BIOLOGY

BOOKS - TARGET PUBLICATION

USEFUL AND HARMFUL MICROBES

Exercise

1. Choose the correct alternative

Which stain is used for observation of lactobacilli?

A. Eosin

B. Safranine

C. Methylene blue

D. Iodine

Answer: C

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2. Choose the correct alternative

Which of the following is wrong about lactobacilli? On Statement

A. They are anaerobic.

B. They fix nitrogen.

C. They are used for formation of fermented fodder for cattle.

D. They are used in production of cocoa.

Answer: B

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3. Choose the correct alternative

Due to_____ yoghurt acquires sour taste.

A. proteins

B. lactic acid

C. lactose

D. acetic acid

Answer: B

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4. Choose the correct alternative

During conversion of milk into yoghurt, sugar is converted into acid.

A. maltose

B. lactose

C. sucrose

D. fructose

Answer: B

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5. Choose the correct alternative

Lactic acid produced during formation of yoghurt is responsible for

A. sweet taste of yoghurt

B. abundant growth of pathogens

C. coagulation of milk

D. indigestion and abdominal discomfort

Answer: C

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6. Choose the correct alternative

Which of the following is an application of lactobacilli?

A. Bioremediation

B. Probiotic

C. Antibiotic

D. Inoculation of leguminous plants

Answer: B

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7. Choose the correct alternative

Rhizobia are

A. rod-shaped bacilli

B. rectangular shaped anaerobic bacteria

C. fungus used for production of antibiotic

D. used for absorption of toxins produced during production of palm oil

Answer: A

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8. Choose the correct alternative

Which stain is used for observation of Rhizobia?

A. Safranine

B. Hydrogen peroxide

C. Ethyl alcohol

D. Eosin

Answer: A

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9. Choose the correct alternative

Due to rhizobia_____content of beans and pulses increases.

A. carbohydrates

B. vitamins

C. proteins

D. minerals

Answer: C

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10. Choose the correct alternative

Fermentation of molasses results in production of _____that is mixed with fuels.

A. oil

B. nitrites

C. ethanol

D. diesel

Answer: C

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11. Choose the correct alternative

Oil spills in oceans are cleaned with the help of_____ bacteria.

A. Alcanivorax

B. Clostridium

C. Yarrowia

D. Rhizobium

Answer: A

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12. The bacteria which spoil cooked food are.....

A. Lactobacilli

B. Clostridium

C. Saccharomyces

D. Rhizobinm

Answer: B

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13. Choose the correct alternative

Ringworm, scabies are caused by

A. fungi

B. bacteria

C. virus

D. either (A) or (B)

Answer: A

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14. Complete the paragraph

Select the appropriate options and complete the following paragraph.

(Yeast, yoghurt, _ bread, Lactobacilli, fermentation, respiration, sour, bitter, low pH, coagulation, sweet, high pH)

_____convert lactose in milk to form lactic acid by the process of _____. This results in a change in the pH of milk causing _____of milk proteins that separate these proteins from other constituents of milk. These

changes in milk result in the formation of a product known as _____which has a_____taste due to the presence of lactic acid. The _____destroys harmful microbes present in milk.

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15. Name the following:

Sugar present in milk

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16. Name the following

A type of antibiotics which are useful against a wide variety of bacteria.

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17. Name the following

A group of antibiotics obtained from a fungus Penicillium.

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18. Name the following

Smokeless and high quality fuel obtained by fermentation of molasses with the help of yeast.

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19. Name the following

Write the names of microbes found in following food material:

Yoghurt

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20. Name the following

Write the names of microbes found in following food material:

Bread

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21. Name the following

Write the names of microbes found in following food material:

Root nodules of leguminous plants

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22. Write the names of microbes found in the following food materials:

Yoghurt, Bread, Root Nodules of Leguminous plants, Idlim Dosa, Spoiled Potato Curry.

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23. Write the names of microbes found in the following food materials:

Yoghurt, Bread, Root Nodules of Leguminous plants, Idlim Dosa, Spoiled Potato Curry.

Watch Video Solution

24. Write the names of microbes found in the following food materials:

Yoghurt, Bread, Root Nodules of Leguminous plants, Idlim Dosa, Spoiled Potato Curry.

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25. True or False.

During fermentation of milk, lactobacilli convert lactose into lactic acid.

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26. True or False.

During fermentation of milk, the pH of milk increases causing coagulation of milk proteins.

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27. State whether the following statements are true or false. Correct the false statements:

Yoghurt has a specific sour taste due to acetic add

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28. True or False.

Lactobacilli can be used to treat abdominal discomfort.

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29. True or False.

Rhizobium living in root nodules of leguminous plants exhibit symbiotic relationship.

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30. True or False.

The yeast cell is a eukaryotic cell.

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31. True or False.

During fermentation, yeast cells convert carbohydrates into amino acids and oxygen.

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32. True or False.

Whenever a pathogenic microorganism is definitely known, broad spectrum antibiotics are used.

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33. True or False.

Amoxicillin is an example of narrow spectrum antibioticss.

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34. True or False.

Protozoa cannot be destroyed by antibiotics.

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35. True or False.

Tetracycline is the first antibiotic obtained from Clostridium.

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36. True or False.

Fungi release mycotoxins into the food making it poisonous.

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37. True or False.

Pneumonia can be caused by bacteria.

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38. Identify the odd word out and say why it is the odd one?

Lactobacilli, rhizobia, yeast, clostridia.

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39. Odd one out

Erythromycin, Ampicillin, Amoxicillin, Tetracycline

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40. Identify the odd word out and say why it is the odd one?

Root rot, rust (tambera), rubella, mosaic.

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41. Find the odd man out:

Pneumonia, Diphtheria, Chickenpox, Cholera

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42. Odd one out

Leprosy. Cholera, Hepatitis, Pneumonia

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43. Odd one out

AIDS, Influenza, Malaria, Swine flu

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44. Complete the analogy

Buttermilk: Lactobacilli :: Bread:_____

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45. Complete the analogy

Saccharomyces : Ethanol production :: Alcanivorax :_____

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46. Complete the analogy

Rhizobium : Bacteria :: Yarrowia :_____

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47. Complete the analogy

Pneumonia : Droplets spread in air :: Dengue :_____

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48. Complete the analogy

Cholera: Bacteria :: Dengue :_____

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49. Match the following

	Group 'A'		Group 'B'
i.	*Rhizobium*	a.	Food poisoning
ii.	*Clostridium*	b.	Nitrogen fixation
iii.	*Penicillium*	c.	Bakery products
iv.	Yeast	d.	Production of antibiotics

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50. Answer the following

Complete the statements using the proper option from those given below. Explain the statements.

(mycotoxins, budding, rhizobium, oval, aerobic,

rod, Penicillium, anaerobic)

Lactobacilli are _____shaped and _____bacteria.

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51. Answer the following

Complete the statements using the proper option from those given below. Explain the statements. (mycotoxins, budding, rhizobium, oval, aerobic, rod, Penicillium, anaerobic)

Leguminous plants can produce more proteins due to _____.

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52. Answer the following

Complete the statements using the proper option from those given below. Explain the statements. (mycotoxins, budding, rhizobium, oval, aerobic, rod, Penicillium, anaerobic)

Yeast reproduces asexually by the _____method.

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53. Answer the following

Complete the statements using the proper option from those given below. Explain the statements. (mycotoxins, budding, rhizobium, oval, aerobic, rod, Penicillium, anaerobic)

Penicillin is a group of antibiotics obtained from a fungus_____.

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54. Answer the following

Complete the statements using the proper option from those given below. Explain the statements. (mycotoxins, budding, rhizobium, oval, aerobic, rod, Penicillium, anaerobic)

Toxins of fungal origin are called_____.

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55. How is yoghurt made from milk? What exactly happens in this process?

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56. What is meant by 'Probiotic' yoghurt and other foodstuffs that are popular now a days?

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57. Write the uses of Lactobacillus.

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58. Answer the following question:

How is Rhizobium beneficial to farmers?

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59. Write short notes:

Rhizobial inoculation.

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60. What is fermentation?

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61. Yeast is used for making wine. Explain.

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62. Explain with examples how microbes can be used for remediation.

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63. Define antibiotics.

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64. Write short notes on:

Antibiotics.

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65. Answer the following question:

What are 'broad- spectrum antibiotics'?

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66. How do antibiotics cure disease?

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67. Answer the following question:

Are the antibiotics given to humans and animals the same ? Why?

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68. Give medicinal uses of penicillin.

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69. Answer the following question:

How is a vaccine produced ?

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70. Which vaccines are given to infants? Why?

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71. Answer the following

What precautions should be taken while using various types of software on the computer?

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72. Why is it necessary to safely store the pathogens of a disease against which vaccines are to be produced?

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73. Sometimes, you may notice a black powder or white discsfloating on the pickle or murabba, when a jar is opened after a long time. What exactly is this? Why are such food items not good to eat?

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74. Answer the given Question :

Why do food poisoning incidents occur during marriage or other community feasts?

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75. Do only the Clostridium bacteria cause illness?

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76. Name one special characteristic of Clostridia?

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77. Give examples of different species of Clostridia.

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78. Write down the modes of infection and the preventive measures against fungal disease.

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79. Give reasons:

Beans and pulses are rich in proteins.

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80. Give reasons:

Often, alcohol is produced along with sugar in sugar factories.

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81. Foam accumulates on the surface of 'dal' kept for a long time in summer.

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82. Why are naphthalene balls kept with clothes to be put away?

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83. Complete the given table by writing the mode of infection and preventive measure for following diseases.

No.	Diseases	Mode of infection	Preventive measure
i.	Influenza		
ii.	Pneumonia		
iii.	Malaria		
iv.	Cholera		
v.	Scabies		

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84. Questions based on diagram

Sketch and labels the T.S. of root nudle of soybean plant showing infection by rhizobaia.

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85. Questions based on diagram

Draw a diagram of yeast cell showing budding.

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86. Questions based on paragraph

Ravi visited the doctor, complaining about fever and cold. The doctor suspected it to be a bacterial infection of the respiratory tract. He told Ravi that it may be a case of mild pneumonia and prescribed an appropriate dosage of ampicillin. He advised him to complete the treatment even if he started feeling better immediately.Based on the above passage, answer the questions

Is the prescribed antibiotic broad spectrum or Narrow spectrum?

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87. Questions based on paragraph

Ravi visited the doctor, complaining about fever and cold. The doctor suspected it to be a bacterial infection of the respiratory tract. He told Ravi that it may be a case of mild pneumonia and prescribed an appropriate dosage of ampicillin. He advised him to

complete the treatment even if he started feeling better immediately.Based on the above passage, answer the questions

Name any other antibiotic that is generally used to treat bacterial infections and diseases like pneumonia and scarlet fever.

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88. Questions based on paragraph

Ravi visited the doctor, complaining about fever and cold. The doctor suspected it to be a

bacterial infection of the respiratory tract. He told Ravi that it may be a case of mild pneumonia and prescribed an appropriate dosage of ampicillin. He advised him to complete the treatment even if he started feeling better immediately.Based on the above passage, answer the questions

Based on the suspected disease, mention the mode of transmission.

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89. Questions based on paragraph

Ravi visited the doctor, complaining about fever and cold. The doctor suspected it to be a bacterial infection of the respiratory tract. He told Ravi that it may be a case of mild pneumonia and prescribed an appropriate dosage of ampicillin. He advised him to complete the treatment even if he started feeling better immediately.Based on the above passage, answer the questions

According to the treatment prescribed, do you

think the doctor knows the specific bacteria causing the infection? Explain.

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90. Questions based on paragraph

Ravi visited the doctor, complaining about fever and cold. The doctor suspected it to be a bacterial infection of the respiratory tract. He told Ravi that it may be a case of mild pneumonia and prescribed an appropriate dosage of ampicillin. He advised him to

complete the treatment even if he started feeling better immediately.Based on the above passage, answer the questions

Enlist another caution to be remembered regarding usage of antibiotics, apart from the one mentioned in the paragraph.

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91. What is meant by microbes? What are their characteristics?

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92. How did you observe microbes?

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93. In what way microbes are related to our everyday life?

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94. Smear a drop of fresh buttermilk on a glass slide. Stain it with methylene blue and put a coverslip over it.

Observe the smear under the 10X objective of a compound microscope and then with the more powerful 60X objective. Did you notice the blue rod-shaped organisms Moving, around?

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95. Why do doctors advise you to take yoghurt or buttermilk if you have indigestion or abdominal discomfort?

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96. Use your brain power

Sometimes, yoghurt becomes bitter and froths up. Why does this happen ?

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97. Which different milk products are obtained at home by fermentation of the cream from the milk?

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98. How many different industries depend upon the Lactobacilli bacteria?

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99. Answer the following question:

Which types of cottage industries and factories can be started in areas with abundant milk production?

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100. Take a plantlet of fenugreek, groundnut or any other bean and sterilize it with a 3 to 5% solution of hydrogen peroxide. Afterwards, keep it in a 70% solution of ethyl alcohol for 4

to 5 minutes. Clean the roots with sterile water and take thin sections of the root nodules. Select good section and place it in a solution of safranin for 2 to 3 minutes. Place the stained section on a glass slide, cover it with a coverslip and observe it under the compound microscope.

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101. Bring 'active dry yeast' from the market. Mix a spoonful of yeast, two spoonful sugar

with a sufficient quantity of lukewarm water in a bottle. Fix a colourless, transparent balloon on the mouth of that bottle. What changes do you observe after 10 minutes? Mix limewater with the gas accumulated in the balloon. Collect that lime water in a beaker and

observe it. What do you notice?

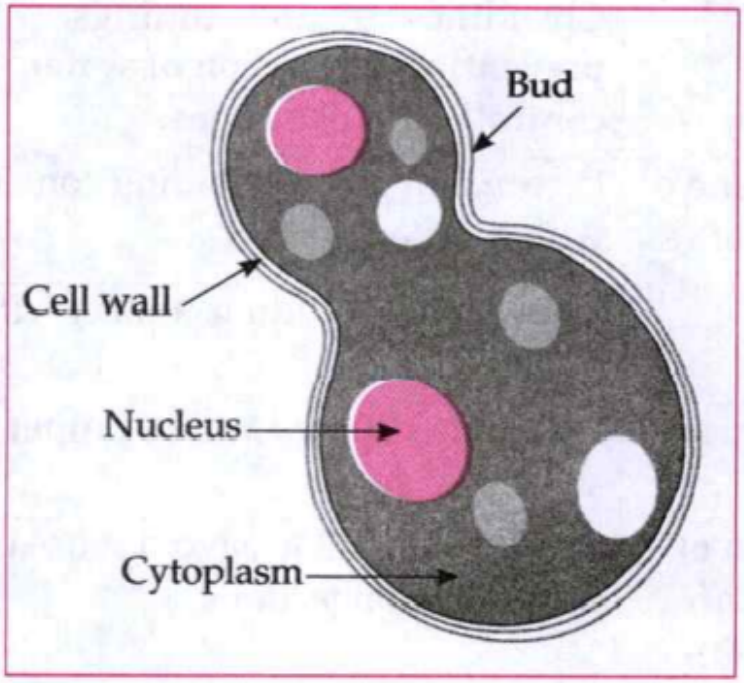

Fig. 8.1: Yeast

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102. Bring 'active dry yeast' from the market.

Mix a spoonful of yeast, two spoonful sugar

with a sufficient quantity of lukewarm water in a bottle. Fix a colourless, transparent balloon on the mouth of that bottle. What changes do you observe after 10 minutes? Mix limewater with the gas accumulated in the balloon. Collect that lime water in a beaker and

observe it. What do you notice?

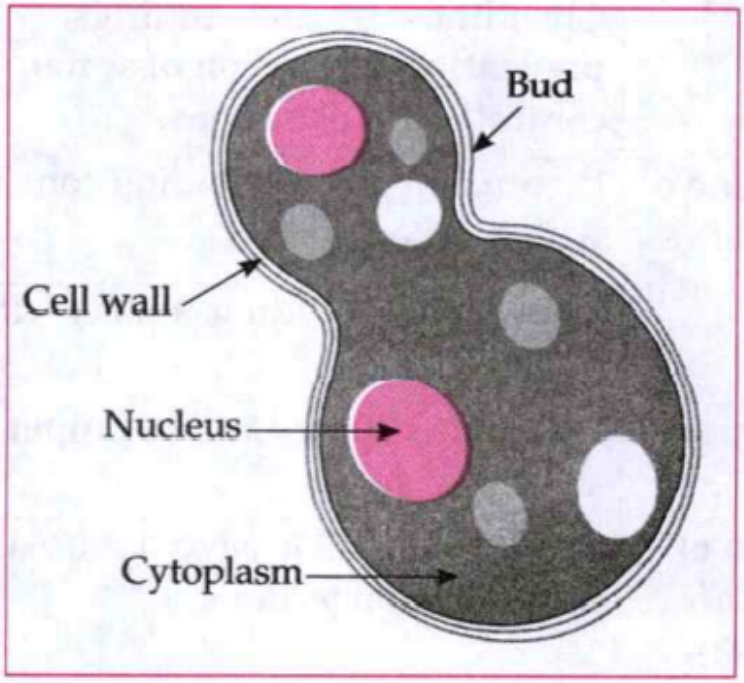

Fig. 8.1: Yeast

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103. Bring 'active dry yeast' from the market. Mix a spoonful of yeast, two poonfuls sugar

with «sufficient quantity of lukewarm water in a bottle. Fix a colourless, transparent balloon on the mouth of that bottle.

Take a drop of the solution from the bottle on a glass slide, put a cover -slip over it and observe it under the compound microscope. Store the solution in the bottle carefully.

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104. Bring ‘active dry yeast’ from the market. Mix a spoonful of yeast, two poonfuls sugar

with «sufficient quantity of lukewarm water in a bottle. Fix a colourless, transparent balloon on the mouth of that bottle.

Find out how to use the solution prepared in the above experiment, to make bread. Follow the recipe and make the bread. Find out and note down the reasons why the dough rises and makes the bread spongy.

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105. Recently, it has been made compulsory in India and some other countries to mix 10% ethanol with fuels like petrol and diesel. What is the reason for this?

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106. Why are wineries located near Nashik in Maharashtra?

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107. Chapattis made from wheat only swell up but bread becomes spongy, soft and easy to digest. Why is it so?

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108. Which changes do you notice in leather articles and gunny (jute) bags during the rainy season?

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109. Answer the following question:

For what different purpose do you use thermos flask?

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110. Why do these articles not get spoilt during the summer or winter?

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111. Use your brain power

Salt is applied on the inner surface of pickle jars and the pickle is covered with oil. Why is this done?

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112. Use your brain power

Which perservatives mixed with ready- to-eat foods to keep them from spoiling?

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113. Find out the uses of fungi to plants and animals?

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114. Use your brain power

What is the structure of lichen, a condiment?

Where else is it used?

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115. Use your brain power

Which plant and animal diseases are caused by micro-organisms and what are the measures to be taken against them?

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116. Collect information about generic medicines and discuss then in the class.

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117. Choose the correct alternative

Which of the following microbes forms a symbiotic association with groundnut plant?

A. Lactobacilli

B. Rhizobium

C. Clostridia

D. Yarrowia

Answer:

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118. Choose the correct alternative

Lactobacilli are

A. bottle-shaped

B. rod-shaped

C. spherical

D. spiral-shaped

Answer:

Watch Video Solution

119. Choose the correct alternative

Which organism helps in making dough rise and bread spongy?

A. Lactobacilli

B. Rhizobia

C. Clostridia

D. Yeast

Answer:

 Watch Video Solution

120. Choose the correct alternative

Rhizobia are

A. proteins

B. lactic acid

C. lactose

D. alcohol

Answer:

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121. Answer the following

Identify the odd one among the following and explain.

AIDS, Hepatitis, Dengue, Malaria

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122. Answer the following

Complete the given analogy.

Antibiotic : Penicillium :: Yoghurt :_____

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123. Answer the following

Name the asexual method of reproduction in yeast.

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124. Answer the following

Match the following.<

	Group 'A'		Group 'B'
a.	Ringworm	1.	Bacteria
b.	Leprosy	2.	Protozoa
		3.	Fungi
		4.	Virus

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125. Give scientific reasons

Rhizobium can be used as an effective biological fertilizer.

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126. Give scientific reasons

Naphthalene balls kept with clothes to be put away.

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127. Answer the following

Give examples of useful micro-organisms.

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128. Discuss term narrow spectrum antibiotics

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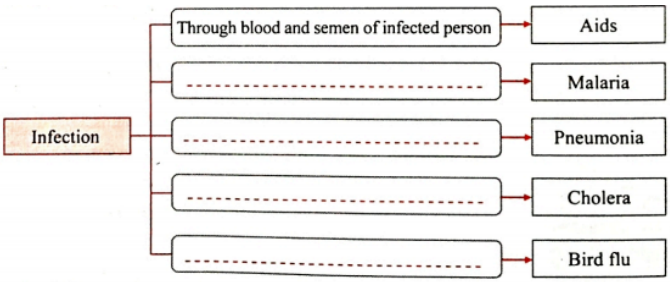
129. Answer the following

Complete the given flowchart.



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130. Answer the following question:

Why is it necessary to safely store the pathogens of a disease against which vaccines are to be produced?

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131. Answer the following

Explain the process of fermentation in detail.

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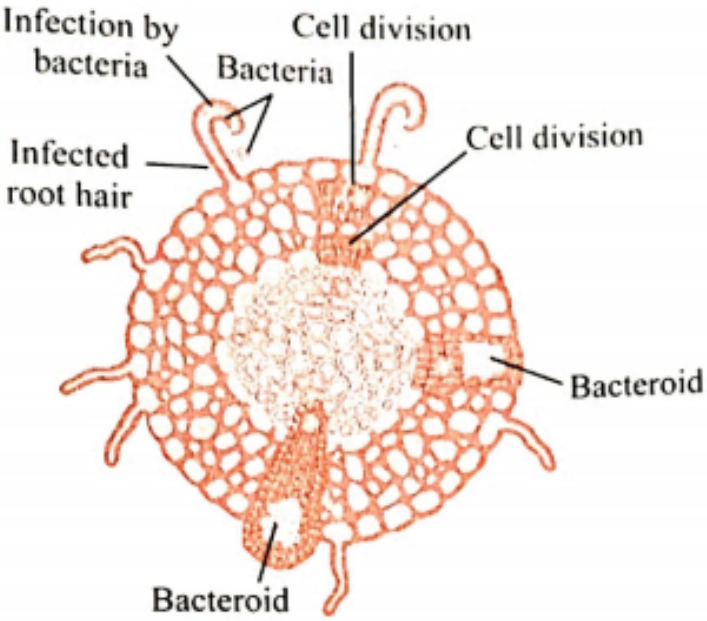
132. Answer the following

Observe the diagram and answer the questions given below it.



What does the given diagram represent?

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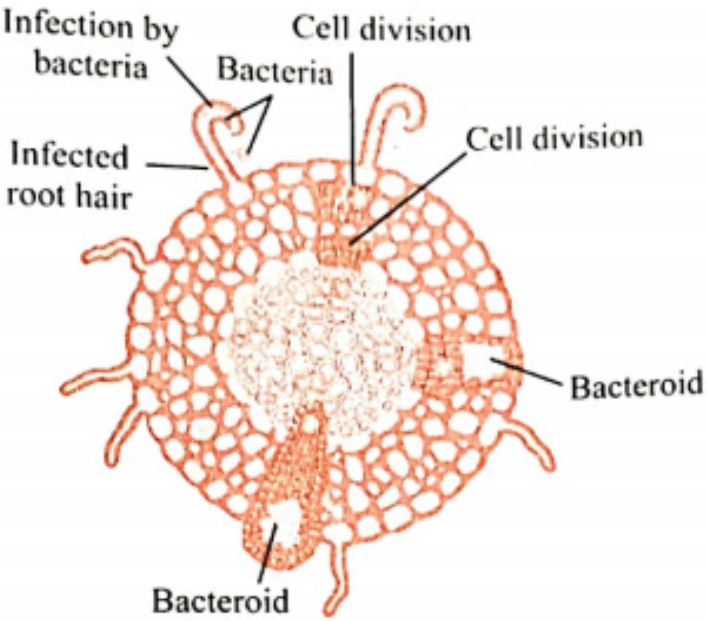
133. Answer the following

Observe the diagram and answer the

questions given below it.



Which mutually beneficial relationship is illustrated in the diagram?

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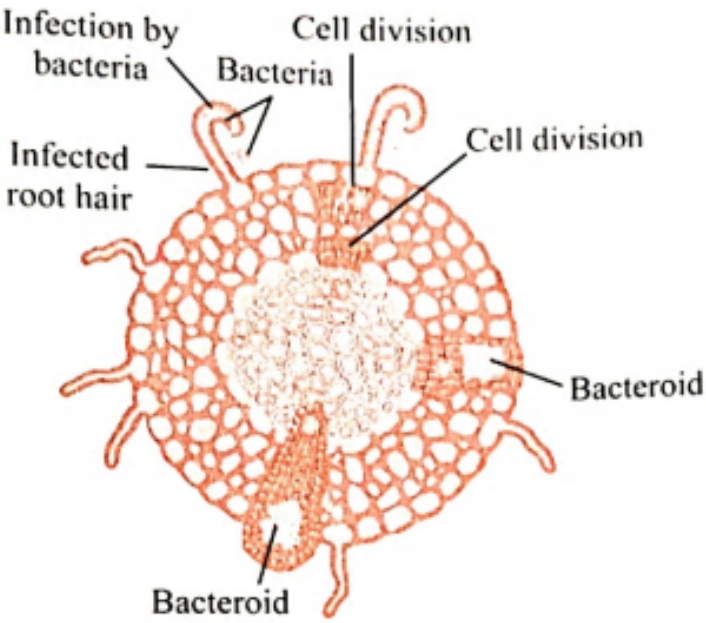
134. Answer the following

Observe the diagram and answer the questions given below it.



How can infection of root hair by beneficial bacteria help plants?

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135. Answer the following

Describe the process of vaccine production in detail.

Watch Video Solution

136. Answer the following

Read the paragraph and answer the questions given below it.

Food poisoning can occur due to

contamination of food by various bacteria and fungi.Clostridia are bacteria responsible for spoilage of cooked food. There are around 100 species of this bacteria viz. Clostridium tetani, Clostridium botulinum, etc. that are present either free living in soil or the alimentary canal of humans and other animals. The bacteria are rod- shaped and produce pottle-shaped endospores in adverse environmental conditions. These microbes cannot withstand normal oxygen levels in air and grow under anaerobic conditions.

Mention the habitats where Clostridium normally exists.

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137. Answer the following

Read the paragraph and answer the questions given below it.

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species of this bacteria viz. Clostridium tetani, Clostridium botulinum, etc. that are present either free living in soil or the alimentary canal of humans and other animals. The bacteria are rod- shaped and produce pottle-shaped endospores in adverse environmental conditions. These microbes cannot withstand normal oxygen levels in air and grow under anaerobic conditions.

Do you know about any rod-shaped, anaerobic micro-organism that is useful to humans?

138. Answer the following

Read the paragraph and answer the questions given below it.

Food poisoning can occur due to contamination of food by various bacteria and fungi.Clostridia are bacteria responsible for spoilage of cooked food. There are around 100 species of this bacteria viz. Clostridium tetani, Clostridium botulinum, etc. that are present either free living in soil or the alimentary canal of humans and other animals. The bacteria are rod- shaped and produce pottle-shaped

endospores in adverse environmental conditions. These microbes cannot withstand normal oxygen levels in air and grow under anaerobic conditions.

Which narrow-spectrum antibiotic can be used to treat bacterial infections caused by Clostridia?

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139. Answer the following

Read the paragraph and answer the questions

given below it.

Food poisoning can occur due to contamination of food by various bacteria and fungi.Clostridia are bacteria responsible for spoilage of cooked food. There are around 100 species of this bacteria viz. Clostridium tetani, Clostridium botulinum, etc. that are present either free living in soil or the alimentary canal of humans and other animals. The bacteria are rod- shaped and produce pottle-shaped endospores in adverse environmental conditions. These microbes cannot withstand normal oxygen levels in air and grow under

anaerobic conditions.

How does Clostridium survive even under adverse conditions?

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140. Answer the following

Read the paragraph and answer the questions given below it.

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spoilage of cooked food. There are around 100 species of this bacteria viz. Clostridium tetani, Clostridium botulinum, etc. that are present either free living in soil or the alimentary canal of humans and other animals. The bacteria are rod- shaped and produce pottle-shaped endospores in adverse environmental conditions. These microbes cannot withstand normal oxygen levels in air and grow under anaerobic conditions.

Why is Clostridium mostly found to contaminate tinned or canned foodstuff?


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