

### **Types**

1. Name the three types of phenotype observed in plants in snapdragon. 2M\_L2
2. What are the types of Conventional Plant Breeding Methods? 2M\_L9
3. What are the types of mutation? 3M\_L3
4. Compare the various types of Blotting techniques. 3M\_L4
5. What is endosperm? Explain the types. 5M\_L1
6. What are restriction enzymes? Mention their type with role in Biotechnology. 5M\_L4
7. Give an account of various types of parasitism with examples. 5M\_L6

### **Give the examples**

1. Give examples for Helobial endosperm. 2M\_L1
2. Give the names of the scientists who rediscovered Mendelism. 2M\_L2
3. Give the examples for micro propagation performed plants. 2M\_L5
4. Give an example for first law of thermodynamics. 2M\_L7
5. Give four examples of plants cultivated in commercial agroforestry. 2M\_L8

### **Define**

1. Define the term Diplospory. 2M\_L1
2. Define: Double fertilization 2M\_L1
3. Define: perisperm. 2M\_L1
4. Define Cross - pollination. 2M\_L1
5. Define: Genetics. 2M\_L2
6. Define: Crossing over. 2M\_L3
7. Define: Mutation 2M\_L3
8. Define: plasmid 2M\_L4
9. Define: Biosafety. 2M\_L5
10. Define ecology. 2M\_L6
11. Define: Pedology and Pedogenesis. 2M\_L6
12. Define phylloclades and give an example. 2M\_L6
13. Define: Ecosystem 2M\_L7
14. Define Photosynthetically Active Radiation. 2M\_L7
15. Define biogeochemical cycles 2M\_L7
16. Define agro forestry 2M\_L8
17. Define biofertilizers. Write their uses. 2M\_L9
18. Give definitions for organic farming? 2M\_L10
19. Define: Single cell protein (SCP). 3M\_L4
20. Define: Hollard, Chresard, Echard. 3M\_L6

### **Name the**

1. Name the chemicals used in gene transfer. 2M\_L4
2. Name the tools used as genetic engineering. 2M\_L4
3. Name few culture media used for plant tissue culture

technique. 2M\_L5

4. Name some microorganisms used as phosphate mobilizing Bio – fertilizers. 2M\_L9
5. Name the humors that are responsible for the health of human beings. 2M\_L10
6. Name the four major subdisciplines of genetics. 3M\_L2
7. Name the microorganisms used as of SCP. 3M\_L4
8. Name some satellites and their applications regarding environment. 3M\_L8
9. Name some microorganisms used N<sub>2</sub> as fixing Bio –fertilizers. 3M\_L9
10. Mention few physical mutagens. 2M\_L3
11. Mention some semi dwarf wheat breeding varieties. 2M\_L9
12. Mention any two semi dwarf Breeded Rice varieties in India. 2M\_L9

### **Describe**

1. Describe pollinium. 2M\_L1
2. Describe Castor Aruna. 2M\_L3
3. Describe hardening? 2M\_L5
4. Describe the mutual relationship between the fig and wasp and comment on the phenomenon that operates in this relationship. 2M\_L6
5. Describe timber line / Tree line. 2M\_L6
6. Describe negative interactions 2M\_L6
7. Describe energy flow. 2M\_L7
8. Describe the second law of thermodynamics 2M\_L7
9. Describe blue carbon ecosystems 2M\_L7
10. Describe appiko movement. 2M\_L8
11. Describe Mass selection. 2M\_L9
12. Describe Flavr Savr Tomato. 3M\_L4
13. Describe herbicide tolerant – basta. 3M\_L4
14. Describe an invasive weed Eichhornia crassipes. 3M\_L8
15. Describe gamma garden or atomic garden 3M\_L9
16. Describe: NBPGR 3M\_L9
17. Describe about the mature embryo sac. 5M\_L1
18. Describe megasporogenesis. 5M\_L1
19. Describe dominant epistasis with an example. 5M\_L2
20. Describe Golden rice – biofortification. 5M\_L4
21. Describe dispersal of fruit and seeds by animals. 5M\_L6

### **Steps**

1. Mention the steps involved in the process of decomposition. 2M\_L7
2. What are the steps of Hybridization? 2M\_L9
3. Discuss the steps involved in Microsporogenesis. 5M\_L1
4. Give a concise account on steps involved in fertilization of an angiosperm plant. 5M\_L1
5. What are the steps involved in protoplast culture? 5M\_L5
6. What are the steps taken to reduce carbon foot print ? 5M\_L8

### **Write short note**

1. Write short note on Heterostyly. 2M\_L1
2. Write the parts of mature embryo sac. 2M\_L1

3. Write short note on Colchicine. 2M\_L3
4. Write short notes on Sonora - 64. 2M\_L3
5. Write the definitions of Tissue Culture. 2M\_L5
6. Write short note on Intellectual property right (IPR). 2M\_L5
7. Write is about Montreal Protocol. 2M\_L8
8. Write about Kyoto protocol. 2M\_L8
9. Write the slogan of Chipko movement - (5 F"s) ? 2M\_L8
10. Write a note on heterosis or Hybrid vigour 2M\_L9
11. Write short note on Pollen kitt. 3M\_L1
12. Write short notes on approach grafting. 3M\_L1
13. Write the salient features of Sutton and Boveri concept. 3M\_L3
14. Write the importance of Crossing over? 3M\_L3
15. Write the number of chromosomes for the following organisms. 3M\_L3
16. Write the advantages and disadvantages of Bt cotton. 3M\_L4
17. Write the advantages of herbicide tolerant crops. 3M\_L4
18. Write note on Ti – plasmid. 3M\_L4
19. Write the various steps involved in cell suspension culture. 3M\_L5
20. Write the protocol for artificial seed preparation. 3M\_L5
21. Write the significance of food web 3M\_L7
22. Write the importance of biofertilizers. 3M\_L9
23. Write note on role of Azolla as biofertiliser. 3M\_L9
24. Write a note on NORIN 10. 3M\_L9
25. Write the cosmetic uses of Aloe. 3M\_L10

#### **List out the**

1. List out the biotic components of ecosysytem. 2M\_L7
2. List out some Alien invasive invasive plants. 2M\_L8
3. List out the new breeding techniques involved in developing new traits in plant breeding. 2M\_L9
4. List out some important Crops used as green manures. 2M\_L9
5. List out two sub-aerial stem modifications with example. 3M\_L1
6. List out the laboratory facilities of plant tissue culture. 3M\_L5
7. List out the effects of fire to plants. 3M\_L6
8. List out the factors affecting decomposition. 3M\_L7
9. List out any three important Indian Plant Breeders. 3M\_L9
10. List out the Physical and Chemical Mutagens used in Plant breeding. 3M\_L9
11. List out any five morphological adaptations of halophytes. 5M\_L6
12. List out the effects of Ozone depletion. 5M\_L8
13. List out the medicinal uses of any five common medicinal plants. 5M\_L10

#### **Significant**

1. Give brief account on significance of ploidy. 3M\_L3
2. Mention any two significant roles of predation plays in nature. 3M\_L6
3. Name of the food chain which is generally present in all typeof ecosystem. Explain and write their significance. 3M\_L7
4. Significance of Plant Succession - List them. 3M\_L7

7. Explain about chipko movement ? 3M\_L8
8. Explain the best suited type followed by plant breeders at present? 3M\_L9
9. Explain the role of Trichoderma for enhancement of plants. 3M\_L9
10. Explain the role of Beauveria species act as a bio-pesticides. 3M\_L9
11. Explain Nel Jayaraman contribution to rice 3M\_L9
12. Explain the structure of mature anther. 5M\_L1
13. Explain pollination in Salvia (Lever mechanism): 5M\_L1
14. Explain the development of a Dicot embryo. 5M\_L1
15. Explain the law of dominance in monohybrid cross. 5M\_L2
16. Explain with an example how single genes affect multiple traits and alleles the phenotype of an organism. 5M\_L2
17. Explain polygenic inheritance with an example. 5M\_L2
18. Explain about dihybrid cross. 5M\_L2
19. Mitochondrial Inheritance - Explain. 5M\_L2
20. Explain the mechanism of crossing over. 5M\_L3
21. Explain the mechanism of Agarose gel Electrophoresis 5M\_L4
22. Explain the basic concepts involved in plant tissue culture. 5M\_L5
23. Explain the sterilization methods used during the plant tissue culture. 5M\_L5
24. Explain different types of hydrophytes with examples. 5M\_L6
25. Explain types of food chain. 5M\_L7
26. Explain afforestation with Case studies. 5M\_L8

### **What**

1. What is reproduction? 2M\_L1
2. What is layering? 2M\_L1
3. What are clones? 2M\_L1
4. What is Cantharophily ? 2M\_L1
5. What is endothelium? 2M\_L1
6. What is Mellitophily ? 2M\_L1
7. What is microsporogenesis ? 2M\_L1
8. What is stomium ? 2M\_L1
9. What are the layers of anther wall? 2M\_L1
10. What is meant by cryopreservation? 2M\_L1
11. What is obturator ? 2M\_L1
12. What is Anemophily ? 2M\_L1
13. What is Hydrophily ? 2M\_L1
14. What is Ornithophily ? 2M\_L1
15. What is Chieropterophily ? 2M\_L1
16. What is Myrmecophily ? 2M\_L1
17. What is Malacophily ? 2M\_L1
18. What is Phalaenophily ? 2M\_L1
19. What is Psychophily ? 2M\_L1
20. What is homogamy? 2M\_L1
21. What is Incomplete dichogamy? 2M\_L1
22. What is geitonogamy ? 2M\_L1
23. What is Xenogamy ? 2M\_L1
24. What is Herkogamy? 2M\_L1
25. What is bisporic embryo sac ? 2M\_L1

26. What is tetrasporic embryo sac ? 2M\_L1
27. What is meant by true breeding or pure breeding lines / strain? 2M\_L2
28. What are multiple alleles ? 2M\_L2
29. What is meant by cytoplasmic inheritance? 2M\_L2
30. What is lethal allele ? 2M\_L2
31. What are alleles ? 2M\_L2
32. What is Co dominance? 2M\_L2
33. What is test cross? 2M\_L2
34. What is a Atavism ? 2M\_L2
35. What is incomplete dominance ? 2M\_L2
36. What is reciprocal cross 2M\_L2
37. What are comutagens ? Give examples. 2M\_L3
38. What are called linked genes? 2M\_L3
39. What is meant by unlinked genes or syntenic genes? 2M\_L3
40. What are the materials used to grow microorganism like Spirulina? 2M\_L4
41. What are the enzymes you can used to cut terminal end and internal phosphor di ester bond of nucleotide sequence? 2M\_L4
42. What is Genome? 2M\_L4
43. What is Biopharming ? 2M\_L4
44. What is Bioprospecting? 2M\_L4
45. What is Biopiracy? 2M\_L4
46. What is meant by zymology ? 2M\_L4
47. What is Green Fluorescent Protein (GFP) ? 2M\_L4
48. What is Bio-reactor (Fermentor) ? 2M\_L4
49. What is algal fuel ? 2M\_L4
50. What is Sterilization? 2M\_L5
51. What is explant? 2M\_L5
52. What is known as cell suspension culture? 2M\_L5
53. What is somatic embryogenesis? 2M\_L5
54. What is cybrid? 2M\_L5
55. What is PEG? 2M\_L5
56. What is Bioethics? 2M\_L5
57. What is Phytoremediation ? 2M\_L6
58. What is Albedo effect and write their effects? 2M\_L6
59. What is vivipary? Name a plant group which exhibits vivipary. 2M\_L6
60. What is myrmecophily? 2M\_L6
61. What is seed ball? 2M\_L6
62. What is co evolution? 2M\_L6
63. What are called as Epiphytes ? 2M\_L6
64. What is called as Velamen tissue ? 2M\_L6
65. What is Cladode ? 2M\_L6
66. What is called Phyllode? 2M\_L6
67. What is meant by tropophytes ? 2M\_L6
68. What is Food chain? 2M\_L7
69. What is a Food web? 2M\_L7

70. What is homeostasis? 2M\_L7
71. What is meant by Ten percent law? 2M\_L7
72. What are decomposers? 2M\_L7
73. What is called as plant succession ? 2M\_L7
74. What is meant by fragmentation? 2M\_L7
75. What is meant by Catabolism? 2M\_L7
76. What is meant by Mineralisation? 2M\_L7
77. What is meant by Leaching or Eluviation? 2M\_L7
78. What is meant by ecosystem resilience ? 2M\_L7
79. What are known as 3R ? 2M\_L7
80. What is ozone hole? 2M\_L8
81. What is called ozone shield? Write their use. 2M\_L8
82. What is Dobson Unit ? 2M\_L8
83. What are the benefits of ozone shield? 2M\_L8
84. What are greenhouse gases ? 2M\_L8
85. What is meant by greenhouse effect ? 2M\_L8
86. What is global warming? 2M\_L8
87. What is Social forestry? 2M\_L8
88. What is Live fence of fodder trees? 2M\_L8
89. What is Protein Bank ? 2M\_L8
90. What is carbon sink ? 2M\_L8
91. What is Carbon Foot Print ? 2M\_L8
92. What is invasive species? 2M\_L8
93. What is Biomonitoring ? 2M\_L8
94. What is remote sensing ? 2M\_L8
95. What is Geographic Information System (GIS) ? 2M\_L8
96. What is Biodiversity Impact Assessment (BIA) ? 2M\_L8
97. What is endemic species ? 2M\_L8
98. What is meant by bio-pesticides ? 2M\_L9
99. What is Green in-situ manuring ? Give Example. 2M\_L9
100. What is plant introduction? 2M\_L9
101. What is Pure line selection ? 2M\_L9
102. What are the demerits of pure line selection ? 2M\_L9
103. What is meant by polyploids ? 2M\_L9
104. What is mutation ? 2M\_L9
105. What is parbharni kranthi? 2M\_L9
106. What is acclimatization? 2M\_L9
107. What is pseudo cereal? Give an example. 2M\_L10
108. What is called as Vulcanization? 2M\_L10
109. What is epihydrophily and hypohydrophily ? 3M\_L1
110. What is back cross? 3M\_L2
111. What are the reasons for Mendel's successes in his breeding experiment? 3M\_L2
112. What are chemical mutagenes ? Give example. 3M\_L3
113. What is ecological hierarchy? Name the levels of ecological hierarchy. 3M\_L6
114. What are ecological equivalents? Give one example. 3M\_L6
115. What is thermal stratification? Mention their types. 3M\_L6



116. What is acid rain? mention its effects. 3M\_L6
117. What is called predation? 3M\_L6
118. What is Competition? List out their types. 3M\_L6
119. What is known as Carbon cycle? 3M\_L7
120. What are called as plant indicators ? Given some examples. 3M\_L8
121. What are the different types of hybridization? 3M\_L9
122. What is an organic agriculture? 3M\_L9
123. What is meant by Arbuscular mycorrhizae ? 3M\_L9
124. What is Green leaf manuring ? Give example. 3M\_L9
125. What are millets? What are its types? Give example for each type. 3M\_L10
126. What is Capsaicin? Write short notes on it. 3M\_L10
127. What is incomplete dominance ? In 4 O" clock plant shows incomplete dominance for flower colour. 5M\_L2
128. What is meant by structural changes in chromosome Classify them. 5M\_L3
129. What is bioremediation? Give some examples of bioremediation. 5M\_L4
130. What is soil profile? Explain the characters of different soil horizons. 5M\_L6
131. What are the effects of deforestation and benefits of agro forestry? 5M\_L8
132. What is TSM? How does it classified and what does it focuses on? 5M\_L10
133. What are psychoactive drugs? Add a note Marijuana and Opium. 5M\_L10
134. What are the King and Queen of spices? Explain about them and their uses. 5M\_L10

### **Differentiate**

1. What is endospermic or ex – albuminous seeds? 2M\_L1
2. What is the difference between missense and nonsense mutation? 2M\_L3
3. Differentiate Grafting and Layering. 3M\_L1
4. Distinguish mound layering and air layering. 3M\_L1
5. Distinguish tenuinucellate and crassinucellate ovules. 3M\_L1
6. Differentiate secretory and invasive tapetum. 3M\_L1
7. Differentiate Intine and Exine. 3M\_L1
8. How does linkage differ from crossing over ? 3M\_L3
9. Differentiate between upstream & downstream process. 3M\_L4
10. Differentiate somaclonal variation from Gametoclonal variations. 3M\_L5
11. Distinguish habitat and niche. 3M\_L6
12. How does anemochory differ from zoochory? 3M\_L6
13. Differentiate between Lotic and Lentic 3M\_L7
14. Differences between primary and secondary succession. 3M\_L7
15. Differentiate primary introduction from secondary introduction. 3M\_L9

16. Differentiate autopolyploidy from allopolyploidy. 3M\_L9
17. Differentiate bio-medicines and botanical medicines. 3M\_L10
18. Differentiate the structure of Dicot and Monocot seed. 5M\_L1
19. Tabulate post fertilization changes in a flower. 5M\_L1
20. Differentiate incomplete dominance and codominance. 5M\_L2
21. Differentiate continuous variation with discontinuous variation. 5M\_L2
22. Tabulate the biological interaction of biotic factors. 5M\_L6

1. Write the origin and area of cultivation of green gram and red gram. 3M\_L10
2. Write the economic importance of rice. 3M\_L10
3. Give short notes on types of ovules. 5M\_L1
4. Write the benefits and risk of Genetically Modified Foods. 5M\_L4
5. Write the morphological adaptations of epiphytes 5M\_L6

### **Functions**

1. Write the functions of endosperm. 2M\_L1
2. List out the functions of tapetum. 3M\_L1
3. What is gene mapping? Write its uses. 3M\_L3
4. Enumerate the uses of biodiversity impact assessment (BIA). 3M\_L8
5. Enumerate the uses of turmeric. 3M\_L10
6. Write the uses of nuts you have studied. 3M\_L10
7. List out the uses of Palmyra. 3 M\_L10
8. Mention the application of Biotechnology. 5M\_L4
9. Write the applications of Plant tissue culture 5M\_L5
10. Write few advantages of artificial seeds. 5M\_L5
11. What are the advantages of seed dispersal? 5M\_L6

### **Draw**

1. Draw a structure of pollengrains and label its parts. 2M\_L1
2. Draw a structure of embryo sac and label its parts 3M\_L1
3. Draw the diagram of different types of aneuploidy. 3M\_L3
4. Draw the blotting apparatus and labelled its parts. 3M\_L4
5. Draw diagram of an T.S. of Nerium leaf and label the parts. 3M\_L6
6. Draw the flow chart of Relative contribution of green house gases 3M\_L8
7. With a suitable diagram explain the structure of an ovule. 5M\_L1
8. Explain the mature anther wall. Draw the anther lobe and label the wall layers. 5M\_L1
9. Draw the flow chart of ploidy 5M\_L3

### **Reasoning**

- "Tissue culture is the best method for propagating rare and endangered plant species"- Discuss. 2M\_L1
2. Why does the zygote divide only after the division of Primary endosperm cell? 2M\_L1
  3. How do dioscorea reproduce vegetatively ? 2M\_L1



4. Name the cell which divides to form male nuclei. 2M\_L1
5. How does pollination occur in bee orchid? 2M\_L1
6. Tapetum is dual in origin – Justify your answer 2M\_L1
7. What do you know about pollen robbers? 2M\_L1
8. Why is Mendel called as father of genetics? 2M\_L2
9. Gametes are never hybrid – Justify. 2M\_L2
10. "Green algae are not likely to be found in the deepest strata of the ocean". Give at least one reason. 2M\_L6
11. The organic horizon is generally absent from agricultural soils. Why is an organic horizon generally absent in desert soils? 2M\_L6
12. Soil formation can be initiated by biological organisms. Explain how? 2M\_L6
13. Sandy soil is not suitable for cultivation. Explain why? 2M\_L6
14. Lichen is considered as a good example of obligate mutualism. Explain. 2M\_L6
15. What is mutualism? Mention any two examples where the organisms involved are commercially exploited in modern agriculture. 2M\_L6
16. List any two adaptive features evolved in parasites enabling them to live successfully on their host? 2M\_L6
17. How does an orchid ophrys ensure its pollination by bees? 2M\_L6
18. Water is very essential for life. Write any three features for plants which enable them to survive in water scarce environment. 2M\_L6
19. Why do submerged plants receive weak illumination than exposed floating plants in a lake? 2M\_L6
20. How is rhytidome act as the structural defence by plants against fire? 2M\_L6
21. Which of the plants are called indicators of fire? 2M\_L6
22. Why Drosera and Nepenthes plants consume insects? 2M\_L6
23. The productivity of profundal zone will be low. Why? 2M\_L7
24. Pyramid of energy is always upright. Give reasons 2M\_L7
25. What will happen if all producers are removed from ecosystem? 2M\_L7
26. Why is Pyramid of number in Parasite ecosystems always inverted? 2M\_L7
27. If you imported fruit like kiwi, indirectly it increase carbon foot print. How? 2M\_L8
28. Mention the main objectives of green manuring 2M\_L9
29. Why is Dr. M.S. Swaminathan called as Father of green revolution in India? 2M\_L9
30. A person got irritation while applying chemical dye. What would be your suggestion for alternative? 2M\_L10

**Five Marks**

- 1 Give the characteristic features of Anemophilous plants. 2022 Aug
- 2 Explain the incomplete dominance with example. 2022 Aug
- 3 Explain the food web with an example. Give its significance. 2022 Aug

- 4 What are Artificial Seeds ? Give the advantages of Artificial Seeds. 2022 Aug
- 5 Give a detailed account on parthenocarpy, add a note on its significance. 2022 May
- 6 Differentiate incomplete dominance and co-dominance. 2022 May
- 7 Write the applications of plant tissue culture. 2022 May
- 8 What are the King and Queen of spices ? Write their uses. 2022 May
- 9 Discuss the steps involved in Microsporogenesis. 2021 Sep
- 10 Describe dominant epistasis with an example. 2021 Sep
- 11 Explain the basic concepts involved in plant tissue culture. 2021 Sep
- 12 Explain the types of succession. 2021 Sep
- 13 Explain Intergenic Interaction with an example. 2020 Oct
- 14 List out any five applications of Biotechnology. 2020 Oct
- 15 Water is essential for life. State the reason. Write any four features for plants which enable them to survive in water scarcity environment. 2020 Oct
- 16 (i) Write the botanical name of State Tree of Tamil Nadu.  
(ii) From where it is originated ?  
(iii) Write its three uses. 2020 Oct
- 17 Explain the different mode of entry of pollen tube into the ovule. 2020 Mar
- 18 What is gene mapping and write its uses. 2020 Mar
- 19 How to protect the ecosystem ? 2020 Mar
- 20 Ramu and Somu are farmers. Ramu cultivated the crops by self fertilization method. Somu cultivated the crops from mixed population.  
(i) Who will get new variety ?  
(ii) Write the advantages and disadvantages of their selection

**WITH REGARDS,  
SS PRITHVI  
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