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Number						

Part III — BIO-CHEMISTRY

(English Version)

Time Allowed: 3 Hours]

[Maximum Marks: 150

Note: Draw diagrams and write equations wherever necessary.

PART - I

Note: Answer all the questions. $50 \times 1 = 50$

- Choose and write the correct answers in the answer-book:
 - The major buffer in plasma is
 - Acetate buffer
 - Bicarbonate buffer
 - Phosphate buffer
 - d) Hemoglobin buffer.
 - Who was the pioneer to postulate the structure of cell membrane?
 - Gorten

Grendel b)

- Overton
- .CA d) Robertson.
- The optimum pH for salivary amylase is
 - a) pH 6 7

- b) pH 7 8
- c) pH 8·2 8·6
- d) pH 8·1 8·5.

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83		4		
4.	L-a	mino acids are absorbed by		
	a)	passive diffusion	b)	active transport
	c)	both (a) and (b)	d)	none of these.
5.	Нот	w many irreversible steps do oc	cur in	glycolysis?
	a)	2	b)	4
	c)	3	d)	5.
6	Wh	ich of the following enzymes lin	ks gly	colysis and TCA cycle?
	a)	Glucokinase		
	b)	PFK		
= 1	c)	LDH enotherup edula		
	d)	Pyruvate dehydrogenase.		
7.	Thy	vroxine means		
	a)	mono-iodotyrosine	b)	di-iodotyrosine
	c)	tri-iodotyrosine	d)	tetra-iodotyrosine.
8.	. Wh	ich one of the following is stop	codon	Significationalie buffer ?
	a)	AUG	b)	UAG
	c)	GTC	d)	GUA.
9.	GP.	Γ requires cofactor		o was the pleaser to p
	a)	NADH	b)	NADPH
	c)	Pyridoxal phosphate	d)	FAD.
10.	Nui	mber of double bonds in arachic	lonic a	cid is
	a)	1 8-1 Hq (d.)	b)	2 7-886
	c)	3	d)	4. 8.5 - S.6 Hg

SHILDERIR OURIS, COM 11. The single enzyme replicates one strand in continuous manner in direction?

 $3' \rightarrow 5'$

- c) $1' \rightarrow 3'$
- d) $3' \rightarrow 1'$.

12. Which are the fundamental units of nucleic acids?

Nucleosides

- Nucleotides
- D-oxyribonucleic acid
- Ribonucleic acid. d)

13. Which was identified as the first glycogen storage disease?

- Galactosemia disease
- b) von Gierke's disease
- Hemophilia disease
- Alkaptonuria disease. d)

14. Which disease occurs due to the deficiency of an enzyme Hexosaminidase A?

- Galactosemia disease
- b) von Gierke's disease
- Tay-Sachs disease
- Alkaptonuria disease. d)

15. The redox potential of H + / H 2 is

a) + 0.82 volt

b)

- 0.42 volt c)

- 0.32 volt.

16. Mono-amine oxidase enzyme in mitochondria is a marker of

- a) inner membrane
- outer membrane b)
- inter-membrane space c)
- d)

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B.

					Stille
					enten equation ?
383					(A)
	. W	hat is the value of V_{max}	in Michaelis	-M	enten equation 2
		K ₃ [Et] [S]			K ₃ [Et]
					$K_2 + K_3 [ES].$
18.		nich of the following is the			N ₂ + N ₃ [LS].
	a)	moles / m.litre		-	
	c)	moles/litre			moles/gram.
19.	An	example of endemic dis	ease is		c) D-byyrfbonucleto a
	a)	Pox	b)		Tonsils
	c)	Plague	d)		Typhoid.
20.	Nan	ne of the macrophages l	ocated in bra	dn	is
	a)	Kupffer's cells	b)		Microglial cells
	c)	Mesangial cells	d)		Splenic macrophages.
Fill i	in the	e blanks :		-	Y A SHADAMADAN SH
21.	Unit	t membrane model was	shaped by	••••	SOLD STREET, SOLD STREET, STRE
		retin is a polypeptide wi			elacteath and process to
		nslocation is catalyzed b		*	
					osol is called as
					y the deficiency of essential fatty
		0.40	and to Cataoo	u u	which denote the second section is a second section of the second
		aptonuria disease	is caused	l	by the deficiency of an
27.	The		me that co	mp	plexes with the substrate is
			orm of the si	mo	oth skin is

C. Write True or False:

- 29. The buffering action of haemoglobin is due to the lysine residues present.
- 30. The enzyme sucrase converts sucrose into glucose and galactose.
- 31. 24 molecules of ATP are formed in TCA cycle.
- 32. Epinephrine is also called as adrenaline.
- 33. Cephalin is otherwise called as phaphatidyl ethanolamine.
- 34. RNA primer is not required for transcription.
- 35. Benign tumour can spread from one part of the body to another.
- 36. The high energy compound is 1, 3-diphosphoglycerate.
- 37. Malonate is the competitive inhibitor of succinate dehydrogenase.
- 38. IgE is otherwise called as reaginic antibody.

D. Match the following:

- 39. Secretin a) Codon
- 40. mRNA b) GM₂
- 41. Transcription c) Secretory antibody
- 42. Tay-Sachs disease d) ATP synthetase
- 43. F₀ F₁ e) Monomer possesses ribose molety
- 44. IgA f) Gastrointestinal hormone.

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

- 45. What is meant by carrier protein?
- 46. Which ions are needed for the effective action of ptyalin?
- 47. Name the end product of anaerobic glycolysis.
- 48. Which is known as powerhouse of the cell?
- 49. Name the inhibition caused by sulfa drugs.
- 50. What is the other name of metal requiring enzymes?

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PART - II

Note: Answer any fifteen questions.

 $15 \times 2 = 30$

- 51. What is meant by endocytosis?
- 52. Write any two biological applications of viscosity.
- 53. 'Membrane lipids are amphipathic.' Explain.
- 54. What is meant by satiety value of lipids?
- 55. Write any two intestinal juice enzymes involved in the digestion of nucleic acids.
- 56. Write any two factors affecting the absorption of carbohydrates.
- 57. Why is pancreatic amylase more powerful than salivary amylase?
- 58. What are glucogenic amino acids? Give example.
- 59. Write the differences between NADPH and NADH.
- 60. How is methionine activated?
- 61. What are essential fatty acids? Give example.
- 62. Write the importance of bile salts.
- 63. What is the effect of lysolecithin?
- 64. State Chargaff's rule.
- 65. Write a note on exonucleases.
- 66. Give the characteristic features of cancer cells.
- 67. What is meant by monophosphate cleavage?

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- Student Bounty.com 68. The irreversible inhibitor dissociates very slowly from its target enzyme. Why
- 69. Write the pathogen (causative agent) for the following:
 - Syphilis i)

- Leprosy.
- 70. What are antigen presenting cells?

PART - III

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

SECTION - A

71. Write the similarities and differences between facilitated diffusion and active transport.

OR

Write short notes on Donnan membrane equilibrium.

SECTION - B

- 72. Write short notes on any two gastro-intestinal hormones.
- 73. Write a note on HMP.
- 74. Explain the conversion of Tryptophan into Niacin in liver.
- 75. Explain the biosynthesis of cholesterol.
- 76. What are the biological functions of lipids (any five only)?
- 77. Write about the causes and symptoms of Albinism.
- 78. Explain the pathology of von Gierke's disease.
- 79. Explain about the inhibitors of electron transport chain.
- 80. Write the factors influencing the antigenicity of antigens.

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PART - IV

Note: Answer any four of the following questions.

 $4 \times 10 = 40$

- 81. How are catecholamines synthesised?
- 82. What are the reaction sequences of glycolysis?
- 83. Write about the role of tRNA in protein synthesis.
- 84. List out the members of electron transport chain with their arrangement.
- 85. Define and derive Michaelis-Menten equation.
- 86. Explain cell mediated immunity.

What are the biological functions of lipids (any