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**Part III — BOTANY**

( New Syllabus )

( 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.

$30 \times 1 = 30$

1. Solanaceae is placed under the order

- a) Malvales
- b) Polemoniales
- c) Unisexuales
- d) Ranales.

2. An example of cladode is

- a) *Phyllanthus emblica*
- b) *Ricinus communis*
- c) *Jatropha curcus*
- d) *Euphorbia tirucalli*.

3. The simple tissue generally present in all organs of the plant is

- a) xylem
- b) phloem
- c) parenchyma
- d) collenchyma.

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**SECTION - B**

Note : i) Answer any *fifteen* questions.

ii) Each question carries *three* marks.

15 × 3 = 45

31. Define tautonym. Give an example.
32. What is pulvinus ? In which family is it present ?
33. What is pyrethrum ?
34. Write the systematic position of Liliaceae.
35. What are called passage cells ?
36. What is a genetic map ?
37. What is a lethal mutation ? Give an example.
38. List out three differences between DNA and RNA.
39. Give the binomials of three dicot transgenic plants.
40. Mention three media of plant tissue culture.
41. Define isoenzyme.
42. Write the overall equation of photosynthesis.
43. What is chemosynthesis ?
44. What is Glycolysis ?
45. Define respiratory quotient.
46. What is Richmond-Lang effect ?

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47. Define bolting.
48. What is devernalization ?
49. Bring out any three economic importances of rice.
50. What is humulin ?

### SECTION - C

*Note :* i) Answer any seven questions including Question No. 51 which is compulsory.

ii) Each question carries *five* marks.

iii) Draw diagrams wherever necessary.

7 × 5 = 35

51. Bring out the significance of herbarium.
52. Write the economic importance of Arecaceae.
53. Explain different types of meristems based on their positions.
54. Draw the transverse section of dicot root and label the parts.
55. Write a short note on annual rings.
56. Draw the structure of t RNA and label the parts.
57. Write any five significances of mutation.
58. Give an account of five most important events of recombinant DNA technology.
59. What are the outcomes of application of plant tissue culture ?
60. Bring out the characteristics of enzymes.
61. Write a short note on insectivorous plant.
62. Bring out the economic importance of teak.

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**SECTION - D**

*Note :* i) Answer any *four* questions.

ii) Each question carries *ten* marks.

iii) Draw diagrams wherever necessary.  $4 \times 10 = 40$

63. Write the outline of Bentham and Hooker's classification of plants and explain.
  64. Describe *Ixora coccinea* in botanical terms.
  65. Describe the secondary growth in dicot stem.
  66. Write an account on the structure of DNA.
  67. What will be the role of Single Cell Protein (SCP) to safeguard against human protein deficiency for the future ?
  68. Draw Calvin cycle without explanation.
  69. Write an account on photoperiodism and vernalization.
  70. Explain the role of biofertilizers to improve the soil fertility.
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