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Part III – BOTANY

(English Version)

Time Allowed : 3 Hours]

[Maximum Marks : 150

SECTION - A

Note : i) Answer *all* questions.

ii) Choose and write the correct answer.

iii) Each question carries *one* mark.

30 × 1 = 30

1. One of the sepals is brightly coloured in
 - a) Gardenia
 - b) Ixora
 - c) Morinda
 - d) Mussaenda.
2. Solanaceae is placed under the order
 - a) Malvales
 - b) Polemoniales
 - c) Unisexuales
 - d) Ranales.
3. In the petiole of banana and canna the star like parenchyma cells are called
 - a) Stellate parenchyma
 - b) Collenchyma
 - c) Aerenchyma
 - d) Chlorenchyma.
4. Polyarch condition is found in
 - a) monocot leaf
 - b) dicot leaf
 - c) dicot stem
 - d) monocot root.

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17. *Aeschynomene aspera* is a

- a) Xerophyte
- b) Mesophyte
- c) Hydrophyte
- d) Epiphyte.

18. Binomial of black gram is

- a) *Vigna unguiculata*
- b) *Vigna mungo*
- c) *Cajanus cajan*
- d) *Lab-lab purpureus*.

19. A single seeded dry indehiscent fruit developing from inferior ovary is

- a) Cypsela
- b) Capsule
- c) Legume
- d) Drupe.

20. *Vernonia arborea* is a

- a) herb
- b) shrub
- c) tree
- d) twiner.

21. Passage cells are found in the endodermis of

- a) Dicot root
- b) Dicot stem
- c) Monocot stem
- d) Dicot leaf.

22. The lens-shaped openings in the cork tissue is

- a) Phellem
- b) Lenticels
- c) Phellogen
- d) Stomata.

23. The term 'chromosome' was first introduced by

- a) Flemming
- b) Balbiani
- c) Bridges
- d) Waldeyer.

SECTION - B

Note : i) Answer any *fifteen* questions.

ii) Each question carries *three* marks.

15 × 3 = 45

31. Define tautonym. Give example.
32. Write the binomials of three fibre plants of Malvaceae.
33. Define Herbarium.
34. Write the floral formula of male and female flowers of *Cocos nucifera*.
35. What is rhizodermis ?
36. What is Polytene chromosome ?
37. What is genetic code ?
38. What is crossing over ?
39. What is the importance of *Escherichia coli* in biotechnology ?
40. Why is SCP not popular for human consumption ?
41. Define energy of activation.
42. What is photolysis of water ?
43. Define chemosynthesis.
44. Write the overall reaction of Glycolysis.
45. What is oxidative phosphorylation ?
46. What is respiratory quotient ?
47. What are Phytohormones ?

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- 48 . What is Richmond Lang effect ?
49. What is humulin ?
- 50 . Write three economic importances of groundnut.

SECTION - C

Note : i) Answer any *seven* questions.

ii) Answer to Question No. **54** is compulsory and this question should not be left as option.

iii) Each question carries *five* marks.

iv) Draw diagrams wherever necessary.

7 × 5 = 35

51. Describe the male flower and female flower of *Ricinus communis*.
52. Write the economic importance of Rubiaceae.
53. Write a note on Xylem vessel.
54. Draw the T. S. of *Helianthus* leaf and label the parts.
55. Write the functions of the epidermal tissue system.
56. Describe the structure of chromosome.
57. Draw the structure of *t*-RNA and label the parts.
58. What is the role of *Agrobacterium* for gene transfer in plants ?
59. Name the five genetically engineered products. Mention their functions.
60. Write about the physiological effects of Ethylene.
61. Describe Ganong's respiroscope experiment.
62. Add a note on Plant Introduction.

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SECTION - D

Note : i) Answer any *four* questions.

ii) Each question carries *ten* marks.

iii) Draw diagrams wherever necessary. 4 × 10 = 40

63. Describe Bentham and Hooker's classification with outline flow-chart.

64. Describe *Hibiscus rosasinensis* in technical terms.

65. a) Describe the vascular bundle of Monocot stem. 5

b) Write a note on Annual rings. 5

66. Write an essay on Polyploidy. Add a note on its significance.

67. What are the basic techniques of plant tissue culture ?

68. Describe cyclic and non-cyclic photophosphorylation.

69. Draw Krebs cycle without explanation.

70. Write a note on Biopiracy.
