1085

Register Number

Part III — BIO-CHEMISTRY

(English Version)

Time Allowed : 3 Hours] [Maximum Marks : 150

Note : i) Answer *all* the questions from **Part – I.**

ii) Answer any *fifteen* questions from **Part– II.**

iii) Answer Question No. **71** in **Section – A** and any *five* questions in **Section – B** from **Part – III.**

iv) Answer any *four* questions from **Part – IV.**

v) Draw diagrams and write equations wherever necessary.

PART – I

Note : Answer *all* the questions. 50 × 1 = 50

A. Choose and write the correct answers in the answer-book :

1. The term 'cell membrane' was coined by

a) C. J. Nageli and Crammer

b) Singer and Nicolson

c) Robertson

d) Gorter and Grendel.

[Turn over

2. The major buffer system of RBCs is

a) Phosphate buffer b) Haemoglobin buffer

c) Carbonate buffer d) Acetate buffer.

3. Pepsin is activated

a) autocatalytically b) by rennin

c) by HCl d) by HCl and autocatalytically.

4. *D*-amino acids are absorbed by

a) passive diffusion b) active transport

c) both of these d) none of these.

5. Lactate is converted to glucose in

a) skeletal muscle b) liver

c) kidney d) lungs.

6. How many irreversible steps occur in glycolysis ?

a) 2 b) 4

c) 3 d) 5.

7. Urea is formed from

a) citrulline b) argininosuccinate

c) arginine d) ornithine.

8. GPT requires cofactor

a) NADH b) NADPH

c) Pyridoxal phosphate d) FAD.

9. ..... vitamin is involved for acetyl CoA carboxylation reaction.

a) TPP b) FAD

c) Biotin d) Vitamin C.

10. ..... is not an essential fatty acid.

a) Linoleic acid b) Linolenic acid

c) Arachidonic acid d) Oleic acid.

11. Okasaki fragments are present in

a) both the parental strands b) both the daughter strands

c) leading strand d) lagging strand.

12. Methyl cap and poly A tail are present in

a) *m* RNA b) *t* RNA

c) *r* RNA d) *hn* RNA.

13. Deficiency of glucose-6-phosphatase is seen in

a) von Gierke's disease b) galactosemia

c) Taysach's disease d) albinism.

14. Hypopigmentation of skin and sclera is observed in

a) albinism b) alkaptonuria

c) haemophilia d) galactosemia.

15. Which of the following is the high energy compound ?

a) Glyceraldehyde b) AMP

c) Pyrophosphate d) Lactate.

16. Succinate dehydrogenase in mitochondria, is a marker of

a) inner membrane b) outer membrane

c) intermembrane space d) matrix.

17. The reciprocal form of M-M equation was considered by

a) Lineweaver-Burk b) Fischer

c) Koshland d) Dixon.

18. ES complex formation is

a) a reversible reaction b) an irreversible reaction

c) an energy consuming reaction d) a complete reaction.

19. In AIDS, the cells which are affected by HIV are

a) Mast cells b) T helper cells

c) T suppressor cells d) B memory cells.

20. Haptens are

a) low molecular weight substances which cannot induce antibody formation.

b) high molecular weight substances which cannot induce antibody formation.

c) carrier molecules which can induce immune response.

d) those which can activate B cells directly.

B. Fill in the blanks :

21. The red blood cell membrane devoid of cytosol is called as .....

22. The enzymes that digest nucleic acids are present in the .....

23. Deamination of amino acids gives .....

24. Deficiency of essential fatty acids causes ..... .

25. ..... catalyses the synthesis of RNA primer.

26. The enzyme deficiency in albinism is .....

27. Koshland proposed ..... theory.

28. Infection acquired during hospital stay is called as .....

C. Write *True* or *False* :

29. Carbohydrates are the major components of the cell membrane.

30. Gastrin is an enzyme involved in protein digestion.

31. Phosphoglycerate kinase converts 1,3 bisphosphoglycerate to 3-phosphoglycerate.

32. Ribosome moves from 5' to 3' direction.

33. Acyl CoA dehydrogenase is an enzyme involved in fatty acid biosynthesis.

34. TTP is needed for the synthesis of RNA.

35. Galactosemia affects liver.

36. F_1 factor is not essential for oxidative phosphorylation.

37. Malonate is the competitive inhibitor of succinate dehydrogenase.

38. Opsonins prevent phagocytosis.

D. Match the following :

39.	Bile salts	a)	Thyroxine
40.	Thyroid gland	b)	Tumour
41.	*t*RNA	c)	Indicates inflammation
42.	Neoplasm	d)	Emulsification
43.	Enzymes	e)	Anticodon
44.	Pharyngitis	f)	Bio-catalyst.

E. Give one or two word(s) answer :

45. Give one example for peripheral proteins.

46. Give the reaction by which maltose is converted to glucose.

47. What are glucogenic aminoacids ? Give examples.

48. What is the role of creatine phosphate in muscle ?

49. Define *Km*.

50. Who discovered blood groups ?

PART – II

Note : Answer any *fifteen* questions. 15 × 2 = 30

51. Write the Hay's test for bile salts.

52. Write any two factors that influence carbohydrate absorption.

53. What is meant by satiety value of fats ?

54. Why is pancreatic amylase more powerful than salivary amylase ?

55. List any two GI tract hormones.

56. What is glycogenolysis ?

57. How is pyruvate converted to lactate ?

58. What is the structure of Thyroxine ?

59. Show the degradation of phospholipids by enzymes.

60. What is the significance of bile salts ?

61. What is the structure of cholesterol ?

62. What are Okasaki fragments ?

63. What are endonucleases ?

64. What is meant by endocytosis ?

65. Write any two differences between facilitated diffusion and active transport .

66. Give the types of albinism.

67. What are ionophores ?

68. What is irreversible enzyme inhibition ?

69. Name the causative agents of

    i) Tuberculosis

    ii) Tetanus.

70. What is inflammation ?

PART – III

Note : Answer Question No. **71** in **Section-A** which is compulsory and any *five* questions from **Section-B**. 6 × 5 = 30

SECTION – A

71. Write briefly on Donnan membrane equilibrium.

OR

Give the biological applications of viscosity.

SECTION – B

72. Give the mechanism of absorption of carbohydrates.

73. Write a note on Gluconeogenesis.

74. Explain the formation of epinephrine from tyrosine.

75. Give the biological functions of lipids.

76. Write about the biosynthesis of cholesterol.

77. Give the cause and symptoms of Albinism.

78. Write a note on inhibitors of electron transport chain.

79. Discuss the factors influencing the antigenicity of antigens.

80. Describe the disease caused by the deficiency of homogentisate oxidase/enzyme.

PART – IV

Note : Answer any *four* of the following questions. 4 × 10 = 40

81. What are the causes of cancer ?

82. Write the reactions of urea cycle with structures.

83. Give an account on transcription.

84. Write the members of the electron transport chain.

85. Explain the concept of competitive inhibition.

86. Explain antigen-antibody reactions.