



BIOLOGY

BOOKS - ARIHANT PUBLICATION

MICROBES IN HUMAN WELFARE

Part I Questions For Practice Very Short Answer Type Questions

1. In curd making, is useful in coagulation of milk protein.

A. Penicillium

B. Lactobacillus

C. Saccharomyces

D. Aspergillus

Answer: B



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2. The antibiotic chloramphenicol can be obtained from the bacterium

A. *Streptomyces griseus*

B. *S. aureofaciens*

C. *S. venezuelae*

D. *S. noursei*

Answer: C



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3. Fill in the blanks: Yeast *Acetobacter* are both involved in the production of _____ from carbohydrate.

A. citric acid

B. acetic acid

C. gluconic acid

D. fumaric acid

Answer: B



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4. Fill in the blanks:Yeast Acetobacter are both involved in the production of _____ from carbohydrate.

A. penicillin

B. citrate

C. methane

D. vinegar

Answer: D



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5. Lipase enzyme is produced by the activity of

A. *Trichoderma viride*

B. Rhizopus sp.

C. Aspergillus sp.

D. None of these

Answer: B



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6. The secondary treatment of sewage includes

A. biological treatment

B. chemical treatment

C. filtration

D. All of these

Answer: A



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7. Roquefort cheese is by growing a specific
..... on it.



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8. The enzyme is used in detergent formulations to remove oily stains from the laundry



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9. The from secondary treatment of sewage is generally released into water bodies.



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10. During sewage treatment, aerobic microbes are converted into mesh-like structure called



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11. Antibiotic tetracycline is obtained from *Penicillium notatum*,



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12. The first antibiotic to be extracted from bacterial culture was nystatin.



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13. In ethyl alcohol production, the unicellular fungus, *Penicillium* is used.



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14. Acetic acid is produced by *Lactobacillus* sp.



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15. The secondary treatment of sewage includes



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16. The drink produced by fermentation of sap of palm tree.



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17. The antibiotic Streptomycin is obtained from



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18. Name the molecules which are used as blood cholesterol lowering agents?



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19. An enzyme used for the clarifying bottled fruit juice.



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20. Write a note on fermentation by microbes and its two applications.



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21. Write a short note on fermentation.



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22. Mention a product of human welfare obtained with the help of each one of the following microbes. (i) LAB (i) *Saccharomyces cerevisiae* (iii) *Propionibacterium shermanii* (iv) *Aspergillus niger*



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23. How are fermented beverages prepared?





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24. The antibiotic Streptomycin is obtained from



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25. Write a short note on alcoholic fermentation.



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26. What is BOD ?



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27. What gases are produced in anaerobic sludges digesters ?



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28. Write a short note on secondary treatment of sewage.



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Part I Questions For Assessment Very Short Answer Type Questions

1. Milk enzyme that coagulates during curd formation is

A. protease

B. casein

C. rennin

D. pectinase

Answer: C



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2. Name the bacterium, which produces Swiss cheese.

A. *Saccharomyces cerevisiae*

B. *Propionibacterium shermanii*

C. *Penicillium roqueforti*

D. *Lactobacillus*

Answer: D



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3. Nystatin is obtained from

- A. *Penicillium* sp
- B. *Streptomyces griseus*
- C. *Streptomyces noursei*
- D. *Aspergillus* sp

Answer: D



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4. The raw material used for the production of wine is

- A. grapes
- B. barley grain
- C. vinegar
- D. None of these

Answer: C





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5. During commercial production of vinegar, secondary infection occurs during

- A. anaerobic conditions
- B. aerobic conditions
- C. Both (a) and (b)
- D. unfavourable conditions

Answer: D



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6. Species of is used for production of roquefort cheese.



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7. is an antibiotic that was used to treat soldiers during World War II.



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8. *Aspergillus niger* is used for production of :



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9. is used as a blood cholesterol lowering agent.



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10. During the secondary treatment of primary effluents, the BOD level.....



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11. During sludge digestion, bacteria produce gases like.....



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12. Antibiotics are used to cure deadly diseases such as plague, whooping cough and diphtheria.



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13. Secondary sewage treatment is mainly a:



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14. Name the organic acid produced by *Aspergillus niger*.



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15. Name the enzyme used for clarifying beer.





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Part I Questions For Assessment Short Answer Type Questions

1. Write a short note on production of curd using microbes.



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2. Expand BOD :



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Part II Questions For Practice Very Short Answer Type Questions

1. The bacterium which acts on bio-waste to produce biogas is

- A. Methanobacterium
- B. Trichoderma
- C. Bacillus thuringiensis
- D. Azotobacter

Answer: A



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2. In biogas, which gas is present in maximum percentage?

A. CO_2

B. Methane

C. Hydrogen

D. Nitrogen

Answer: B



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3. Which one of the following microbes is used as biocontrol agent?

A. Papilloma virus

B. Baculovirus

C. Herpes virus

D. Pox virus

Answer: B



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4. Biopesticides are preferred over chemical pesticides due to their

- A. high pest specificity
- B. biodegradability
- C. non-biodegradability
- D. Both (a) and (b)

Answer: D



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5. Which one of the following fungi makes symbiotic association with the plants?

A. Glomus

B. Nostoc

C. BGA

D. Rhizobium

Answer: A



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6. The technology of biogas production was developed in India by.....



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7. The use of biological methods for controlling plant diseases and pests is called ...





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8. are used as biocontrol agents to get rid of mosquitoes.



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9. The technology of biogas production from cow dung was developed in India largely due to the efforts of :



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10. Methanogens are present in the liver of cattle.



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11. The major component of biogas is carbon dioxide.



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12. Nostoc is present in root nodule of leguminous plants and fixes atmospheric nitrogen.



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13. Which organic acid gets converted into methane in the final step of biogas production?



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14. Name a bacterium used as biopesticide.



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15. Give an example of free-living fungi present in root ecosystem.



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Part II Questions For Practice Short Answer Type Questions

1. Write a short note on biogas.



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2. Write Shortnotes on: Biocontrol agents



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3. Write a short note on *Bacillus thuringiensis* (Bt).



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4. Why is Rhizobium categorised as a symbiotic bacterium?



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5. How do plants benefit from having mycorrhizal symbiotic association?



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Part II Questions For Practice Differentiate Between The Following

1. DISTINGUISH BETWEEN : Primary and secondary sewage treatment



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2. Distinguish between: Primary sludge and activated sludge



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3. Swiss cheese and Roquefort cheese.



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4. Methanogenic bacteria and Symbiotic bacteria.



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5. Biopesticides and Biofertilisers.



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Part II Questions For Assessment Very Short Answer Type Questions

1. A major component of gobar gas is

A. ammonia

B. methane

C. ethane

D. butane

Answer: B



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2. Biogas is used in

A. lighting

B. cooking

C. electric generators

D. All of these

Answer: D



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3. Which of the following can be controlled by using biopesticides?

A. Weeds

B. Insects

C. Diseases

D. All of these

Answer: D



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4. Which is a microbial insecticide?

A. *Bacillus thuringiensis*

B. *B. subtilis*

C. *B. polymixa*

D. *B. laevis*

Answer: A



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5. A free-living nitrogen-fixer is

A. Azotobacter

B. Rhizobium

C. Bacillus

D. None of these

Answer: A



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6. Biopesticides are non-biodegradable compounds.



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7. In paddy fields, blue-green algae fix phosphorus to enrich the soil fertility.



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8. Baculovirus is a rod-shaped DNA virus.



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9. Rhizobium is a bacteria that serves as biofertiliser.



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10. Name any two major components of biogas.



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11. Name any one biocontrol agent.



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Part Ii Questions For Assessment Short Answer Type Questions

1. Write notes with 2 to 3 important points

Bacillus thuringiensis



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2. Write a short note on Trichoderma as a biocontrol agent.



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3. Write a short note on cyanobacteria as biofertiliser.



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1. In curd making, is useful in coagulation of milk protein.



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2. The antibiotic Streptomycin is obtained from



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3. Citric acid is produced when fermentation is caused by (Lactobacillus, Aspergillus sp. Penicillium sp., Acetobacter sp.)



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4. Lipase enzyme is produced by the activity of



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5. Fill in the blank: In pest control of crop plants _____ has pesticidal properties.



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6. The vitamin whose content increases following the conversion of milk into curd by lactic acid bacteria is



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7. What is called the secretions of microorganisms which are toxic to pathogenic bacteria?



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8. What is the commercial name of acetic acid?



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9. What is called the accumulated microorganisms and organic matter in the treatment of sewage?



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10. Name any two major components of biogas.



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11. What can be called the natural pest killing agent other than artificial chemical?



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12. What is called the association between Rhizobium in the root system of legumes?



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13. Antibiotic tetracycline is obtained from *Penicillium notatum*,



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14. In biogas, methane is produced due to the activities of nitrogen-fixing bacteria.



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15. The first antibiotic to be extracted from bacterial culture was nystatin.



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16. correct the statement if required Industrial production of organic acids through microbial cultures is due to the oxidation process by bacteria.



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17. Acetic acid is produced by Lactobacillus sp.



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18. Fill In The blank : In biogas production
_____ bacteria are used .



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19. Fill In The blank : BGA used in biological
nitrogen fixation are called

_____bacteria .



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20. Fill In The blank : Ethanol obtained by
_____fermentation is used in industry .



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21. Fill In The blank : Acetobacter converts
_____to vinegar by aerobic fermentation .



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Odisha Bureau S Textbook Solutions B Short Answer Type Questions

1. Write Shortnotes on: Microbes in biogas production



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2. Biopesticides are:



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3. Biofertilisers



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4. Write Shortnotes on: Microbes in industrial products



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5. Microbes in antibiotics production.





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6. Write Shortnotes on: Microbes in sewage treatment



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Odisha Bureau S Textbook Solutions C
Differentiate Between Two Words In The
Following Pairs Of Words

1. Chemical fertilisers and Biofertilisers.





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2. Synthetic pesticides and Biopesticides



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3. Baker's and Brewer's yeast.



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4. Difference between : Symbiotic nitrogen-fixation and Non Symbiotic nitrogen-fixation.



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Odisha Bureau S Textbook Solutions D Long Answer Type Questions

1. Give a detailed account of industrial application of microbes.



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2. Explain how microbes are useful in pollution control and also in production of alternative source of energy.



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Chapter Practice Very Short Type Questions

1. Which one of the following organisms has been commercialised as blood cholesterol lowering agent?

A. *Trichoderma polysporum*

B. *Monascus purpureus*

C. *Saccharomyces cerevisiae*

D. *Aspergillus niger*

Answer: B



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2. Which of the following is mainly produced by the activity of anaerobic bacteria on sewage ?

A. Mustard gas

B. Biogas

C. Laughing gas

D. Propane

Answer: B



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3. Secondary sewage treatment is mainly a:

A. chemical process

B. biological process

C. physical process

D. mechanical process

Answer: B



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4. Organisms called methanogens are most abundant in a

A. polluted stream

B. hot spring

C. sulphur rock

D. rumen of cattle

Answer: D



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5. A biofertiliser is

A. Rhizobium

B. Azotobacter

C. Nostoc

D. All of these

Answer: D



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6. The first antibiotic was discovered by ...



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7.are used in biological control of aphids.



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8. Azospirillum and Azotobacter are
bacteria.



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9. Plants with mycorrhizal association show
tolerance to and



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10. *Bacillus thuringiensis* is a Gram-negative bacteria.



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11. correct the sentence if required
Baculoviruses are single-stranded RNA viruses.



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12. Mycorrhizae provide cobalt to the roots of plants.



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13. Microorganisms belonging to the genus *Penicillium* are used as agents of biological control. Express in one or two word(s)



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14. A cheese with large holes produced by *Propionibacterium shermanii*.



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15. Name any two cyanobacteria used as biofertilisers.



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Chapter Practice Short Type I Questions

1. Write short note on enzymes produced by microbes.



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2. Write short note on bioactive molecules.



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3. Write short note on harmful effects of chemical pesticides.





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Chapter Practice Short Type Ii Questions

1. Acetic acid production and lactic acid production.



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2. Rhizobium and Azotobacter (with respect to nitrogen-fixation).



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