B

Register Number | | | | | | |

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.

5. Innermost layer of the cortex is

a) pericycle b) endodermis

c) rhizodermis d) epidermis.

6. The unit of genetic map is

a) codon b) lux

c) micrometre d) Morgan.

7. The two protoplasts are fused with a fusogen called

a) Polyethane glycol b) Polyethylene glycol

c) Sorbitol d) Mannitol.

8. The technique employed to get rid of the microbes in culture medium is called

a) Vernalization b) Hardening

c) Sterilization d) Inoculation.

9. Restriction enzymes are synthesized by

a) bacteria only b) algae only

c) eukaryotic cells only d) virus only.

10. The term 'enzyme' was coined by

a) Kuhne b) Fischer

c) Buchner d) Koshland.

11. Complete oxidation of one molecule of glucose yields

a) 38 ATP b) 36 ATP

c) 35 ATP d) 32 ATP.

12. During Calvin cycle the acceptor molecule of CO_2 is

a) PEP b) RUBP

c) R5P d) PGA.

13. Vanaspati and soaps are prepared from

a) bran wax b) bran oil

c) sake d) humulin.

14. Tikka disease of groundnut is caused by

a) Pyricularia oryzae

b) Cercospora personata

c) Xanthomonas citrii

d) Tungro virus.

15. The powder of the seeds used instead of coffee is

a) Cola nitida b) Ilex paraguriensis

c) Catharanthus roseus d) Pentadiplandra brazzeana.

16. The term 'Biosystematics' was coined by

a) Carolus Linnaeus

b) Gaspard Bauhin

c) Engler and Prantl

d) Camp and Gily.

17. Aeschynomene aspera is a

a) Xerophyte b) Mesophyte

c) Hydrophyte d) Epiphyte.

18. Binomial of black gram is

a) Vigna ungiculata 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.

24. Recombination of chromosomes takes place in this stage of prophase I of Meiosis.

a) Leptotene b) Zygotene

c) Pachytene d) Diakinesis.

25. Biochemical mutation is reported in

a) Sorghum b) Cicer

c) Neurospora d) Drosophila.

26. The protein component of the Holoenzyme is

a) coenzyme b) apoenzyme

c) peptide enzyme d) lipid enzyme.

27. The essential component for the formation of chlorophyll is

a) Mg b) Mn

c) Fe d) Cl.

28. An example for insectivorus plant is

a) Viscum b) Monotropa

c) Vanda d) Drosera.

29. The first stable product formed in C_3 cycle is

a) Oxaloacetic acid b) Aspartic acid

c) Phosphoglyceric acid d) Malic acid.

30. Glucose is phosphorylated to glucose-6-phosphate by the enzyme

a) aldolase b) kinase

c) mutase d) hexokinase.

SECTION – B

Note : i) Answer any *fifteen* questions.

ii) Each question carries *three* marks. $15 \times 3 = 45$

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 ?

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. $7 \times 5 = 35$

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.

SECTION – D

Note : i) Answer any *four* questions.

ii) Each question carries *ten* marks.

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

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.