



BIOLOGY

BOOKS - MBD

Morphology of Flowering Plants

Example

1. What are angiosperms?



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2. Differentiate annuals and biennials.



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3. Define perennial plants.



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4. From which part of embryo, primary root develops?



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5. Name the plants in which roots are poorly developed or absent.



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6. In which plants tuberous roots are found?



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7. If you get a 4 cm piece of woody flowering plant, how will you decide anatomically whether it is root or stem? Give two reasons.



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8. Name plants in which roots photosynthesise food.



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9. Name a plant with respiratory roots.



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10. What type of roots are found in maize?



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11. What type of roots are found in turnip?



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12. Why some tap roots become swollen and fleshy?



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13. Why is development of root branches is endogaeous?



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14. What is apical bud?



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15. Stems of some plants remain in the ground and serve the functions of perennation and storage of food. Give examples.



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16. Define runner.



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17. What type of stem is found in Jasmine (Jasminum)?



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18. Define Sucker.



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19. What are tendrils? Give examples.



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20. What are phylloclades?



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21. In which plants cladodes are found?



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22. How runner of grasses can serve as mean of vegetative propagation?





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23. How can a plant stem protect against grazing?



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24. What is meant by a leaf?



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25. What is a leaf lamina?



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26. Where do leaves arise from?



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27. What term is given to the point on the stem, from where leaves arise?



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28. What are stipules?



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29. Mention the functions of veins.



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30. Give an example of a plant with palmately compound leaf.



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31. Give any two examples of leaf tendrils.



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32. Define inflorescence.



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33. Name the main types of inflorescence.



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34. What do you mean by determinate inflorescence?



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35. Give one example of heterogamous type of capitulum.



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36. Which type of inflorescence is present in corinader?



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37. What is flower ? What name is given to the stalk of flower?



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38. Define bract.





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39. Can the sepals be caducous? At what stage?



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40. Which are triecious plants?



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41. Name the outer covering of seed.



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42. Give one example of non-endospermic dicot seed.



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43. What is pomology?



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44. Write two examples of true fruits?



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45. What type of ovary is found in family Solanaceae?



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46. Write the botanical names of

Tomato



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47. Write the botanical names of

Chillies



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48. Write the botanical names of

Tobacco



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49. Write the botanical names of

Radish



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50. Describe the corolla of family Fabaceae.



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51. What is a floral formula?



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52. Name any two common plants belonging to family Liliaceae.



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53. Rewrite the correct Floral formula of family fabaceae.



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54. Write one diagnostic feature of family fabaceae.



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55. What do these symbols \oplus + indicate?



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56. Which type of ovary is found in family solanaceae?



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57. Why are flowers of cucumber referred to as epigynous?



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58. What is meant by placentation?



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59. Define parthenocarpy.



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60. Name edible part of Apple, Coconut and Almond.



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61. Write the floral formula of *Solanum nigrum*.



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62. What is mother axis?



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63. Zygomorphic flowers with descending imbricate aestivation is the characteristic feature of the which family?



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64. Fill in the blanks

When stamens are attached to petals they areas in.....





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65. Fill in the blanks

Each ovary bears one or more ovules attached to a flattened cushion called.....



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66. Fill in the blanks

The root tip is covered by a



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67. Fill in the blanks

The shoot system is developed fromof the embryo.



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68. Fill in the blanks

Stem creeping on the ground, having long internodes are called..... .



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69. True or False

Allium cepa belongs to family solanceae.



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70. True or False

Rhizomes occur in plants such as ginger and banana.



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71. True or False

Thorns are found in plants like Citrus and Bougainvillea.



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72. True or False

Veins are irregularly distributed to form network in parallel venation.



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73. True or False

Flowers of family fabaceae are bisexual and zygomorphic.



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74. Give the technical terms used for the following:

Plants growing on other plants but do not take food and water from them.



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75. Give the technical terms used for the following:

Long whip like 9+2 structure as that of cilia.



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76. Give the technical terms used for the following:

Formation of Fruiting body.



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77. Give the technical terms used for the following:

A thin spirally coiled branch, very sensitive to contact.



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78. What is meant by modification of root?

What type of modification of root is found in :

Banyan tree



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79. What is meant by modification of root?

What type of modification of root is found in :

Turnip



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80. What is meant by modification of root?

What type of modification of root is found in :

Mangrove trees.



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81. Justify the following statements on the basis of external features:

Underground parts of a plant are not always roots.



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82. Justify the following statements on the basis of external features:

Flower is a modified shoot.



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83. How is a pinnately compound leaf different from a palmately compound leaf?



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84. Explain with suitable examples the different types of phyllotaxy.



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85. Define the following terms: aestivation



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86. Define the following terms: placentation



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87. Define the following terms: actinomophic



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88. Define the following terms: zygomorphic



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89. Define the following terms: superior ovary



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90. Define the following terms: perigynous
flower



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91. Define the following terms: epipetalous stamen



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92. Differentiate between:

Racemose and cymose inflorescence



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93. Differentiate between:

Fibrous roots and adventitious root



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94. Differentiate between : Apocarpous and syncarpous ovary



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95. Draw the labelled diagram of the following:
gram seed



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96. Draw the labelled diagram of the following:
V.S. of maize grain



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97. Enumerate modifications of stem with suitable examples.



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98. Describe the various types of placentations found in flowering plants.



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99. What is a flower? Describe the parts of a typical angiosperm flower.



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100. How do the various leaf modifications help plants?



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101. Define the term inflorescence. Explain the basis for the different types



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102. Write the floral formula of a actinomorphic, bisexual, hypogynous flower with five united sepals, five free petals, five free stamens and two united carples with superior ovary and axile placentation.



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103. Describe the arrangement of floral members in relation to their insertion on thalamus.



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104. Roots obtain oxygen from air in the soil for respiration. In the absence or deficiency of O_2 root growth is restricted or completely stopped . How do the plants growing in

marshlands or swamps obtain their O_2 required for root respiration?



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105. Write floral formula for a flower which, is bisexual, actinomorphic, sepals five, twisted aestivation, petals five , valvate aestivation, stamens six, ovary trilocular, syncarpous , superior, trilocular with axile placentation.



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106. In *Opuntia* the stem is modified into a flattened green structure to perform the function of leaves. Cite some other examples of modifications of plant parts for the purpose of photosynthesis.



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107. In swampy area like the Sunderbans in West Bengal, Plants bear special kind of roots called.....



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108. In aquatic plants like Pistia and Eichhornia, leaves and roots are found near



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109. Reticulate and parallel venation are characteristic ofand..... Respectively.



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110. Which parts in ginger and onion are edible?



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111. In epigynous flower, ovary is situated below the



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112. Add the missing floral organs of the given floral formula of Fabaceae.

A. C

B.

C.

D.

Answer:



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113. Name the body part modified for food storage in the following:

Carrot



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114. Name the body part modified for food storage in the following:

Calocasia



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115. Name the body part modified for food storage in the following:

Sweet potato.....



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116. Name the body part modified for food storage in the following:

Asparagus



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117. Name the body part modified for food storage in the following:

Radish



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118. Name the body part modified for food storage in the following:

Potato



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119. Name the body part modified for food storage in the following:

Dahlia



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120. Name the body part modified for food storage in the following:

Turmeric



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121. Name the body part modified for food storage in the following:

Gladiolus



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122. Name the body part modified for food storage in the following:

Portulaca.....



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123. Name the body part modified for food storage in the following:

Ginger



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124. Give two examples of roots that develop from different parts of the angiospermic plant other than the radicle.



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125. The essential functions of roots are anchorage and absorption of water and minerals in the terrestrial plant. What functions are associated with the roots of aquatic plants? How are roots of aquatic plants and terrestrial plants different?



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126. Draw diagrams of a typical monocot and dicot leaves to show their venation pattern.



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127. A typical angiosperm flower consists of four floral parts. Give the names of the floral parts and their arrangements sequentially.

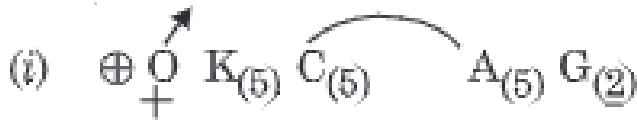


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128. Given are floral formulae of well known plants.

Draw floral diagrams from these floral

formulae.



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129. Reticulate venation is found in dicot leaves while in monocot leaves venation is of parallel type. Biology being a 'Science of exceptions', find out any exception to this generalization.



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130. You have heard about several insectivorous plants that feed on insects. Nepenthes or the pitcher plant is one such example. Which usually grows in shallow water or in marsh lands. What part of the plant is modified into a 'pitcher'? How does this modification help the plant for food even though it can photosynthesize like any other green plant?



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131. Mango and coconut are 'drupe' type of fruits. In mango fleshy mesocarp is edible . What is the edible part of coconut ? What does milk of tender cocnut represent?



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132. How can you differentiate between free central and axile placentation?



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133. Tendrils are found in the following plants.

Identify whether they are stem tendrils or leaf tendrils:

Cucumber



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134. Tendrils are found in the following plants.

Identify whether they are stem tendrils or leaf tendrils:

Peas



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135. Tendrils are found in the following plants.

Identify whether they are stem tendrils or leaf tendrils:

Pumpkins



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136. Tendrils are found in the following plants.

Identify whether they are stem tendrils or leaf tendrils:

Grapevine



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137. Tendrils are found in the following plants.

Identify whether they are stem tendrils or leaf tendrils:

Watermelons.



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138. Why is maize grain usually called as a fruit and not a seed?



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139. Tendrils of grapevines are homologous to the tendril of pumpkins but are analogous to that of pea. Justify the above statement.



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140. Rhizome of ginger is like the roots of other plants that grows underground. Despite this fact ginger is a stem and not a root. Justify.



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141. Differentiate between

Bract and Bracteole



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142. Differentiate between

pulvinus and petiole



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143. Differentiate between

Pedicel and peduncle



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144. Differentiate between

Spike and spadix



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145. Differentiate between

Stamen and Staminode



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146. Differentiate between

Pollen and pollenium



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147. Distinguish between families Fabaceae, Solanaceae, Liliaceae on the basis of gynoecium characteristics . Also write economic importance of any one of the above family.



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148. Describe various stem modifications associated with food storage, climbing and protection.





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149. Stolon, offset and rhizome are different forms of stem modifications. How can these modified forms of stem be distinguished from each other?



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150. The mode of arrangements of sepals or petals in a floral bud is known as aestivation.

Draw the various types of aestivation possible for a typical pentamerous flower.



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151. Describe the various types of placentations found in flowering plants.



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152. Sunflower is not a flower. Explain.



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153. How do you distinguish between hypogeal germination and epigeal germination? What is the role of cotyledon(s) and the endosperm in the germination of seeds?



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154. Seeds of some plants germinate immediately after shedding from the plants while in order plants they require a period of

rest before germination. The later phenomena is called as dormancy. Give the reasons for seed dormancy and some methods to break it:



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155. Name the two main parts of angiospermic plant.



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156. From which part of embryo, primary root develops?



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157. What type of stem is found in Jasmine (Jasminum)?



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158. Define Sucker.



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159. What are tendrils? Give examples.



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160. What are phylloclades?



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161. Define terms:

Terminal bud



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162. Define terms:

Axillary bud.



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163. Name the angiospermic plants having one cotyledon in their seeds.



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164. State whether potato is stem or root.



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165. Define venation.



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166. Define phyllotaxy.



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167. What is cladode?



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168. Name the outer covering of seed.



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169. What type of fruit tomato is?



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170. Give the names of the plants in which following types of inflorescences are found:
Catkin, Capitulum and Spikelet



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171. Name a cultivated plant in which neither fruits nor seeds are formed.



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172. What is funiculus?



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173. Give three examples of false fruits.



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174. Name a family with epipetalous stamens.



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175. To which family Asparagus belongs?



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176. Write the floral formula of *Solanum nigrum*.



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177. Write the type of placentation in Brassica and Allium.



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178. In which family cruciform corolla and tetradynamous condition of stamens is found?



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179. What are two main groups of angiospermic plants?



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180. Classify Angiosperms.



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181. What are the two main parts of a plant?



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182. Define root.



Watch Video Solution

183. Differentiate tap root system and adventitious root system.



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184. Name four modifications of tap root for storage. Give examples.



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185. Make a table showing modifications of adventitious roots for storage of food.



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186. Discuss various modifications of roots which provide mechanical support.



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187. give features and examples of parasitic, assimilatory and reproductive roots.



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188. Differentiate between fusiform and napiform roots.



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189. Write a note on respiratory roots.



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190. Write the differences between stem and root.



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191. Define buds, nodes and internodes. What is the difference between axillary bud and terminal bud?



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192. How do the buds protect themselves?



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193. Give any four differences between rhizome and bulb.



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194. Differentiate between corm and bulb(3 points).



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195. Give any four morphological differences between potato tuber and tuberous roots of Dahlia.



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196. Differentiate between thorn, spine and prickle.



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197. Phylloclade and cladode both are aerial modifications of the stem. Justify with examples.



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198. What do you understand by special types of inflorescence? Describe them with examples.



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199. What do you understand by staminode and pistillode?



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200. Write a note on bulbil.



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201. where are leaflets attach in palmate and pinnate compound leaf.





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202. How would you differentiate leaflets of a compound leaf from simple leaves of a branch? Differentiate between leaf tendril and a stem tendril.



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203. What are different types of a compound leaf?



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204. Mention three primary functions of leaf.



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205. Give reasons for the following:

Rhizome of ginger is found underground, but it is not root.



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206. Give reasons for the following:

In *Opuntia*, stem is flat, leaf-like and photosynthetic.



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207. Give reasons for the following:

Sunflower is a heterogamous type of capitulum.



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208. Give reasons for the following:

Leaf of *Coriandrum* is of decomposed type.



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209. List the kinds of inflorescence.



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210. Differentiate between:

Racemose and cymose inflorescence





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211. Differentiate among spike, umbel, corymb and racemose head with suitable examples.



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212. Differentiate spadix and capitulum.



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213. Distinguish between corymb and umbel.



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214. Write short note on Cyathium and Hypanthodium.



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215. Differentiate spadix and capitulum.



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216. Define flower. Name only non-essential parts.



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217. which one is monocot and dicot ;-maize grain and pea seed.



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218. Write distinguishing features of family Liliaceae.



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219. Write economic importance of family liliceae.



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220. Write one diagnostic feature of family fabaceae.



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221. Write the diagnostic characters of family Solanaceae.



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222. What is compound leaf? Give an account of various forms of compound leaf.



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223. List the kinds of inflorescence.



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224. What is inflorescence? With the help of labelled diagrams, show the various types of

cymose inflorescence.



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225. Differentiate simple, aggregate and composite fruit.



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226. Make a table showing the three sub-families of Fabaceae. and their example



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227. Where is mother axis drawn in a floral diagram?



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228. Where is ovary situated in the epigynous flower?



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229. A Maize grain is not a seed. Explain.



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230. Give reason:

odd sepal is anterior in

A. Solanaceae

B. Asteraceae

C. Fabaceae

D.

Answer:



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231. explain:

The rhizome of ginger is found underground, but it is not root.



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232. explain reason:

In opuntia stem is flat, leaf-like as

photosynthetic.



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Exercise

1. Define aestivation and placentation?



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2. What do you understand by epipetalous stamen?



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3. Write examples (2 each) of tuber and rhizome.



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4. Which parts in ginger and onion are edible?



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5. Define phyllotaxy and venation.



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6. Justify, flower is a modified shoot.



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7. Draw a labelled diagram of maize grain.



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8. Draw a diagram showing structure of a flower.



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9. Differentiate runner and sucker.



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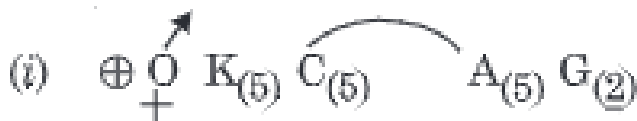
10. Describe ovary of Solanum and Pea.



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11. Given are floral formulae of well known plants.

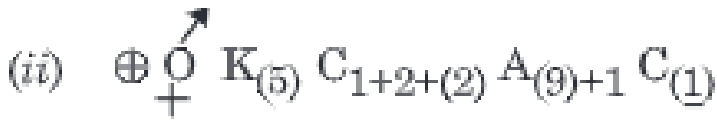
Draw floral diagrams from these floral formulae.



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12. Given are floral formulae of well known plants.

Draw floral diagrams from these floral formulae.



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13. Differentiate between

Bract and Bracteole

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14. Differentiate between

Pedicel and peduncle



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15. Differentiate between

Pollen and pollenium



Watch Video Solution

16. Differentiate epigeal germination and hypogeal germination.



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17. Describe sub-aerial modifications of stem.



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