

Reg. No

Name

M. Sc DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 2 : BOTANY
COURSE : 16P2BOTT08 : GENETICS AND BIOCHEMISTRY
(For Regular - 2019 Admission & Supplementary 2018/2017/2016 Admissions)

Time : Three Hours

Max. Marks: 75

Section A

Answer any 8 (2 marks each)

1. Explain sex determination in honey bees.
2. What is Coupling and Repulsion?
3. What are threshold traits?
4. What are the major assumptions of H-W principle?
5. Discuss founder effect.
6. What are the features of a good buffer?
7. What is meant by calibration of pH meter?
8. What are Nonstandard amino acids? Give example.
9. What is torsion angle?
10. What are the models explaining ES complex formation?
11. Differentiate between cofactors and coenzymes.
12. How does the salvage pathway economize intracellular energy expenditure?

(2 x 8 = 16)

Section B

Answer any 7 (5 marks each)

13. With suitable examples, explain the environmental sex determination mechanism.
14. Explain Creighton and McClintock experiment in maize. What are the major findings?
15. Provide the evidences for linkage and crossing over.
16. Explain mutation – selection balance.
17. How can you differentiate strong acids and strong bases from weak acids and weak bases?
18. What are Glycoproteins? Explain their biological significance. Give examples.
19. Animals are resistant to Glyphosate. Why?
20. Explain the Quaternary structure of proteins. Give examples.
21. Explain how newly identified and isolated enzyme will be named?
22. Briefly explain the biosynthesis and functions of phenolic compounds.

(5 x 7 = 35)

Section C**Answer any 2 (12 marks each)**

23. In a Mendelian population, the frequencies of alleles 'A' and 'a' are 'p' and 'q', respectively. If the evolutionary forces are not acting, prove that the population is in H-W equilibrium.

OR

24. With a suitable example, elaborate the recombination mapping with three-point testcross.
25. Explain the IUB system of enzyme classification and naming.

OR

26. Explain the major precursors and steps involved in the biosynthesis of amino acids?

(12 x 2 = 24)