

Senior Inter BOTANY Model Papers

BOTANY, PAPER - II

(English Version)

Time: 3 Hours

Max. Marks: 60

SECTION – A

Note: Answer all questions. Each answer may be limited to 5 lines.

10 × 2 = 20

1. Which element is regarded as 17th essential element? Name a disease caused by its deficiency.
2. What is meant by "feedback" inhibition?
3. What is the shape of T4 phage? What is its genetic material?
4. 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) $Aa \times AA$
Note: Gene "A" is dominant over gene "a"
5. Distinguish between heterochromatin and euchromatin. Which of the two is transcriptionally active?
6. Given below is the sequence of coding strand of DNA in a transcription unit.
5'AATGCAGCTATTAGG-3'
Write the sequence of
a) Its complementary strand.
b) The mRNA.
7. How can you differentiate between exonucleases and endonucleases?
8. Name the nematode that infects the roots of tobacco plants. Name the strategy adopted to prevent this infestation.
9. Give two examples of fungi used in SCP production.
10. Why does "Swiss cheese" have big holes? Name the bacteria responsible for it.

Section - B

Note: Answer any six questions. Each answer may be limited to 20 lines.

6 × 4 = 24

11. "Transpiration is a necessary evil". Explain.
12. Explain the steps involved in the formation of root nodule.
13. Tabulate any eight differences between C3 and C4 plants/cycles.

14. Write the physiological responses of gibberellins in plants.
15. Explain the conjugation in bacteria.
16. Explain the Incomplete dominance with an example.
17. How many types of RNA polymerases exist in cells? Write their names and functions.
18. List out the beneficial aspects of transgenic plants.

Section - C

Note: Answer any two questions. Each answer may be limited to 60 lines.

2 × 8 = 16

19. 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.
20. Give a brief account of the tools of recombinant DNA technology.
21. Describe the tissue culture technique and what are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes?