PART III

XII STANDARD – BIO-BOTANY

Time allowed : 3.00 Hrs **Maximum Marks : 75**

(Bio-Botany 1½Hrs and Bio-Zoology 1 ½Hrs)

SECTION - A

14 x 1 = 14

Note : 1. Answer **all** the questions.
2. Choose and write the correct option.
3. Each question carries **one mark.**

1. The bionomial system of nomenclature was introduced by
   a. Carolus Linnaeus b. Gaspard Bauhin
   c. Robert Brown d. Dalton Hooker

2. Plants having flowers with conical thalamus are placed in
   a. disciflorae b. calyciflorae
   c. thalamiflorae d. inferae

3. Anthers are reniform in
   a. Malvaceae b. Solanaceae
   c. Euphorbiaceae d. Liliaceae

4. The meristem that is parallel to longitudinal axis of the plant is
   a. procambium b. intercalary meristem
   c. phellogen d. apical meristem

5. In maize, the conjunctive tissue is made up of
   a. parenchyma b. collenchyma
   c. sclerenchyma d. aerenchyma

6. L-shaped eukaryotic chromosome is named as
   a. telocentric b. acrocentric
   c. sub-metacentric d. metacentric

7. Dihybrid test cross coupling ratio is
   a. 1:1:1:1 b. 7:1:1:7
   c. 1:7:7:1 d. 7:1:7:1

8. It is used to join the two DNA fragments
   a. Restriction enzyme b. Ligase
   c. Polymerase d. Topoisomerase

9. The alga used for single cell protein production is
   a. *Pseudomonas* b. *Alkaligenes*
   c. *Spirulina* d. *Volvoriella*

10. An example for C_4 plant is
    a. Maize
    b. *Tribulus*
    c. *Amaranthus*
    d. Sugarcane

11. Dickens discovered
    a. pentose phosphate pathway
    b. glycolysis
    c. amphibolic pathway
    d. C_2 cycle

12. The hormone synthesised in large amounts by tissues undergoing ageing is
    a. auxin
    b. gibberellin
    c. cytokinin
    d. ethylene

13. *Pyricularia oryzae* causes
    a. blase disease of rice
    b. tikka disease of groundnut
    c. citrus canker
    d. tungro disease of rice

14. Which one of the following is an antimalarial drug?
    a. Ephedrine
    b. Digoxin
    c. Quinine
    c. Morphine

Section B

7 x 3 = 21

Note : 1. Answer any **7** questions.

2. Each question carries **3 marks.**

15. State any three medicinally useful plants of Solanaceae and write of their uses.

16. Draw the floral diagram of *Allium cepa* and write the floral formula.

17. What is bicollateral vascular bundle? Give example.

18. Draw the structure of aerenchyma. Label the parts.

19. Draw the structure of chromosome. Label the parts.

20. What three sentences about splicing?

21. Differentiate cyclic and non-cycle photophosphorylation.

22. In Krebs cycle isocitric acid is converted to α-ketoglutaric acid. The farmer is 6 carbon compound and the latter is 5 carbon compound. How does it take place?

23. Is it possible to shorten the time of crop maturity? Support your answer.

24. What is bio-war?

Section C

4 x 5 = 20

Note : 1. Answer any **4** questions.

2. Answer to **25th question is compulsory** and this question should not be left as option.

3. Draw diagrams wherever necessary.

4. Each question carries **5 marks.**

25. State the importance of herbarium.

26. What is meristem? Explain different types of meristems.

27. Describe the structure of tRNA.

28. Explain the steps involved in gene transfer in plants.

29. Bring out the physiological effects of auxin.

30. Explain cyclic photophosphorylation.

31. Write the benefits of bio-fertilizers.

Section D

2 x 10 = 20

Note : 1. Answer any **2** questions.

2. Draw diagrams wherever necessary.

3. Each question carries **10 marks.**

32. Describe *Hibiscus rosa-sinensis* in technical terms.

33. a. Give an account on epidermal tissue system in plants. (5 Marks)

b. Bring out anatomical differences between dicot and monoct stems. (5 Marks)

34. Explain as to how protoplasmic fusion can bring about somatic hybridization in plants?

35. What is glycolysis? Explain the steps involved in it.