



BIOLOGY

BOOKS - CHETANA PUBLICATION

ENERGY FLOW IN AN ECOSYSTEM

Example

1. Answer the following question:

What is meant by nitrogen fixation?



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2. Answer the following question:

Which microbes bring about the process of nitrogen fixation?



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3. What is meant by 'ecosystem' ?



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4. Which are the different types of ecosystems?



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5. How do the interactions take place in the biotic and abiotic factors of ecosystem?



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6. An intricate network of food chains is called.....

A. Biosphere

B. Food web

C. Energy pyramid

D. Ecosystem

Answer:



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7. Fungi and other microbes are called.....

A. Producers

B. Consumers

C. Decomposers

D. Omnivores

Answer:



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8. Oxygen form..... of the atmosphere

A. 0.78

B. 0.21

C. 0.1

D. 0.9

Answer:



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9. Choose the correct alternative and write it along with its allotted alphabet:

Microbes that do not need oxygen are called....

A. Producers

B. Aerobes web

C. Anaerobes Pyramid of energy

D. Decomposers

Answer:



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10. Choose the correct alternative and write it along with its allotted alphabet:

Pattern of energy exchange in an ecosystem is called a.....

- A. Food chain
- B. Food web
- C. Pyramid of energy
- D. Trophic levels

Answer:



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11. Carbon atoms are circulated and recycled through.....

A. Nitrification and denitrification

B. Photosynthesis and respiration

C. Respiration and nitrification

D. Photosynthesis and ammonification

Answer:



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12. Conversion of ammonia into a nitrite and then nitrate is called.....

A. Nitrogen fixation

B. Denitrification

C. Nitrification

D. Ammonification

Answer:



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13. State whether the following statements are true or false. Correct the false statements

Conversion of nitrogen compounds into gaseous nitrogen is called nitrogen fixation.

A. Nitrogen fixation

B. Denitrification

C. Nitrification

D. Ammonification

Answer:



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14.is an important component of proteins and nucleic acids

A. Carbon

B. Nitroge

C. Phosphorus

D. Oxygen

Answer:



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15. Amount of matter and energy..... the lowest level to the highest level

A. decreases

B. increases

C. remains the sam

D. multiplies

Answer:



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16.is the most important source of energy in any ecosystem.

A. The Sun

B. The Moon

C. Producers

D. Decomposers

Answer:



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17. The flow of nutrients in an ecosystem is.....

A. cyclical

B. wo way transport

C. one way transport

D. toand frotransport

Answer:



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18. The Indian Institute of Ecology and Environment, Delhi, has published....

A. Invasive species in a changing

Environment

B. Encyclopedia of Ecology and

Environment

C. Environment and Ecology Magazine

D. Biodiversity and Disaster Management

Answer:





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19. Oxygen is released in the process of...

- A. Respiration
- B. Decomposition
- C. Combustion
- D. Photosynthesis

Answer:



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20.cycle is a gaseous cycle.

A. Carbon

B. Phosphorus

C. Calcium

D. Iron

Answer:



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21.is a sedimentary cycle.

A. Carbon

B. Nitrogen

C. Oxygen

D. Calcium

Answer:



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22.is a primary consumer

A. Elephant

B. Frog

C. Owl

D. Tiger

Answer:



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23.is a secondary consumer.

A. Grasshopper

B. Elephant

C. Frog

D. Human

Answer:



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24. Tiger is a /an.....

A. Producer

B. Primary consumer

C. Apex consumer

D. Secondary consumer

Answer:



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25. Carbon dioxide is released into the atmosphere through.....

A. burning of fossil fuels

B. volcanic activity

C. respiration

D. all of these

Answer:



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26. in 1942 studied the food chain and energy flow through it.....

A. Lindeman

B. Darwin

C. Calypso

D. Chu win lee

Answer:



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27. After the death of apex consumers, energy becomes available to.....

A. Decomposers

B. Producers

C. Herbivores

D. Carnivores

Answer:



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28. Green plants of the ecosystem store.....
in the form of food.

- A. Solar energy
- B. Chemical energy
- C. Thermal energy
- D. Electrical energy

Answer:



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29. Plants convert carbon dioxide into.....
by the process of photosynthesis

A. Carbohydrates

B. Proteins

C. Fats

D. Vitamins

Answer:



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30. Carnivores feed upon.....

A. Decomposers

B. Herbivores

C. Producers

D. Secondary producers

Answer:



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31.is used up in the process like respiration, combustion, decomposition, corrosion, rusting, etc.

A. oxygen

B. Nitrogen

C. Argon

D. Helium

Answer:



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32. Nitrogen forms.....% of the atmosphere.

A. 79

B. 78

C. 21

D. 2

Answer:



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33. Most organisms cannot use the free form of.....

A. Oxygen

B. Nitrogen

C. Carbon dioxide

D. Carbon monoxide

Answer:



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34.first proposed the concept of Ecological Pyramid in 1927

A. Darwin

B. Newton

C. Elton

D. Edison

Answer:



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35. Ecological Pyramid is called.....

A. Hills

B. Mounts

C. Eltonian

D. Darwinism

Answer:



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36.is produced from oxygen through various atmospheric processes.

A. Nitrogen dioxide

B. Nitrite

C. Ozone

D. CFC

Answer:



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37. Interactions between producers, consumers and saprophytes in a definite sequence is called.....

A. Links

B. Internet

C. Food chain

D. Connectors

Answer:



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38. Many food chains interconnected at various levels is called.....

A. Link

B. Internet

C. Connector

D. Food web

Answer:



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39. Decomposers dissipate some amount of energy in the form of.....

A. Light

B. Electricity

C. Sound

D. Heat

Answer:



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40. The flow of nutrients in an ecosystem is.....

- A. Non- cyclic
- B. Mono directiona
- C. Reverse directional
- D. Cyclical

Answer:



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41. The cyclical flow of nutrients within an ecosystem is called.....

A. Biological cycle

B. Chemical cycl

C. Solar cycle

D. Bio-geo chemical cycle

Answer:



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42.is an accumulation of the main abiotic gaseous nutrient materials found in the earth atmosphere.

A. Gaseous cycle

B. Water cycle

C. Solar cycle

D. Lunar cycle

Answer:



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43. Oxygen is released in the process of...

A. Photosynthesis

B. Respiration

C. Oxidation

D. Decomposition

Answer:



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44. Charles Elton studied the.....of the Beer islands in England..

- A. Tundra ecosystem
- B. Mediterranean ecosystem
- C. Equatorial ecosystem
- D. Taiga ecosystem

Answer:



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45., in 1942 studied the food chain and energy flow though it.

- A. Charles Elton
- B. Lindeman
- C. Robert Whittaker
- D. Eichlar

Answer:



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46. After the death of apex consumers, energy becomes available to.....

- A. Primary consumer
- B. Secondary consumer
- C. Decompose
- D. Sim

Answer:



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47. Nitrogen forms.....% of the atmosphere.

A. 0.28

B. 0.78

C. 0.48

D. 0.82

Answer:



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48.first proposed the concept of Ecological Pyramid in 1927

A. Charles Elton

B. Lindeman

C. Eichler

D. John Miur

Answer:



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49. Oxygen is released in the process of...

- A. respiration
- B. Photosynthesis
- C. Combustion
- D. All of these

Answer:



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50. Find the odd man out

Photosynthesis, Respiration, Decomposition,
Forest Fir



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51. Find the odd man out

Combustion, Corrosion, rusting, formation of
ozone, Photosynthesis



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52. Find the odd man out

Biological nitrogen fixation, ammonification, nitrification, denitrification, industrial nitrogen fixation



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53. Find the odd man out

Frog, Owl, Squirrel, Fox



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54. Find the odd man out

Grasshopper, squirrel, elephant, lion



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55. Find the odd man out

Nitrogen cycle, oxygen cycle, carbon cycle,
phosphorus cycle



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56. Find the odd man out

Photosynthesis, Nitrification, Ammonification,
Denitrification



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57. Find out the correlation: Grasshopper :
Primary consumer :: Tiger.....



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58. Find out the correlation: Owl : Secondary consumer Squirrel.....



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59. Find out the correlation:

Flow of energy : One way :: Flow of nutrients:.....



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60. Find out the correlation:

Plants : Producers :: Bacteria and Fungi :



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61. Find out the correlation:

Nitrogen : Gaseous cycle :: Phosphorus.....



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62. Find out the correlation:

Oxygen : 21% :: Nitrogen :



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63. Find out the correlation:Photosynthesis:

Carbon cycle::Ammonification



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64. Find out the correlation:

Respiration : Oxygen cycle :: Nitrification :



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65. Find out the correlation:

Respiration : Biotic process :: Combustion :



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66. Find out the correlation: Microbes using oxygen : Aerobes :: Microbes not using oxygen :



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67. Difference between:

Azotobacter and Rhizobium



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68. Difference between:

Biotic components and Abiotic component



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69. Difference between:

Producers and Herbivores



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70. Difference between:

Carnivores and Herbivores



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71. Difference between:

Phosphorus cycle and Carbon cycle



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72. What is the difference between food chain and food web?



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73. State whether the following statements are true or false. Correct the false statements
Herbivores occupy the third trophic level in a food chain.



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74. State whether the following statements are true or false. Correct the false statements

Apex consumers use herbivores and carnivores as their food.



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75. State whether the following statements are true or false. Correct the false statements

Humans are apex consumers.



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76. State whether the following statements are true or false. Correct the false statements

Omnivores feed only on carnivores.



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77. State whether the following statements are true or false. Correct the false statements

A food chain has two links



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78. State whether the following statements are true or false. Correct the false statements

The number of consumers in a food web is fixed



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79. State whether the following statements are true or false. Correct the false statements

The amount of matter and energy goes on increasing at every level in a food chain.



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80. State whether the following statements are true or false. Correct the false statements

Robert Brown first proposed the concept of Ecological Pyramid.



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81. State whether the following statements are true or false. Correct the false statements

After the death of apex consumers, the energy becomes available to decomposers.



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82. State whether the following statements are true or false. Correct the false statements

The gaseous cycle is a speedier cycle than the sedimentary cycle.



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83. State whether the following statements are true or false. Correct the false statements

Climatic changes and human activities seriously affect the speed, intensity and equilibrium of bio-geo-chemical cycles.



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84. State whether the following statements are true or false. Correct the false statements

Carbon dioxide is released in the atmosphere through photosynthesis.



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85. State whether the following statements are true or false. Correct the false statements

The equilibrium of oxygen and carbon dioxide gases is maintained by decomposer



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86. State whether the following statements are true or false. Correct the false statements

The conversion of ammonia into a nitrite and then nitrate is called nitrogen fixation



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87. State whether the following statements are true or false. Correct the false statements

Conversion of nitrogen compounds into gaseous nitrogen is called nitrogen fixation.





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88. State whether the following statements are true or false. Correct the false statements

Release of ammonia through decomposition of dead plants and excretory wastes of organisms is called ammonification.



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89. State whether the following statements are true or false. Correct the false statements

The cyclic flow of nutrients within an ecosystem is called Energy Pyramid.



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90. The animals that feed on herbivores.



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91. Organisms that feed on herbivores and carnivores.



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92. Two examples of primary consumers



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93. Two examples of secondary consumers



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94. Two examples of Apex consumers.



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95. Levels in the food chain.



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96. Organisms that decompose the dead bodies of plants and animals.



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97. Process which releases oxygen



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98. Release of ammonia through decomposition of dead bodies and excretory wastes of organisms



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99. Conversion of nitrogen into nitrates and nitrites through atmospheric, industrial and biological processes.



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100. What is a food chain?



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101. What is food web?



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102. Justify the statements

Producers form the first trophic level in the food chain. Herbivores depend directly on producers



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103. Define Energy pyramid or pyramid of energy.



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104. What is Bio-geo-chemical cycle?



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105. What is Carnot cycle?



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106. What is Oxygen cycle?



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107. What is nitrogen cycle?



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108. What is nitrogen fixation?



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109. Given scientific reasons:

The flow of energy in the ecosystem is unidirectional.





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110. Give reasons:

Equilibrium is necessary in the various biogeochemical cycle.



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111. Give reasons:

The flow of nutrients through an ecosystem is cyclic.



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112. Difference between gaseous cycle and sedimentary cycle.



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113. Distinguish between:

Carbon Cycle and Nitrogen Cycle



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114. Distinguish between:

Flow of matter and Flow of energy.



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115. Write a short note on Trophic level.



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116. Write short note on

Food Web



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117. Justify the statements

Producers form the first trophic level in the food chain. Herbivores depend directly on producers



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118. The flow of nutrients in an ecosystem is.....





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119. Justify the statements

Plants in an ecosystem are called autotrophs.



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120. Food chain in a forest ecosystem:

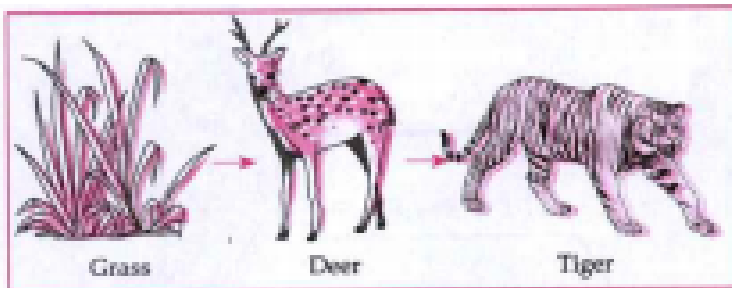


Fig. 7.3 : Food chain in a forest ecosystem



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121. Food chain in an aquatic ecosystem

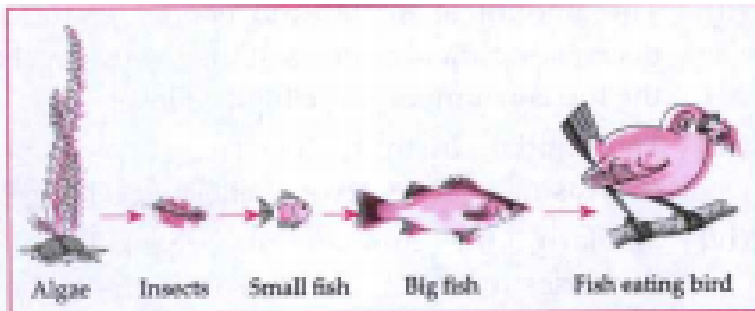
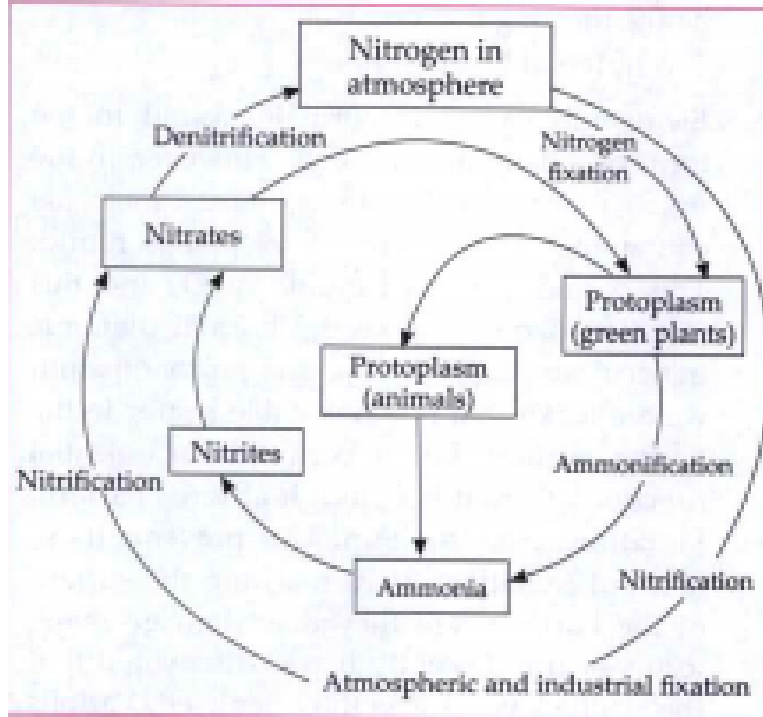


Fig. 7.4 : Food chain in an aquatic ecosystem (Pond)



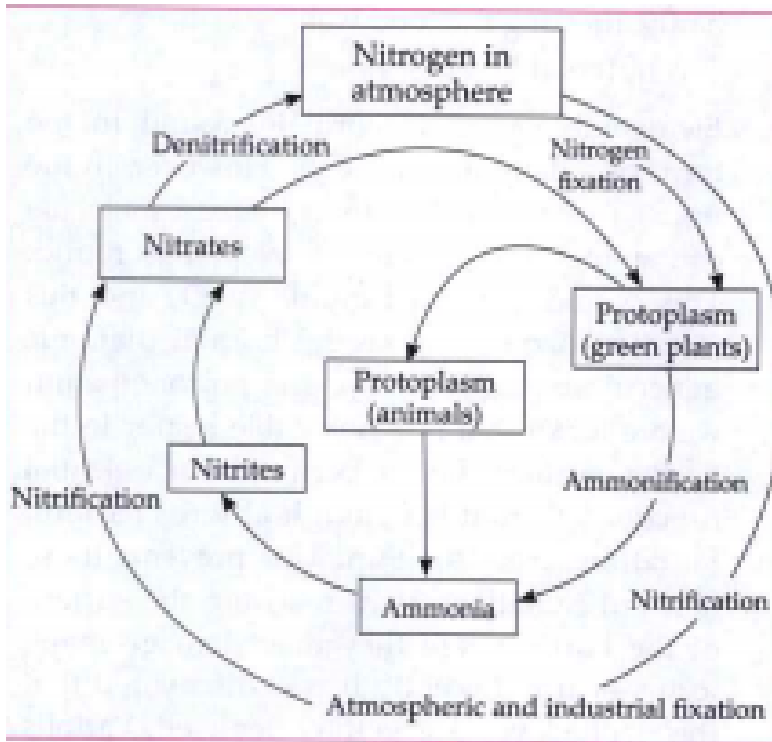
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122. Animals produce which product of nitrogen?



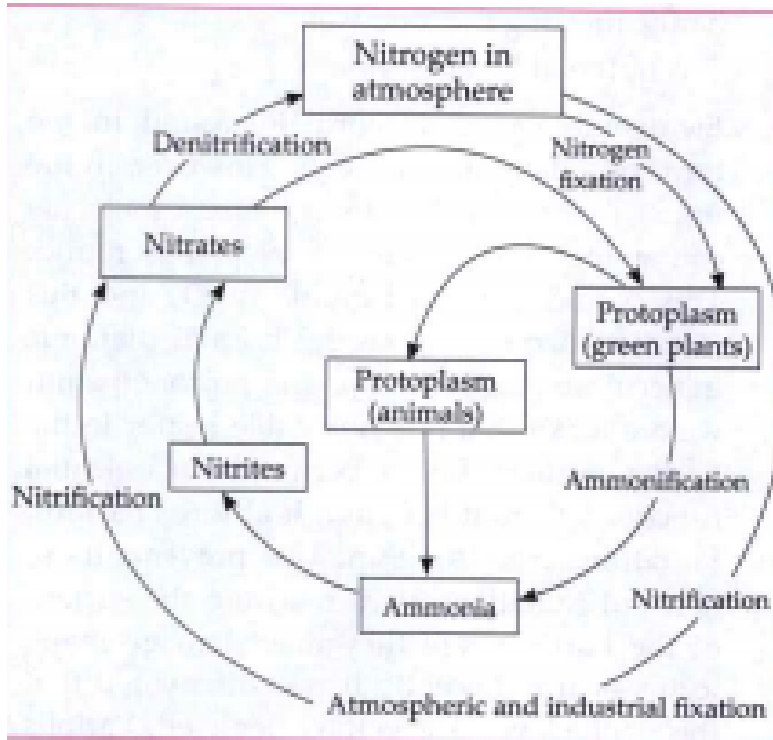
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123. Name two nitrifying organisms.



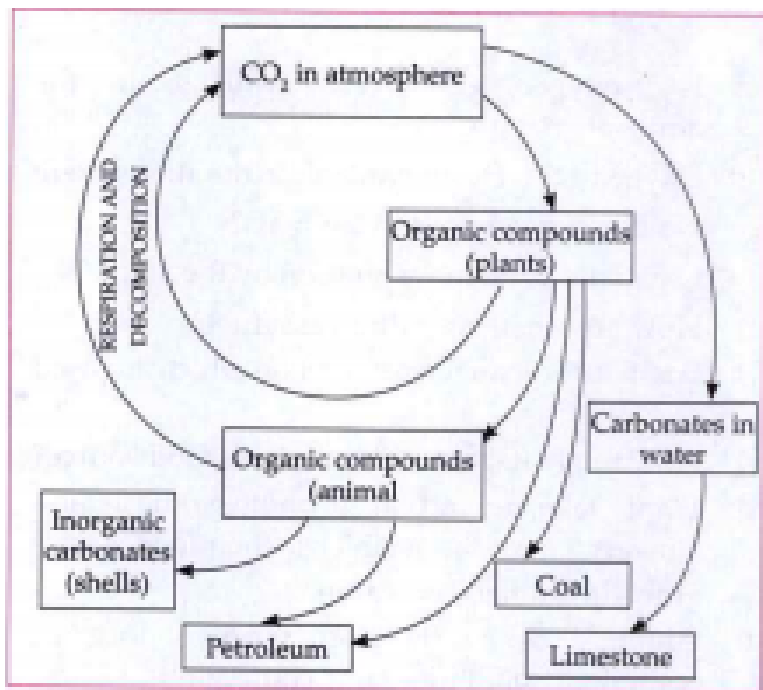
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124. Which type of bio-geo-chemical cycles does nitrogen follow?



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125. Carbon cycle



Is carbon dioxide gas freely available in the atmosphere?



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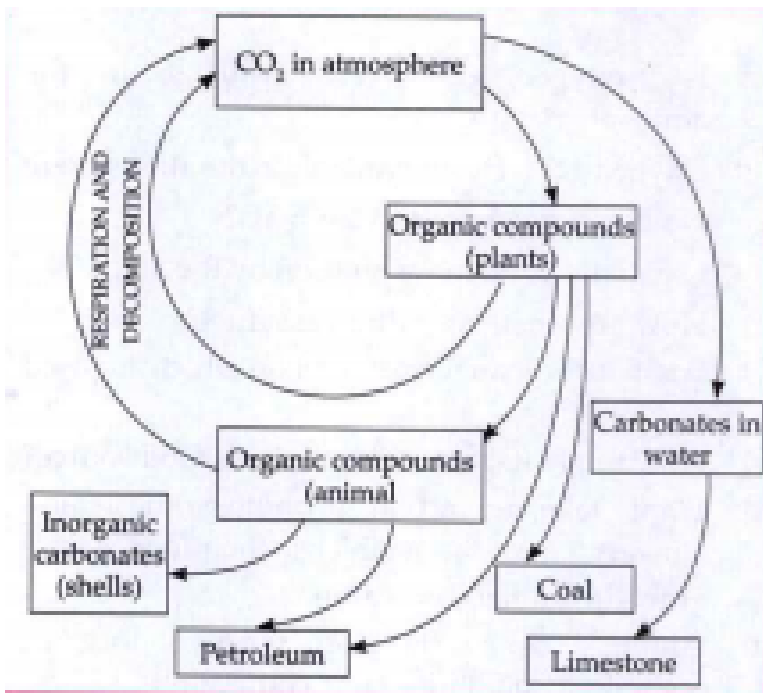
126. Carbon cycle

How is carbon found in water?



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127. How are we using carbon as a fuel?





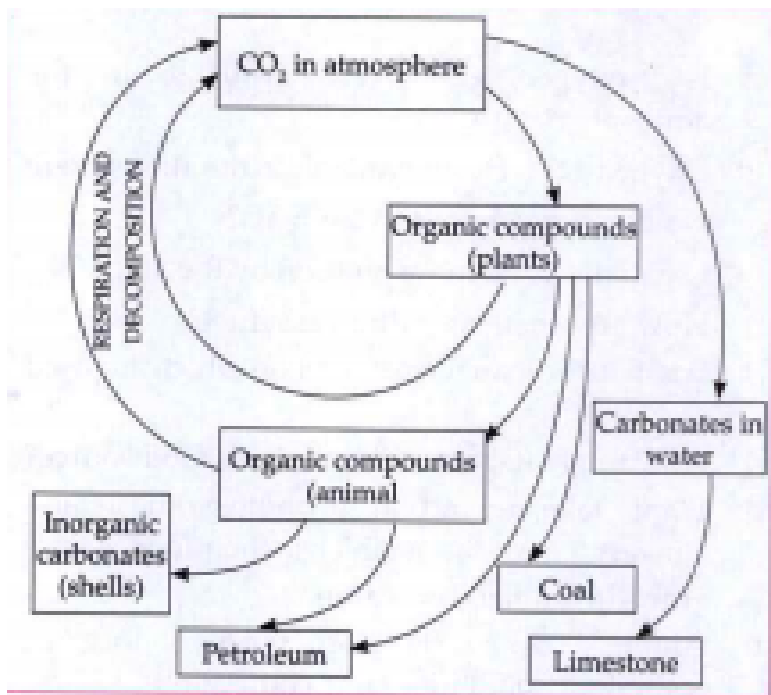
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128. How do plants use carbon as their food source?



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129. How do animals use carbon?



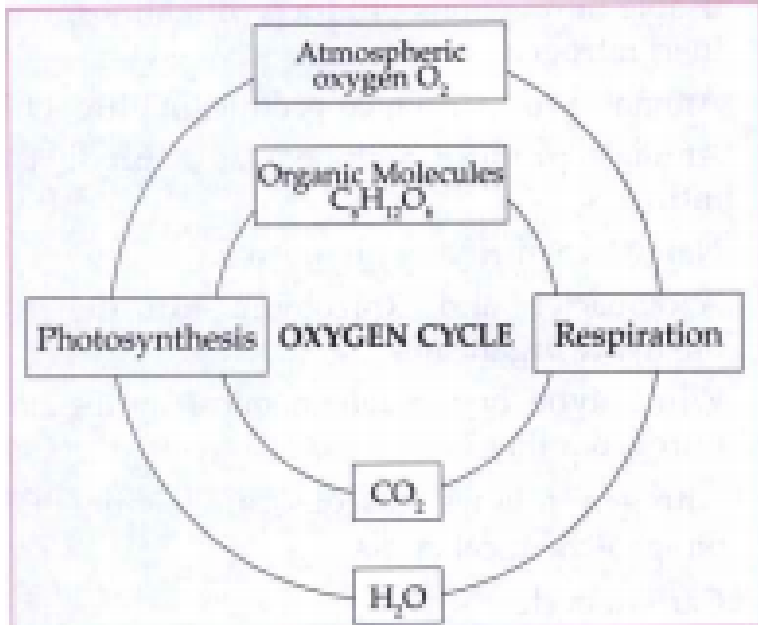
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130. Which type of bio-geo-chemical cycles does carbon follow?



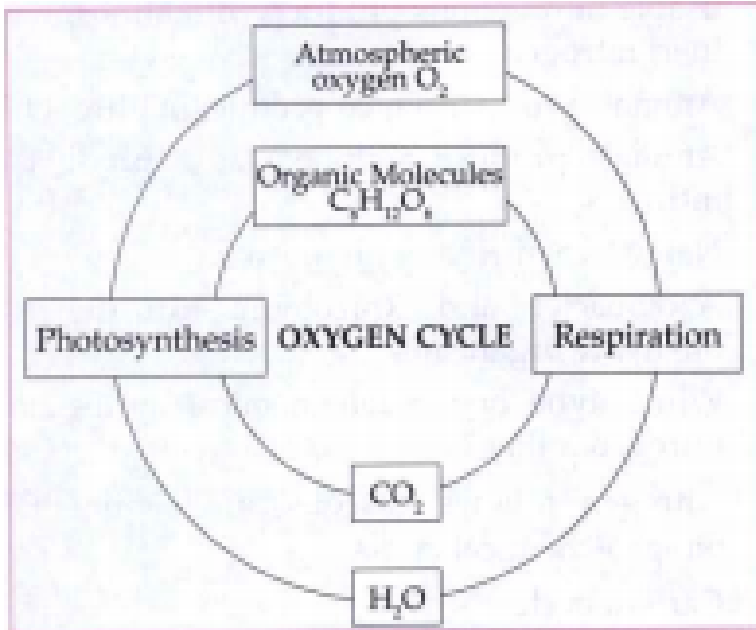
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131. Is oxygen gas freely available in the atmosphere?



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132. How is oxygen used by animals?



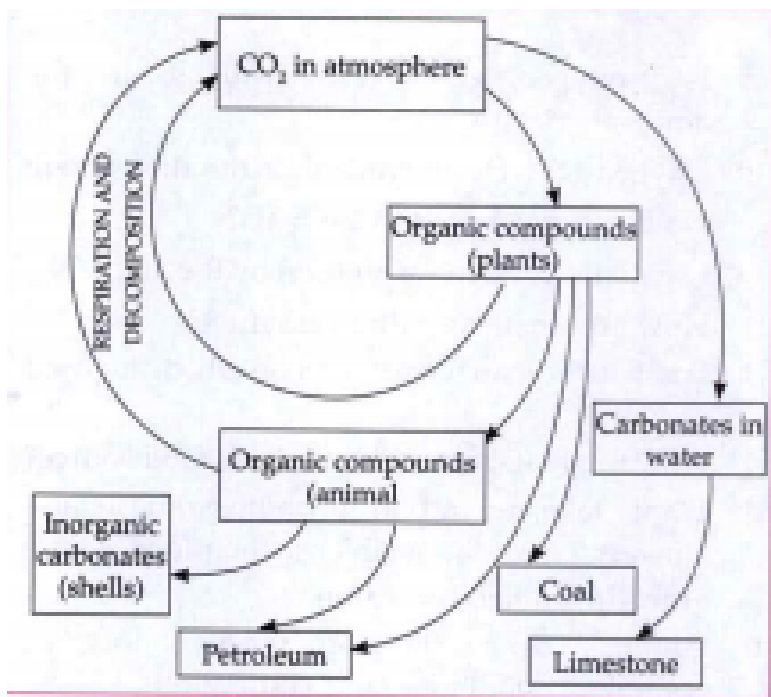
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133. How do plants use carbon as their food source?



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134. How do animals use carbon?



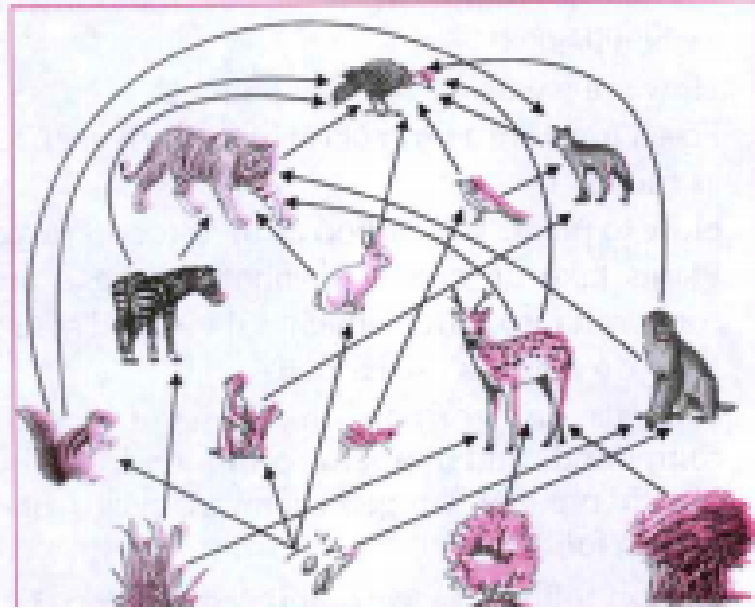
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135. Which type of bio-geo-chemical cycles does carbon follow?



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136. What is the basic unit of food web?



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137. Which organisms are on the 1st level of
this food web?

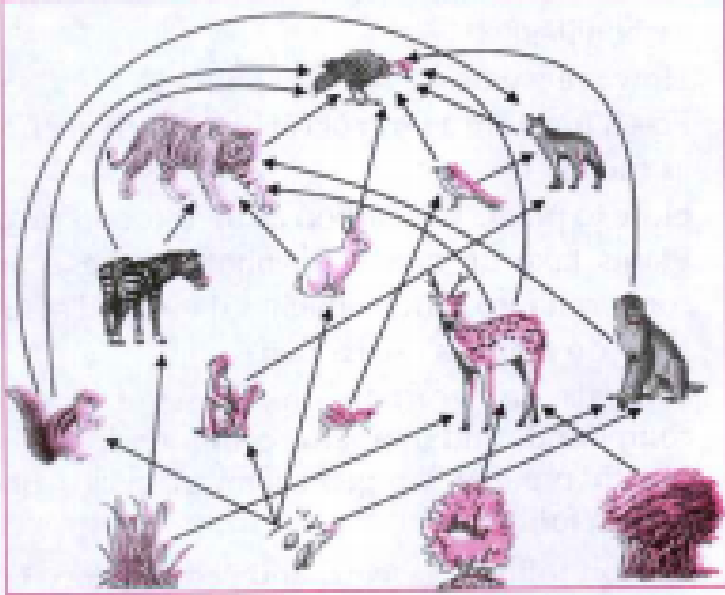


Fig. 7.2 : Food Web



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138. What are the animals which depend on producers directly for nutrition called?

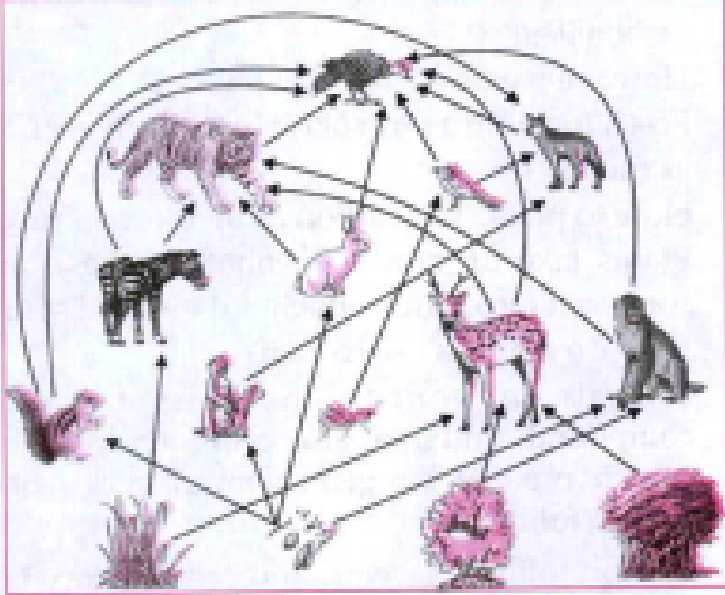


Fig. 7.2 : Food Web



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139. What are the animals which eat any type of food for nutrition called

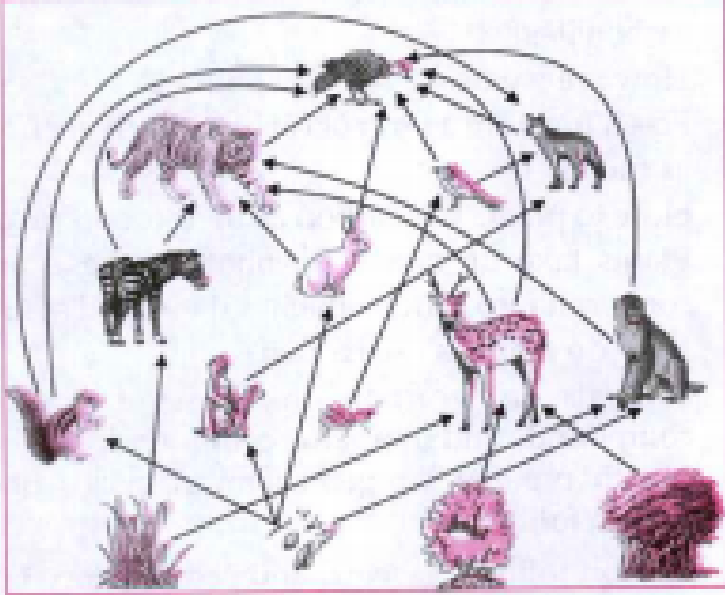


Fig. 7.2 : Food Web



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140. What will happen if one animal in the food chain goes extinct?

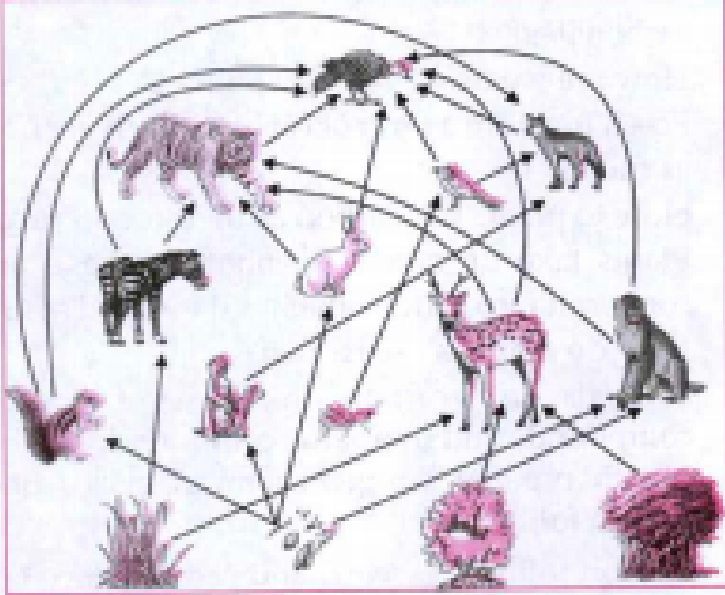


Fig. 7.2 : Food Web



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141. What are the factors badly affecting the food web?

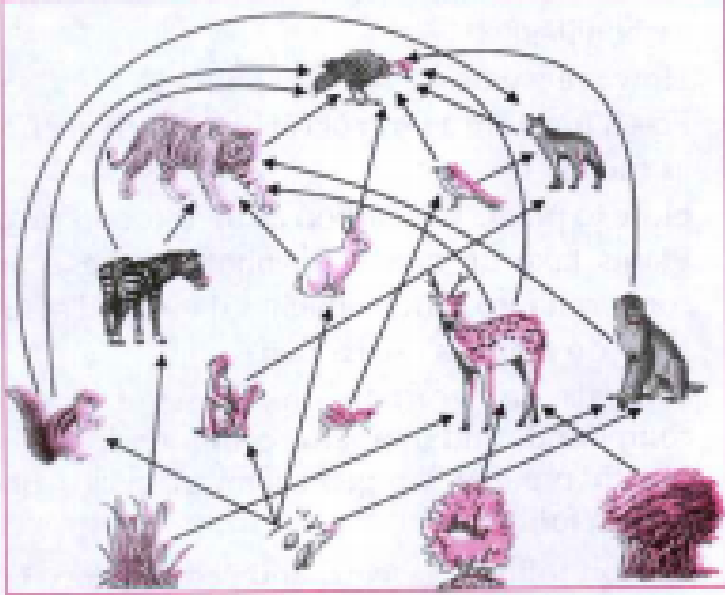


Fig. 7.2 : Food Web



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142. Nitrogen Cycle: Why nitrogen cycle is called bio-geochemical cycle?



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143. Nitrogen Cycle: Why is nitrogen cycle important to us?



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144. Nitrogen Cycle: Name important process of nitrogen cycle.



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145. Nitrogen Cycle: What can affect the nitrogen cycle negatively?



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146. Nitrogen Cycle: What can affect the nitrogen cycle negatively?



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147. What is food web?



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148. Food Web: In a food web which organism are called producers?



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149. Food Web: What is the role of keystone species?



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150. Food Web: What is a keystone species?



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151. Food Web: What does each level of food chain represent?



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152. Carbon cycle: Which gas has green house effect as compared to CO_2 ?





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153. Carbon cycle: How does dissolved CO_2 affect oceans?



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154. Carbon cycle: Why is carbon cycle called bio-geo chemical cycle?



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155. Carbon cycle: How is carbon dioxide removed from atmosphere?



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156. Carbon cycle: Who discovered the carbon cycle?



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157. Answer the following question:

What would you do to help maintain the

equilibrium in the various bio-geochemical cycles? Explain in brief.



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158. Answer the following question:

Explain in detail the interrelationship between the food chain and food webs.



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159. Answer the following question:

State the different types of bio-geochemical cycles and explain the importance of those cycles.



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160. Answer the following question:

What type of changes occur in the amount of energy during its transfer from plants to apex consumers?





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161. Nitrogen Cycle: Name important process of nitrogen cycle.



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162. Explain the following questions with suitable diagrammatic representation. Carbon Cycle.



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163. Explain the following questions with suitable diagrammatic representation.

Nitrogen Cycle.



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164. Explain the following questions with suitable diagrammatic representation. Oxygen

Cycle.



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165. Draw neat labelled diagram of Food chain.



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166. Make concept diagram and explain. Energy Pyramid.



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167. Choose the correct alternative and write it along with its allotted alphabet:

Microbes that do not need oxygen are called.....

A. Producers

B. Aerobes

C. Anaerobes

D. Decomposers

Answer:



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168. Conversion of ammonia into a nitrite and then nitrate is called.....

A. Nitrogen fixation

B. Denitrification

C. Nitrification

D. Ammonification

Answer:



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169.is the most important source of energy in any ecosystem.

A. The Sun

B. The Moon

C. Producers

D. Decomposers

Answer:



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170.cycle is a gaseous cycle.

A. Carbon

B. Phosphorus

C. Calcium

D. Iron

Answer:



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171. Say True or False:

Humans are apex consumers.



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172. Process which releases oxygen



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173. Find the odd man out

Frog, Owl, Squirrel, Fox



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174. Find out the correlation:

Plants : Producers :: Bacteria and Fungi :



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Exercise

1. Energy flow through an ecosystem is 'one way'.



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2. Give reasons:

Equilibrium is necessary in the various biogeochemical cycle.



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3. Give reasons:

The flow of nutrients through an ecosystem is cyclic.



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4. Write a note on trophic level.



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5. What is nitrogen fixation?



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6. Define photosynthesis.



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7. Define Ammonification.



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8. Make concept diagram and explain. Energy Pyramid.



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9. Write short note on

Food Web



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10. Nitrogen Cycle: Why is nitrogen cycle important to us?



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11. What is a food chain?



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12. Explain/describe carbon cycle.



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