



BIOLOGY

BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

Introduction to Microbiology

Exercise

1. Milk is _____ at the beginning to destroy unwanted microbes.

A. heated
B. cooled
C. pasteurized
D. powdered
Answer:
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2. Very hard_____ cheese is formed after ripening for 12-18 months.

A. mozzarella
B. cheddar
C. parmesan
D. cottage
Answer:
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3. Most appropriate method of disposal of dry waste is

B. composting
C. incineration
D. recycling.
Answer: Watch Video Solution
4. bateria present in Root nodules of
leguminous plants help in nitrogen fixation.

A. sanitary landfill

A. bread
B. honey
C. butter
D. yoghurt
Answer:
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6. Yeast reproduces by method of asexual reproduction.

A. lactase
B. amylase
C. protease
D. pepsin
Answer:
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8. Chemically vinegar is 4%
A. acetic acid

C. citric acid
D. butyric acid
Answer:
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9. Very small quantity of gas is mixed
to produce vinegar.
A. NO_2

B. lactic acid

B. SO_2

 $\mathsf{C}.\,CO_2$

D. H_2S

Answer:



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10. Rifamycin is effective against_____.

A. Cholera

B. Typhoid

- C. Malaria
- D. Tuberculosis



- **11.** _____ a by-product of fermentation is a biopesticide.
 - A. glyphosphate
 - B. Boric acid

C. Spinosad

D. Malathion

Answer:



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12. Rewrite the statement using correct option and explain the completed statementSalts which can be used as supplement of calcium and iron are obtained from ______

- A. Gluconic acid
- B. Itaconic acid
- C. citric acid
- D. Lactric acid



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13. Rewrite the statement using correct option and explain the completed statement

Process of _____ of milk proteins occurs due to lactic acid.

- A. Sedimentation
- B. Coagulation
- C. Polymerisation
- D. Determination

Answer:



14. Rewrite the statement using correct optionand explain the completed statementHarmful bacterial like ______ in the intestineare destroyed due to probiotics.

- A. lactobacilli
- B. rhizobium
- C. helicobacter
- D. clostridium

Answer:



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15. acetic acid is bleached with the help of potassium ferrocyanide before pasteurization.

A. Calcium ferrocyinde

B. Potassium ferrocyinde

C. Potassium chloride

D. Calcium hydroxide

Answer:



16. _____ imparts thickness to ice-creams.

A. Xanthan gum

B. Xylitol

C. L-glutamic acid

D. Diacetyl

Answer:



17. Enzyme	obta	ained from	alimer	ntary
canal of cattle	used	tranditiona	illy in	the
production of ch	eese.			

- A. maltase
- B. rennet
- C. lactase
- D. pepsin



18. Mixture of bacterial strains like a							
	is	mixed	with	ethanol	for	its	
microbial o	degi	radation					

- A. Candida and Hansenuala
- B. Brevibacterium and Corynobacterium
- C. Azotobacter and Pseudomonas
- D. Acetobacter and Glucanobacter



19.	Microbe	is	used	for	the
pro	duction of coffee.				

- A. Saccharomyces cerevisiae
- B. Candida
- C. Lactobacillus brevis
- D. Lactobacillus delbrueckii



20	acid is	used	for	production	of
monosodium	glutama	ate (Aj	inon	noto).	

- A. L-glutamic acid
- B. Glutamic acid
- C. Itaconic acid
- D. Citric acid



21. Xylito	l and	aspartme a	are used as	•
•		•		

- A. binding agents
- B. emulsifiers
- C. artificial sweetners
- D. Microbial restricitors



22. ____ and ____ bacteria are used to clear to oil spills.

A. Acetobacter and Glucanobacter

B. Pseudomonas spp and Alcanovorax borkumensis

C. Actinomycetes and Streptomyces

D. Acidphillum Spp and Acidobacillus ferroxidens

Answer:

23. Plastic bottles are formed from chemical substance

A. Polymer Tetrachloro Polyester

B. Polymer Tetrachloro Polyester

C. Polyehylene Terepthalate Polyester

D. Polyamino Tetrameric Polyethylee

Answer: Polymer Trypotphan Polyester



24. Bacterial species which can decompose PET or plastic bottles.

A. Acidophillum spp and Acidobacillus ferroxidens

B. Streptomyces and Actinomycetes

C. Vibrio and Idenonella Sakaiensis

D. Acetobacter and Glucanobacter

Answer:

25. Which of the following microbes is used to control soil pollution occuring due to acid rain?

- A. Acidophillum spp and Acidobacillus ferroxidens
- B. Vibrio and Ideonella Sakaiensis
- C. Pseudomonas spp and Alcanovorax borkumensis

D. Thiobacilli and Sulphobacilli

Answer:



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26. _____ convery salts of uranium released from the atomic energy plan into insoluble salts.

- A. Streptomyces and Actinomucetes
- B. Thiobacilli and sulphobacilli

C. Acidophillum spp and Acidobacillus

ferroxidens

D. Vibrio and Ideonella sakaiensis

Answer:



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27. In which of the following industries are microbial enzymes not used?

A. Glass industry

- B. Cheese industry
- C. Tanning industry
- D. Paper industry



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28. _____ like compounds are formed due to lactobacilli that give characterstic taste to the yoghurt

- A. Diacetyle

 B. Ethanol

 C. Acetaldehyde
 - D. Xylitol



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29. Find the odd word out:

Cheese, kefir, yoghurt, vinegar.



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30. Find the odd word out:

Lactobacillus lactis, Lactobacillus delbrueckii,

Lactobacillus cremoris, Streptococcus thermophilus.



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31. Find the odd word out:

Cutting, washing, rubbing, scrubbing.



Acidophilus, Bifidobacterium bifidum, Clostridium, Lactobacillus casei.



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33. Find the odd word out:

Spirulina, Chlorella, Blue green algae, Actinomycetes.



Chilli sauce soya sauce, vinegar, monosodium glutamate.



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35. Find the odd word out:

Oxidoreductases, tranferases, ligases, papain.



Penicillin, erythromycin, gentamycin, acetic acid.



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37. Find the odd word out:

Actinomycetes, Streptomyces, Nocardia,

Pseudomonas.



Citric acid, Malic acid, Glutamic acid, Lactic acid.



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39. Find the odd word out:

Beta carotene, lycopene, xanthene, xanthan.



Gentamycin, streptomycin, natamycin, neomycin.



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41. Complete the correlation.

Lactobacilli: Yogurt production:: Azetobacter:

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42. Complete the correlation. Ideonella sakaiensis : PET : : Actinomycetes : **Watch Video Solution**

43. Complete the correlation.

Phenol oxidising bacteria : Sewage :

Hydrocarbonoclastic bateria: _____.



44. Complete the correlation.

Enzyme rennet: Alimentary canal of cattle::

Enzyme protease: _____.



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45. Complete the correlation.

Probiotic: Diarrhoea:: Antibiotic Rifamcin:



46. Complete the correlation.

Flour cereal : Bread : : Sugar molasses :

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47. Complete the correlation.

Dirt removal : Detergents :: Corn flour:

-----·



48. Complete the correlation. Pseudomonas spp. : Oil spills : : Acidophillum spp.: Watch Video Solution **49.** Complete the correlation. Cocoa : Theobroma cacao :: Coffee :

50. Complete the correlation.				
Yoghurt : Lactobacilli	delbrueckii	::	coffee	:
·				
Watch Video Solu	ution			

51. Complete the correlation.

Gluconic acid: Aspergillus niger:: Itaconic acid:

._____.



52. Complete the correlation.

Polysaccharides : Emulsifiers :: Aspartame :

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53. Explain the difference between Applied Microbiology and Industrial Microbiology.



54. Explain the difference between sweet cream butter and cultured variety of butter.



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55. Match the following

(Column A		Column B
(1)	Xylitol	(a)	Pigment
(2)	Citric acid	(b)	To impart sweetness
(3)	Lycopene	(c)	Microbial restrictor
(4)	Nycin	(d)	Protein binding emulsifier
		(e)	To impart acidity



(Column A	Column B	
(1)	Yoghurt	(a)	Lactobacillus lactis
(2)	Bread	(b)	Lactobacillus casei
(3)	Cheese	(c)	Lactobacillus delbrueckii
(4)	Kefir	(d)	Saccharomyces cerevisiae
		(e)	Aspergillus oryzae



Column A	Column B
(1) Apple	(a) Coffee
(2) Grapes	(b) Cocoa
(3) Theobroma cacao	(c) Chocolate
(4) Caffea arabica	(d) Wine
	(e) Cider



	A		В		С
(1)	Methane fuel	(i)	Yeast - Saccharomyces	(a)	Bio-photolysis of water
(2)	Hydrogen fuel	(ii)	Microbial anaerobic decomposition	(b)	Fermentation of molases
(3)	Ethanol fuel	(iii)	Photoreduction by bacteria	(c)	Urban, agricultural, industrial waste.



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59. Match the following

	Column A	Column B
(1)	Solid fuel	(a) Vegetable oils
(2)	Liquid fuel	(b) Gobar gas
(3)	Gaseous fuel	(c) Crop residue

	Column A		Column B
(1)	Phenol oxidising bacteria	(a)	Prevent leaching of iron, zinc by forming compounds
(2)	Thiobacilli	(b)	Xenobiotic chemicals
(3)	Pseudomonas spp.	(c)	Soil pollution due to acid rain
(4)	Ideonella sakaiensis	(d)	Biopesticide
(5)	Actinomycetes	(e)	Oil spills
(6)	Acidobacillus ferroxidens	(f)	PET
		(g)	Rubber



61. State whether the following statements are

True or False. Correct the false statement.

Industrial microbiology uses microbes for garbage management and pollution control.



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62. State whether the following statements are True or False. Correct the false statement.

Various products like food and cosmetics are produced on a large scale with the help of micro-organisms.

63. State whether the following statements are True or False. Correct the false statement. Milk is converted into various products for its preservation purpose.



64. State whether the following statements are True or False. Correct the false statement.

Basic process for production of yoghurt, cheese and cream is different.



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65. State whether the following statements are True or False. Correct the false statement.

Milk is pasteurized at the beginning to destroy unwated microbes.



66. State whether the following statements are True or False. Correct the false statement.

Bacterial strains of Streptococcus thermophilus and Lactobacillus delbrueckii are added to warm temperature milk in 2:1 proportion.



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67. State whether the following statements are True or False. Correct the false statement.

Cheese is produced on large scale from abundantly available cow milk all over the world.



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68. State whether the following statements are True or False. Correct the false statement. Whey is separated form yoghurt in the production.



69. State whether the following statements are True or False. Correct the false statement. Enzyme protease obtained from fungi is used to produce vegetarian cheese.



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70. State whether the following statements are True or False. Correct the false statement.Useful microbes become inactive due to antibiotics, probiotics make them active again.



71. State whether the following statements are True or False. Correct the false statement.

Ajinomoto, a popular chinese food is produced by microbial fermentation.



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72. State whether the following statements are True or False. Correct the false statement.

Probiotics are used for treatment fo cough and cold.



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73. State whether the following statements are True or False. Correct the false statement.

Microbial enzymes are inactive at low

temperature.



74. State whether the following statements are True or False. Correct the false statement. Bio-fuel is among non-renewable source of good energy.



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75. State whether the following statements are True or False. Correct the false statement. In villages, domestic sewage is diposed off in nearby soil.

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76. State whether the following statements are

True or False. Correct the false statement.

Soyabean sauce is produced with the help of fungus Aspergillus niger.



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77. State whether the following statements are

True or False. Correct the false statement.

Mozzarella cheese is very hard cheese.



78. State whether the following statements areTrue or False. Correct the false statement.On storing for 3 to 12 months, very hard

cheese called Parmesan cheese is formed.



79. State whether the following statements are True or False. Correct the false statement.

Antibiotics maintain the balance of intestinal microorganisms.



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80. State whether the following statements are True or False. Correct the false statement. Nowadays, probiotics are used for treatment of diarrhoea and treatment of diarrhoea and treatment of poultry.



81. State whether the following statements are True or False. Correct the false statement.

Acetic acid is bleached with the help of potassium permanganate.



82. _____ acid is used for production of monosodium glutamate (Ajinomoto).



83. State whether the following statements are

True or False. Correct the false statement.

Microbes are used for bioremediation of environment polluted due to sewage.



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84. State whether the following statements are True or False. Correct the false statement.

Bacteria used to clear oil spills are called phenol oxidising bacteria.



Fermented food items



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86. Name the following:

Acid present in Yoghurt



Sugar present in milk



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88. Name the following:

Dairy product produced with the help of fungi



Bacterial strains which convert milk to Yoghurt.



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90. Name the following:

Water in yoghurt



Microbes used in production of cheese.



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92. Name the following:

Enzyme from which vegetarian cheese is produced.



Steps for process of cheese production.



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94. Name the following:

Yeast used in commercial bakery industry.



Ingredients of popular chinese food produced by microbial fermentation.



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96. Name the following:

Chemical used to impact sour taste and to preserve.



97. Ethanol, an alcohol is obtained by fermentation of carbon compounds with the help of which microbe ?



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98. Name the following:

Yeast used for production of Ethanol.



Bacterial strains added to ethanol to produce acetic acid.



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100. Name the following:

Fungus used in production of soya sauce.



Microbial enzymes.



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102. Name the following:

Industries in which microbial enzymes are used.



Microbe acting on fruit apple and grapes.



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104. Name the following:

Microbe acting on fruit Theobroma cacao.



Microbe acting on fruit Caffea arabica.



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106. Name the following:

Amino acid obtained form Aspergillus itaconius.



Amino acid obtained from Lacobacillus delbrueckii.



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108. Name the following:

Amino acid obtained form Aspergillus niger.



Amino acid obtained form Brevibacterium,

Corynobacterium.



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110. Name the following:

Substance which impart acidity.



Substances which help in protein binding.



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112. Name the following:

Substances which are microbial restrictors.



Substances which are antioxidants and vitamins.



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114. Name the following:

Substances which are edible colours.



Substances which are used as emulsifiers.



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116. Name the following:

Substances which are artificial sweeteners (low calorie).



Substances which are used as essence.



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118. Name the following:

Antibiotics obtianed form various strains of gram positive and gram negative bateria.



Solid Bio-fuel



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120. Name the following:

Liquid Bio-fuel



Gaseous Bio-fuel



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122. Name the following:

Antibiotics effective against tuberculosis.



Metals which leach into the environment form low equality metalloids.



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124. Name the following:

Hydrocarbonoclastic bacteria (HCB).



Chemical susbtance from which plastic bottles are made.



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126. Name the following:

Species of bacteria which decompose. PET.



Species of fungi which decompose rubber from garbage.



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128. Name the following:

A biopesticide



Bacteria which use sulphuric acid as a source of energy.



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130. Define the following terms:

Applied microbiology.



131. Define the following terms:

Industrial microbiology.



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132. What for Probiotic food is famous?



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133. Use your brain power. In earlier class, you had prepared the solution of dry yeast for

observation of yeast. Which substance is prepared by its use on commerical basis?



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134. Which function are performed by enzymes secreted in human digestive system?



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135. Use your brain power. Food materials like cold drinks, ice creams, cakes, juces are

available in various colours and flavous.

Whether these colours and flavoures are really derived from fruits?



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136. Which different materials are decomposed in biogas plant?



137. Which useful materials are obtained through biogas plant? Which is the fuel out of those?



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138. Decomposition occurs through which organisms?



139. Why is it asked to segregate wet and dry waste in each home?



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140. What is done with the segregated waste?



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141. Which is most appropriate method of disposal of dry waste?

142. How the bacteria present in soil and root nodules of leguminous plants are useful?



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143. Which plants are cultivated to obtain the fuel?



144. Which fuels are obtained from biomass?



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145. Which materials should not be present in garbgage for its proper microbial decomposition?



146. Write short notes on: Industrial microbiology.



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147. Dairy products



Watch Video Solution

148. Write short notes on:

Probiotics.



Yoghurt.



Watch Video Solution

150. Write short notes on:

Vinegar Production.



Microbial enzymes.



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152. Write short notes on:

Xanthan gum.



Antibiotics.



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154. Write short notes on:

Land-filling sites.



Sewage Management.



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156. Write short notes on:

Clean Technology.



Microbial Inoculants.



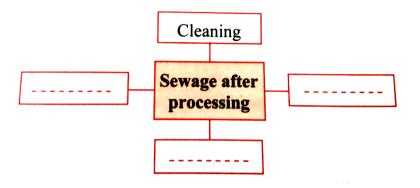
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158. Write short notes on:

Bioinsecticides.

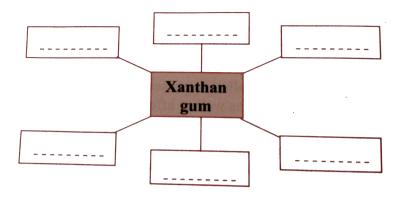


159. Complete the following conceptual picture.





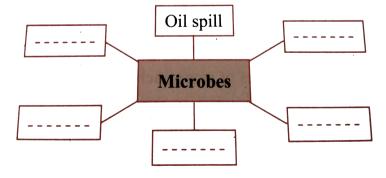
160. Complete the following conceptual picture with respect to uses.





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161. Complete the following conceptual picture related to environmental management.





162. Distinguish betwee:

Yoghurt and Cheese



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163. Distinguish betwee:

Chemical catalyst and Microbial enzymes



164. Give scientific reasons:

Milk is pasteurized at the beginning.



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165. Whey is removed during cheese production.



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166. Microbial enzymes are used instead of chemical catalysts in chemical industry.



167. Enzymes obtained by microbial process are mixed with detergents.



168. Use of mutant strains has been increased in industrial microbiology.



169. Question based on any incident:

Priya's mother has left for office, asking her to set curds for the meals, suggest ways in which Priya will set curds.



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170. Suresh is down with diarrhoea. Suggest food that can help him with his stomach trouble.



171. Swati was suffering with Tuberculosis. She was advised as course on antibiotics. Suggest methods by which Swati can improve her health by her food.



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172. Bhikaji Tambe a farmer in Kolhapur has planned a big harvest of sugarcane in his field. Suggest him ways and means for a high yield with organic farming.



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173. Compressed wastes is in the pit. It is
covered with layers of,, leafy waste
and aremixed at some places
present in the soil and other top layers
the waste. Completely filled pit is with soil
, Best quality is formed after few
davs.



174. Complete the following table representing production of beverages.

No	. Fruit	Microbe used	Role of microbe	Name of beverage
i.	Coffea arabica		Separating seeds from fruit	
ii.		Candida, Pichia (Hansenula),Saccharomyces	Separating seeds from fruit	
iii.	Grapes		Fermentation of juice	Wine
iv.	Apple	Saccharomyces cerevisiae	Fermentation of juice	

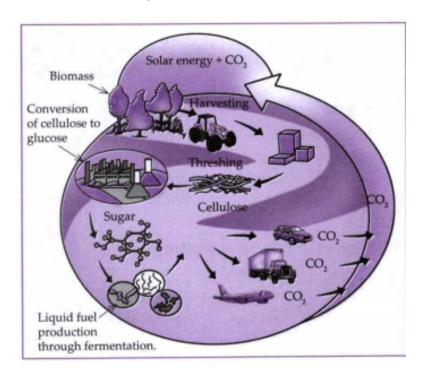


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175. Enlist the sources of various organic, acids, the microbes used to produce them and their uses.



176. Observed the following diagram and answer the questions.



Solar energy + CO_2 contributes to which process?



177. What is biomass?



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178. Who helps in the conversion of cellulose to glucose?



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179. Name the liquid fuel produced through Fermentation.



180. Classify the fuels.



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181. Who ferments sugar into liquid fuel?



182. Which type of cheese is used in western food like pizza, burger, sandwich, etc?

What is the difference between those type of cheese.



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183. What do you mean by antibiotic?



184. antibiotic precautions should be taken about their consumption?



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185. Observe the grabage vans of gram panchayat and municipality. Nowadays, there is facility of decreasing the volume of garbgage by compaction those vans. Explain the advantages of this activity.



186. You must have seen or read the news of dead fishes or oily water accumulating at the sea coasts. Why does this happen?



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187. Explain the importance of biopesticides in organic farming.



188. Which are the reason for increasing the popularity of probiotic products?



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189. How the bread and other products produced using baker's yeast are nutritious?



190. Which different microboes are useful to us?



191. Which different products can be produced with the help of microbes ?



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192. We use the fermentation process while conversion of milk into yoghurt. Which microbes are useful for this process?



193. How does the bread become spongy?



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194. Explain the production of cheese.



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195. Explain the role of microbes in farming.



196. Which precautions are necessary for proper decomposition of domestic waste?



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197. What are the benefits of mixing ethanol with petrol and diesel?



198. How can the oil spills of rivers and oceans be cleaned ?



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199. What are the differnet types of cheese?



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200. Why is it necessary to ban the use of plastic bags?



201. How can the soil polluted by acid rain be made fertile again ?



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202. Explain biofuel production with the help of a diagram



203. Complete the flow chart and answer the questions given below.

What is the basic purpose behind conversion of milk into various dairy products?



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204. Give example of one microbe used in any two of the above dairy products.



205. Explain the role of microbes in chemical pollution.



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206. Which fuels can be obtained by microbial processes? Why is it necessary to increases the use of such fuels?



207. What is role of microbes in compost production?



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208. Explain the process of Land - filling site with a neat labelled diagram.



209. How the sewage generated in your house or apartment is disposed off?



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210. Paragraph based questions. Read the paragraph and answer the following questions:

In cities sewage needs to be carried to processing unit and acted upon by microbial process. Microbes which can decompose any compound as well as destroy the pathogens of cholera, typhoid are mixed with sewage. They release methane and carbondioxide by decomposition of the carbon compounds present in sewage. Phenol oxidising bacteria decompose the xenobiotic chemicals present in sewage.

Where is sewage in cities disposed off?



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211. Which disease pathogens are destroyed by microbes?



212. Which gases are released by decomposition of carbon compounds?



Watch Video Solution

213. What is the role of Phenol oxidising bacteria?



Watch Video Solution

214. Give a heading to the paragraph.



215. Most appropriate method of disposal of dry waste is _____.

A. sanitary landfill

B. composting

C. incineration

D. recycling.

Answer:



216. _____ bateria present in Root nodules of leguminous plants help in nitrogen fixation.

- A. Rhizobium
- B. Azotobacter
- C. Geobacter
- D. Pseudomonas

Answer:



217. Say True or False: Microbes ferment sugar into liquid fuel.



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218. Find the odd word out:

Penicillin, erythromycin, gentamycin, acetic acid.

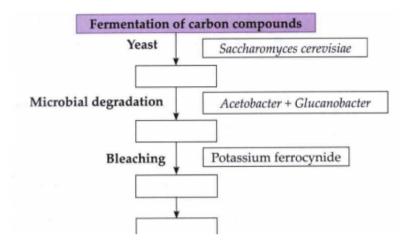




220. Write any four uses of Probiotics.



221. Complete the chart.





222. Give scientific reasons:

Milk is pasteurized at the beginning.



223. What is role of microbes in compost production?



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224. Explain the importance of biopesticides in organic farming.



225. Explain the role of microbes in chemical pollution.



Watch Video Solution

226. Explain biofuel production with the help of a diagram



227. Explain the process of Land - filling site with a neat labelled diagram.

