the growth of pathogenic microbe.

A. A is right R is wrong.

B. R explains A.

C. A and R are wrong

D. A and R are right . R cannot explain A .

Answer:



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20. Assertion (A) : Oenology deals with study of wine and its preparation.

Reason (R) : Zymology deals with biochemical process of fermentation and its uses.

A. A is right R is wrong.

B. R explains A.

C. A and R are wrong

D. A and R are right . R cannot explain A .

Answer:



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21. In primary sewage treatment , the floating debris are removed by

- A. Distillation
- B. Sedimentation
- C. Sequential filtration
- D. Biological oxidation

Answer:



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22. (i) The Yamuna action plane is a bilateral project.

(ii) Biogas plant works on a aerobic mode.

(iii) Trichoderma species occur in the root system.

(iv) Bioremediation is a artificial process

A. India and Pakistan Government

B. India and Japan Government

C. India and Chaina Government

D. India and Srilanka Government

Answer:



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23. Select the correct option denoting the proper sequence of sewage treatment.

A. Filtration , Sedimentation , Aeration ,
Biological oxidation and UV radiation

B. Sedimentation , Filtration , Biological
oxidation , Aeration and UV radiation.

C. Filtration , Aeration , Biological oxidation ,
Sedimentation and UV radiation.

D. UV radiation , Sedimentation , Filtration ,
Biological oxidation and Aeration.

Answer:



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24. The Ganga action plan was launched on

.



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25. Which of the following plant species is the most suitable oilseed for biodiesel production ?

A. Ground nut

B. Areca nut

C. Jatropha

D. Phyllanthus anarus

Answer:



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26. Match the following medicinal products with their microbial source .

- | | |
|-------------------|-----------------------------|
| (a) Humulin | (i) Streptococcus |
| (b) Statins | (ii) Trichoderma polysporum |
| (c) Cyclosporin A | (iii) Monascus purpureus |
| (d) Streptokinase | (iv) E -coli |



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Additional Questions 2 Mark Questions

1. What does LAB stands for ? Give two examples.



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2. Define LAB.



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3. Given below are the food products obtained by microbial action Name the respective organism responsible for their production (a) Swiss Cheese (b) Bread dough



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4. What is SCP ?



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5. What is a fermentor ?



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6. What are antibiotics?



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7. Give reason . (a) Flavour in Yogurt (b) Large holes in Swiss Cheese



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8. Name few industrial microbial product.



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9. Name few home - made microbial products.



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10. Who derived the term antibiotic ? Name the antibiotic which he discovered.



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11. The first antibiotic was extracted from fungus . Who had done it ? And also mention the fungal species used.



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12. Differentiate bactericidal antibiotic and bacteriostatic antibiotic.



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13. Name any four antibiotics



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14. Compare Broad spectrum antibiotics with narrow spectrum antibiotics.



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15. What is antibiosis ?



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16. What is zymology ?



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17. *Saccharomyces cerevisiae* commonly called brewer's yeast justify



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18. How wine is made ? Which organism is involved in the process.



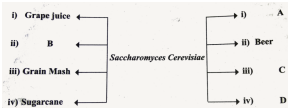
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19. Name the 2 types of grape wine . How they differ from one another ?



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20. *Saccharomyces Cerevisiae* is a widely used fungus in making beverages . Considering this complete the table by mentioning the raw material and respective product.



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21. The other name of industrial _____ alcohol.



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22. Pick the bacterial species which is not used in ethanol formation.



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23. Name the substrates used for production of industrial alcohol.



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24. Write the equation for alcoholic fermentation.



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25. Complete the table by filling with respective organic acid and microbes.

Organic Acid	Microbes
Acetic acidW.....
.....X.....	<i>Aspergillus niger</i>
Fumaric acidY.....
.....Z.....	<i>Clostridium butyricum</i>



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26. Genetically engineered Streptococci are used as clot buster for removing clots from the blood vessels of patients who have undergone myocardial infarction.



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27. Write a brief note on (a) Cyclosporine A (b) Statins



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28. State the source of statins and its medical role.



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29. Expand and define BOD.



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30. What is 'activated sludge' in sewage treatment ?



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31. Give a brief account on Ganga action plan.



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32. Name the biocontrol agents used to get rid of Aphids & mosquito larvae .



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33. How insect resistant plants are developed using *Bacillus thuringiensis* ?



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34. Which group of insects can be controlled by using delta - endotoxins of Bt - crops ?



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35. Name a microbial biocontrol agent.



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36. How Rhizobium acts as a efficient bio - fertilizer?



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37. Give examples of free living nitrogen fixing bacteria.



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38. Name few blue green alga (BGA)



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39. Give definition for organic farming?



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40. Pseudomonas putida and pollution abatement - comment .



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41. Complete the following equation by identifying the microbes involved in bio remediation .

PET Plastics \xrightarrow{A} terephthalic acid , Ethylene glycol

Trichloro ethane \xrightarrow{B} Non - toxic ethane



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Additional Questions 3 Mark Questions

1. Differentiate between Probiotics and Pathogenic bacteria.



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2. How is yoghurt produced ?



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3. Name the scientists who were awarded Nobel Prize in 1945 for discovering the penicillin drug

& its role as a antibiotic.



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4. Both Tetracycline and Streptomycin are broad spectrum antibiotics yet functionally discriminates . How ?



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5. Under which conditions does a bacterium develops resistance against antibiotics?



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6. Write a short on Pathaneer



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7. Explain in simple about the production process of industrial alcohol.



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8. Write the percent of alcohol in Beer , Wine and Distilled spirits



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9. Complete the table.



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10. Name the enzymes used as clarifier for Bottled juices.



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11. Write a short note on bio diesel.



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12. What actions did the government of India take to conserve water bodies?





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13. Give an account on MFC.



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14. How *Bacillus thuringiensis* provides insect resistance?



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15. Give an account on Weedicides .



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16. What are the Bio - fertilizers Mention their role in agriculture ?



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17. What re mycorrhiza ?



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18. Write a brief note on Cyanobacteria & its significances.



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19. Define bio remediation and its types.



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Additional Questions 5 Mark Questions

1. Explain the role of microbes in the production of enzymes & bio active molecules ?



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2. Describe the stages of Sewage treatment process



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3. How microbes are used in Gobar gas production ?



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4. What is Bioremediation ?



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Higher Order Thinking Skill Hots Questions

1. One can notice large holes in Swiss cheese .
Which bacterium is responsible for these holes .
What are these holes due to ?



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2. Name the resource agent of statins . How
does this bioactive molecule functions in our
boday ?



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3. Cyclosporin -A is an immuno suppressant .

Suggest any one area where it can be used efficiently Explain.



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4. Name the blank spaces a, b and c of the given table :



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