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(AUCET)
Now it is

Andhra University Region
Post Graduation Common Entrance Test
(AURPGCET)

Paper: Biochemistry

Year: 2002

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Andhra University Common Entrance Test (AUCET)

Biochemistry – 2002

PART-A

1. How many high energy phosphate bond equivalents are utilised in the process of activation of amino acids for protein synthesis ?
1. One 2. Two 3. Three 4. Four
2. How many different codons are capable of terminating polypeptide chain elongation in protein synthesis ?
1. One 2. Two 3. Three 4. Four
3. Translation results in a product known as
1. Protein 2. tRNA 3. mRNA 4. DNA
4. A potent inhibitor of protein synthesis that acts as an analogue of amino acyl - tRNA is
1. Mitomycin C 2. Streptomycin
3. rifampicin 4. Puromycin
5. Nucleotides are linked to one another in mRNA by which of the following bonds ?
1. Phosphate ester bond 2. Hydrophobic bond
3. Phosphodiester bond 4. Glycosidic bond
6. The antibiotic which inhibits DNA dependent RNA polymerase is
1. Mitomycin C 2. Actinomycin D
3. Streptomycin 4. Puromycin
7. What is the sub-cellular site for the biosynthesis of proteins ?
1. Chromosomes 2. Mitochondria
3. Ribosomes 4. Golgibodies
8. One of the following is a stable isotope
1. ^{14}C 2. ^{32}P 3. ^{15}N 4. ^{131}I
9. One of the following is a radioactive isotope
1. ^3H 2. ^2H 3. ^{15}N 4. ^{13}C
10. The half-life of ^{14}C isotope is
1. 5 years 2. 51 years
3. 510 years 4. 5100 years
11. G M counter is used to measure
1. Alpha radiation 2. Beta radiation
3. Gamma radiation 4. Protons
12. Kwashiorkor results from
1. Vitamin A deficiency
2. Vitamin D deficiency
3. Deficiency of minerals in diet
4. Protein and calorie deficiency in diet
13. Marasmus is due to malnutrition of
1. Proteins 2. Proteins and calories
3. Proteins and vitamins 4. Proteins and minerals
14. Soya bean proteins are rich in
1. Lysine 2. Alanine
3. Glycine 4. Aspartic acid
15. Corn and gliadin are low in
1. Lysine 2. Alanine
3. Glycine 4. Aspartic acid
16. The rate of absorption of sugars from the small intestine is greatest for
1. Pentoses 2. Hexoses
3. Disaccharides 4. Oligosaccharides
17. Mammalian G.I. tract cannot digest
1. Amylose 2. Amylopectin
3. Glycogen 4. Cellulose
18. The normal ratio of calcium to phosphorus in blood serum is
1. 1:1 2. 2:1 3. 2:3 4. 2:5
19. The major category of serum proteins into which nearly all antibodies fall is
1. Albumins 2. Beta globulins
3. Alpha globulins 4. Gamma globulins
20. Cholesterol circulates in the blood stream chiefly as
1. Free cholesterol
2. Beta lipoproteins
3. Cholesterol esters
4. Very low density lipoproteins
21. Inactive plasminogen is activated by
1. Fibrinogen 2. Fibrin
3. Thrombin 4. Calcium ions

- 22. Factor - 1 involved in blood clotting is**
 1. Fibrinogen 2. Prothrombin
 3. Lakilorand factor 4. Calcium ions
- 23. Factor - X of blood clotting is**
 1. Christmas factor 2. Fibrinogen
 3. Calcium ions 4. Stuart Prower factor
- 24. The following enzyme is bound to the cell membrane**
 1. Hexokinase
 2. Sodium potassium ATPase
 3. Pepsin
 4. Lipase
- 25. One of the following is not estimated by RIA**
 1. T_3 2. T_4
 3. Insulin 4. 3H testosterone
- 26. The micro organism that can cause jaundice is**
 1. Salmonella typhimurium
 2. Plasmodium sp
 3. E.coli
 4. Streptococcus faecalis
- 27. Zinc is a constituent of enzyme**
 1. Lactate dehydrogenase
 2. Glutamate dehydrogenase
 3. Carbonic anhydrase
 4. Transketolase
- 28. Endemic goitre is due to the deficiency of**
 1. Selenium 2. Fluorine
 3. Molybdenum 4. Iodine
- 29. Wilson's disease is characterized by the deposition of one of the following minerals in tissues**
 1. Fe 2. Cu 3. Hg 4. F
- 30. One of the following is trace element**
 1. Iron 2. Sodium 3. Potassium 4. Calcium
- 31. The mineral that is essential for thyroid glands is**
 1. Fluorine 2. Iodine 3. Selenium 4. Sodium
- 32. The synthesis of antibody proteins takes place**
 1. By the general mechanism of protein synthesis
 2. On the single type of ribosome
 3. On H chains only
 4. On t-RNA
- 33. Light and heavy chains are associated with the structures of**
 1. Albumin 2. Haemoglobin
 3. Fibrinogen 4. Immunoglobulins
- 34. Immature B lymphocytes**
 1. Produce only μ chains
 2. Are progenitors of T as well as B lymphocytes
 3. Express Ig μ on their cell surface
 4. Must go through the thymus to mature
- 35. Antigen is initially presented to T lymphocytes by**
 1. Macrophages 2. Neutrophils
 3. Plasma cells 4. Platelets
- 36. A hyperglycemic factor produced by the pancreas is**
 1. Insulin 2. Lipase 3. Glucagon 4. Thyroxine
- 37. The prostaglandins**
 1. Cause hypertension
 2. Occur only in prostatic tissue
 3. Are alicyclic fatty acid derivatives
 4. Are synthesized from oleic acid
- 38. Thyroxine is synthesized in the thyroid from**
 1. Tryptophan 2. Tyramine
 3. Histidine 4. Thyroglobulin
- 39. The parathyroid gland regulates the metabolism of**
 1. Calcium 2. Phosphate
 3. Magnesium 4. Iron
- 40. Among the anti-coagulants normally present in an animal is**
 1. Lipoprotein lipase 2. Dicumarol
 3. Vitamin K 4. Heparin
- PART-B**
- 41. In competitive inhibition**
 1. The K_m is unchanged 2. The K_m is decreased
 3. V_{max} is decreased 4. V_{max} is unchanged
- 42. K_m is**
 1. The substrate concentration that gives one-half V_{max}
 2. The dissociation constant for the enzyme-substrate complex
 3. Equal to half the substrate concentration required to achieve V_{max}
 4. Identical for all isozymes of an enzyme
- 43. An enzyme of saliva that hydrolyzes starch is**
 1. Pepsin 2. β -amylase
 3. α -amylase 4. Maltase
- 44. Which of the following is an essential cofactor in carboxylation reactions?**
 1. Coenzyme A 2. CTP 3. Lipoic acid 4. Biotin
- 45. A specific poison for succinate dehydrogenase is**
 1. Malonate 2. Arsenite 3. Cyanide 4. Malate
- 46. The coenzyme required for pyruvate decarboxylase is**
 1. Coenzyme A 2. NAD^+
 3. FMN 4. TPP
- 47. Which of the following is not a component of coenzyme A?**
 1. Adenylic acid 2. Acetic acid
 3. Pantothenic acid 4. Cysteamine

48. Dehydrogenases use as coenzymes all of the following except
 1. NAD⁺ 2. FAD
 3. FMN 4. Ferriprotophyrin
49. Coenzyme A contains the vitamin
 1. Riboflavin 2. pantothenic acid
 3. Pyridoxal 4. Thiamine
50. Urea is produced by the enzyme
 1. Urease 2. Glutaminase
 3. Arginase 4. Uricase
51. the specific substrate for oxidative phosphorylation is
 1. AMP 2. ADP 3. ATP 4. NADP⁺
52. In oxidative phosphorylation, the oxidation of one molecule of NADH to NAD⁺ produces how many ATPs?
 1. 2 2. 3 3. 4 4. 5
53. An enzyme not involved in glycolysis is
 1. Aldolase
 2. Enolase
 3. Pyruvate kinase
 4. α -glycerophosphate dehydrogenase
54. Dehydrogenase of the hexone monophosphate shunt are specific for
 1. NAD⁺ 2. FAD 3. NADP⁺ 4. FMN
55. When one molecule of glucose is completely oxidized in vivo, how many ATP molecules are formed?
 1. 2 2. 12 3. 24 4. 36
56. Kinases require
 1. Mn⁺⁺ 2. Mg⁺⁺
 3. Inorganic phosphate 4. EDTA
57. A fatty acid not synthesized in man is
 1. Oleic acid 2. Stearic acid
 3. Linoleic acid 4. Palmitic acid
58. The major site of acetoacetate formation from fatty acids in the
 1. Liver 2. Adipose tissue
 3. Kidney 4. Muscle
59. An amino acid not involved in urea synthesis is
 1. Arginine 2. Histidine 3. Citrulline 4. Ornithine
60. An essential amino acid in man is
 1. Proline 2. Serine
 3. Tyrosine 4. Methionine
61. Which amino acid possesses two asymmetric carbon atoms?
 1. Valine 2. Leucine 3. Isoleucine 4. Histidine
62. An animal is in positive nitrogen balance when
 1. Nitrogen intake exceeds output
 2. Nitrogen output exceeds intake
 3. Urine is nitrogen free
 4. Urine contains nitrogen
63. The biological activity of the tocopherols has been attributed to their action as
 1. Antioxidants
 2. Carriers in the electron transport chain
 3. Anticoagulants
 4. Precursors of vitamin A
64. Vitamin K plays an essential role in
 1. Preventing thrombosis
 2. The biosynthesis of prothrombin and proconvertin
 3. Maintaining retinal integrity
 4. Preventing bile stasis
65. Vitamin B₁₂ is a
 1. Porphyrin like compound
 2. Fat - soluble vitamin
 3. Vitamin synthesized by all animals except man
 4. Copper containing B - vitamin
66. A vitamin that is a reducing agent, a property that may explain its function is
 1. Nicotinamide 2. Riboflavin
 3. Ascorbic acid 4. Folic acid
67. The growth of bacteria requiring p-aminobenzoic acid is inhibited by
 1. Folic acid 2. Tetrahydrofolic acid
 3. Citrovorum factor 4. Sulfonamides
68. Whole wheat is an excellent source of
 1. Thiamine 2. Vitamin A
 3. Ascorbic acid 4. Vitamin D
69. In man, the principal catabolic product of purines is
 1. Allantoin 2. Urea
 3. Ammonia 4. Uric acid
70. Which compound is present in RNA but not in DNA
 1. Thymine 2. Cytosine 3. Uracil 4. Guanine

PART-C

71. Which among the following is a basic amino acid
 1. Asparagine 2. Arginine
 3. Proline 4. Alanine
72. The reagent used for detection of amino acids is
 1. Molisch reagent
 2. Dichlorophenol indophenol
 3. Ninhydrin
 4. 2, 4 - dinitrophenyl hydrazine
73. The amino acids exist at zwitter ions when they are in
 1. Solid state 2. Acidic solution
 3. Alkaline solution 4. Neutral solution
74. Collagen is very rich in
 1. Glycine 2. Serine
 3. Aspartic acid 4. Glutamic acid

75. Choline is
1. Amino acid 2. Fatty acid
3. Quaternary base 4. Sugar
76. Inulin is a
1. Fructosan 2. Glucosan
3. Xylan 4. Hormone
77. A reducing disaccharide containing glucose and fructose is
1. Maltose 2. Lactose 3. Trehalose 4. Turanose
78. Cane sugar injected into blood is
1. Converted to fructose
2. Converted to glucose
3. Undergoes no appreciable change
4. Converted to glucose and fructose
79. Iodine value of an oil shown the extent of
1. Polymerization 2. Umaturation
3. Molecular size 4. Esterification
80. Liebermann - Burchard reaction is to detect
1. Glycerol 2. Palmitic acid
3. Cholesterol 4. Unsaturated fatty acid
81. Hydrolysis of a triacyl glycerol is also known as
1. Saponification 2. Esterification
3. Hydrogenation 4. Dehydration
82. Sphingosine is
1. Unsaturated fatty acid
2. Saturated fatty acid
3. Sterol
4. Complex amino alcohol
83. For separation of proteins and nucleic acid the following ion - exchange resin is preferred
1. Alumina 2. Dowex
3. DEAF cellulose 4. Amberlite
84. In gel - filtration the following will comes as a first fraction
1. Protein 2. Amino acids
3. Sugars 4. Sodium Chloride
85. The instrument commonly used to estimate electrolysis is
1. Spectrophotometer 2. Ultracentrifuge
3. Polarimeter 4. Flame Photometer
86. TLC is very useful to determine
1. Iodine number
2. Acetyl number
3. Fatty acid composition
4. Saponification value
87. The spraying reagent for sugars is
1. Aniline hydrogen oxalate
2. Iodine
3. Ninhydrin
4. Nitrobul tetrazolium
88. The following is not used in gel electrophoresis
1. Alumina 2. Starch
3. Agar 4. Polyacrylamide
89. The Beer - Lambert Law relates absorbance with
1. Concentration of solute and path length of the solution column
2. Concentration of solute and height of the solution column
3. Length and heights of solution column
4. Intensities of incident and transmitted lights
90. Chemically heparin is a
1. Purine 2. Protein
3. Lipid 4. Carbohydrate

ANSWERS

1.2	2.3	3.1	4.4	5.3	6.2	7.3	8.3	9.1	10.4	11.2	12.4	13.4	14.	15.1	16.2
17.4	18.	19.4	20.3	21.1	22.1	23.4	24.2	25.4	26.1	27.3	28.4	29.2	30.1	31.2	32.1
33.4	34.3	35.1	36.3	37.2	38.4	39.1	40.4	41.4	42.1	43.3	44.4	45.4	46.2	47.4	48.4
49.2	50.1	51.2	52.2	53.4	54.3	55.4	56.2	57.3	58.1	59.2	60.4	61.3	62.1	63.1	64.2
65.1	66.3	67.4	68.1	69.4	70.3	71.2	72.3	73.4	74.1	75.2	76.1	77.4	78.4	79.2	80.3
81.1	82.4	83.3	84.1	85.4	86.1	87.2	88.1	89.1	90.2						

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