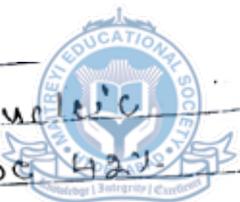


1. What are apoplast and symplast?
2. What are porins? What role do they play in diffusion?
3. Does transpiration occur at night? Give an example.
4. How does ABA bring about the closure of the stomata under water stress conditions?
5. Define hydroponics?
6. Name any 2 essential elements and the deficiency diseases caused by them?
7. Name two elements whose symptoms of deficiency first appear in younger leaves?
8. Name the essential mineral elements that play an important role in photolysis of water?
9. What is meant by feedback inhibition?
10. How are prosthetic groups different from co-factors?
11. Define Michaelis Constant?
12. Distinguish between action spectrum and absorption spectrum?
13. Where does the photolysis of water occur? What is its significance?
14. What is meant by amphibolic pathway?
15. What is the specific role of F_0 and F_1 particles in respiration?
16. What is meant by blotting? Which hormone causes blotting?
17. Which of the PGR is called a stress hormone. Why?
18. What is plasmid? What is its significance?
19. What are pleomorphic bacteria? Give an example.
20. What is ICTV? How are viruses named?
21. What is the shape of T4 phage? What is its genetic material?



22. mention the differences between virulent and temperate phages?
23. Define lysis and burst size with reference to viruses and their effects on host cells?
24. What is the genotype of wrinkled phenotype of pea seed?
25. What will be the phenotypic ratio in the offsprings obtained from the following crosses?
 - a. $Aa \times aa$ (b) $AA \times aa$ c. $Aa \times Aa$ d. $Aa \times AA$
26. What is the function of DNA polymerase?
27. What are the components of a nucleotide?
28. Given below is the sequence of a coding strand of DNA in a transcription unit?
 - a. Its complementary strand
 - b. The mRNA.
29. Name any 3 viruses which have RNA as the genetic material?
30. What are the components of a transcription unit?
31. What is the difference between exons and introns?
32. What is meant by capping and tailing?
33. What is meant by point mutation? Give example?
34. What is the function of the codon AUG?
35. Define stop codon? Write the codons?
36. Write any 2 differences between DNA and RNA.
37. In a typical DNA molecule, the proportion of Thymine 30% of the N-base. Find out the percentage of other N-bases?



38. The proportion of nucleotides in a given nucleic acids are - Adenine 18%, Guanine 30%, Cytosine 42% and Uracil 10%. Name the nucleic acid and mention the number of strands in it?

39. What is EcoRI? How does it function?

40. What are molecular scissors? Where are they obtained from?

41. Name any 2 artificially restructured plasmids?

42. What are cloning vectors? Give an example?

43. What is recombinant DNA?

44. What is palindromic sequence?

45. What is the full form of PCR? How is it useful in biotechnology?

46. What is down-stream processing?

47. How does one visualize DNA on an agar gel?

48. How can you differentiate between exonucleases and endonucleases?

49. What is GEAC and what are its objectives?

50. Can a disease be detected before its symptoms appear? Explain the principle involved?

51. Give one example for each of transgenic plants which are suitable for food processing and those with improved nutritional quality?

52. Name two semi dwarf varieties of rice developed in India?

53. What is meant by germ plasma collection?

54. What is meant by biofortification?

55. Which part of the

56. Which part of the plant is best suited for making virus-free plants and why?

57. Why does Swiss cheese have big holes. Name the bacteria responsible for it?

58. What are fermenters?

59. What is Nucleopolybacterovirus. Is being used for now a days?

60. Name any 2 genetically modified crops?

61. Name an immunosuppressive agent? From where it is obtained?

62. Name any 2 industrially important enzymes?

Short Answer Type Questions:

1. How does ascent of sap occur in tall trees?

2. Write short notes on facilitated diffusion?

3. Explain the steps involved in the formation of root nodule?

4. Explain about enzyme inhibitors?

5. Explain the mechanism of enzyme action?

6. Draw a neat labelled diagram of chloroplast?

7. Write about 2 ATP yielding reactions of glycolysis?

8. Write a note on agricultural applications of auxins and gibberellins?

9. Explain the conjugation in bacteria?

10. Explain the structure of TMV.

11. Mention the advantages of selecting pea plant by Mendel?

12. Explain the Co-dominance with examples?

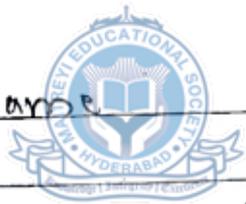
13. Explain the incomplete dominance with example?

14. How many types of RNA polymerases exist in cells?

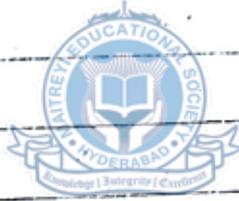
Write their names and functions.

15. List out the beneficial aspects of transgenic plants?

16. Give a brief account of Bt-cotton?



17. What are some bio-safety issues concerned with genetically modified crops?



Long Answer Type Questions.

- ① Explain Calvin Cycle.
- ② Explain the reactions of Krebs Cycle.
- ③ Give an account of glycolysis. Where does it occur? What are the end products? Trace the fate of these products in both aerobic and anaerobic respiration.
- ④ Explain briefly the various processes of recombinant DNA technology.
- ⑤ Give a brief account of the tools of recombinant DNA technology.

X — X —