

BOTANY – SECOND YEAR**(English version)****MODEL QUESTION PAPER****(For the Academic year 2021 – 2022 only)****Time : 3 Hours****Max. Marks : 60****NOTE:** This question paper consists of three sections A, B and C

SECTION – A**Very Short Answer Type Questions:****(i) Answer Any Ten of the following Questions:****(ii) Each question carries TWO marks****10×2 = 20 M**

1. Who proposed 'Lock and Key hypothesis' and 'Induced fit hypothesis'?
2. Mention the components of ATPase enzyme. What is their location? Which part of the enzyme shows conformational change?
3. What is apical dominance? Name the growth hormone that causes it.
4. Explain the terms phenotype and genotype.
5. What is the cross between the F1 progeny and the homozygous recessive parent called? How is it useful?
6. Define true breeding. Mention its significance.
7. In a typical DNA molecule, the proportion of Thymine is 30% of the N bases. Find out the percentages of other N bases.
8. What is the difference between the template strand and a coding strand in a DNA molecule?
9. What is the function of the codon-AUG?
10. What are the components of a nucleotide?
11. What is down-stream processing?
12. Can a disease be detected before its symptoms appear? Explain the principle involved.
13. What are fermentors?
14. Name the scientists who were credited for showing the role of penicillin as an antibiotic.
15. Why does 'Swiss cheese' have big holes. Name the bacteria responsible for it.

SECTION – B

Short Answer Type Questions:

(i) Answer Any Six of the following Questions:

(ii) Each question carries FOUR marks.

6 × 4 = 24 M

16. Explain different types of cofactors.
17. Tabulate any eight differences between and plants / cycles.
18. Write the physiological responses of gibberellins in plants.
19. Mention the advantages of selecting pea plant for experiment by Mendel.
20. Explain the Incomplete dominance with example.
21. Define Law of Segregation and Law of Independent Assortment.
22. Define and design a test-cross.
23. Write short notes on restriction enzymes.
24. Give a brief account of Bt cotton
25. Give a brief account of Pest resistant plants.
26. Define transformation in Griffith's experiment. Discuss how it helps in the identification of DNA as genetic material.
27. Write the important features of Genetic code?
28. Draw the schematic / diagrammatic presentation of the lac operon.
29. What are the differences between DNA and RNA.

SECTION – C

Long Answer Type Questions:

(i) Answer Any Two of the following Questions:

(ii) Each question carries EIGHT marks

2 × 8 = 16 M

30. Explain Calvin cycle.
31. Explain the reactions of glycolysis.
32. Explain briefly the various tools of recombinant DNA technology.
33. Write brief essay on microbes in sewage treatments?