

Sr. Inter Botany Model Paper

Time : 3 Hours]

[Max. Marks : 60

Note : Read the following instructions carefully :

- (i) Answer **all** the questions of Section –A. Answer any six questions out of **eight** in Section –B and answer any **two** questions out of **three** in Section-C.
- (ii) In Section-A, questions from Sl. Nos. **1** to **10** are “ Very Short Answer Type”. Each question carries **two** marks. Every answer may be limited to **5** lines. Answer all these questions at one place in the same order.
- (iii) In Section-B, questions from Sl. Nos. **11** to **18** are of “Short Answer Type”. Each question carries **four** marks. Every answer may be limited to **20** lines.
- (iv) In Section –C, questions from Sl. Nos. **19** to **21** are of “Long Answer Type”. Each question carries **eight** marks. Every answer may be limited to **60** lines.
- (v) Draw labeled diagrams, wherever necessary for questions in Section-B and Section-C.

SECTION –A

10 x 2 = 20

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

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 x aa b) AA x aa c) Aa x Aa d) Aa x 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’A A T G C A G C T A T T A G G-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

6 x 4 = 24

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

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

2 x 8 = 16

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

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?