

# **Andhra University Common Entrance Test (AUCET)**

Now it is

## **Andhra University Region Post Graduation Common Entrance Test (AURPGCET)**

**Paper: Biochemistry**

**Year: 2005**

<http://biochemistryden.blogspot.com>  
<http://biohunting.blogspot.com>  
<http://lifescience-exampapers.blogspot.com>

Note: The given papers are previous AUCET Biochemistry papers

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## Biochemistry – 2005

### PART-A

1. The mature erythrocyte contains
  1. Cytochromes
  2. TCA – enzymes
  3. Pyruvic kinase
  3. ATP – ase
2. Hemoglobin is responsible for what percentage of carbondioxide transport by the blood?
  1. 90
  2. 50
  3. 10
  4. 5
3. Christmas factor is synonymous with
  1. Proconvertin
  2. Antihemophilic factor-B
  3. Platelet accelerator
  4. Factor XI
4. Blood plasma differs from blood serum in content of
  1. Lipid
  2. Erythrocytes
  3. Protein
  4. Carbohydrate
5. The naturally occurring porphyrins are
  1. Usually associated with a metal
  2. Usually associated with an unchanged metalion
  3. Only found in animals
  4. Usually chains of pyrrole rings
6. Among the anticoagulants normally present in an animal is
  1. Dicumarol
  2. Heparin
  3. Vitamin-K
  4. Lipoprotein lipase
7. Which is not a part of the hemoglobin molecule?
  1. Histidine
  2. Protein
  3. Ferric ion
  4. Vinyl groups
8. The normal  $P^H$  of blood is
  1. 7.4
  2. 6.8
  3. 7.7
  4. 7.1
9. Oxidation of which substance yields the most calories per gram?
  1. Glucose
  2. Lipid
  3. Animal protein
  4. Glycogen
10. A negative nitrogen balance is observed
  1. During normal pregnancy
  2. During normal child growth
  3. During convalescence
  4. In malnutrition
11. The major pathway for calcium excretion under normal condition is
  1. Feces
  2. Sweat
  3. Urine
  4. Milk
12. The biological value of a protein depends upon
  1. The digestibility alone
  2. Digestibility and amino acid composition
  3. Amino acid composition alone
  4. Digestibility and leucine
13. Tetany due to hypocalcemia results from removal of the
  1. Parathyroids
  2. Thyroids
  3. Pituitary
  4. Adrenals
14. The ingestion of which food-stuff results in the greatest specific dynamic action?
  1. Fat
  2. Carbohydrate
  3. Protein
  4. Vitamins
15. Ferritin is found in
  1. Liver
  2. Kidney
  3. Pancreas
  4. Bone
16. A hyperglycemic factor produced by the pancreas is
  1. Insulin
  2. Glucagon
  3. FSH
  4. ACTH
17. The prostaglandins
  1. Cause hypertension
  2. Occur only in prostatic tissue
  3. Are alicyclic fatty acid derivatives
  4. Are synthesized from oleic acids
18. How many different codons are capable of terminating polypeptide chain elongation in protein synthesis?
  1. One
  2. Two
  3. Three
  4. Four
19. Translation results in a product known as
  1. Protein
  2. t-RNA
  3. m-RNA
  4. DNA
20. A potent inhibitor of protein synthesis that acts as an analogue of amino acyl t-RNA is
  1. Mitomycin-C
  2. Streptomycin
  3. Rifampicin
  4. Puromycin



21. Nucleotides are linked to one another in RNA by one of the following?  
 1. Phosphate ester bond 2. Phosphodiester bond  
 3. Glycosidic bond 4. Hydrophobic bond
22. One of the following is a stable isotope  
 1.  $^{15}\text{N}$  2.  $^{14}\text{C}$  3.  $^{32}\text{P}$  4.  $^{131}\text{I}$
23. One of the following is a radioactive isotope  
 1.  $^2\text{H}$  2.  $^{15}\text{N}$  3.  $^{13}\text{C}$  4.  $^3\text{H}$
24. In ELISA the enzyme label for the antibody may be  
 1. Glucose oxidase 2. Amylase  
 3. Lipase 4. Succinic dehydrogenase
25. The half-life of  $^{14}\text{C}$  isotope is  
 1. 51 years 2. 5100 years  
 3. 510 years 4. 5 years
26. GM-counter is used to measure  
 1. Gamma -radiation 2. Protons  
 3. Beta-radiation 4. Alpha-radiation
27. Kwashiorker results from  
 1. Vitamin A deficiency  
 2. Vitamin D deficiency  
 3. Mineral deficiency in diet  
 4. Protein and calorie deficiency in diet
28. Soya-bean proteins are rich in  
 1. Lysine 2. Alanine 3. Glycine 4. Proline
29. Inactive plasminogen is activated by  
 1. Fibrinogen 2. Fibrin  
 3. Thrombin 4. Calcium ions
30. The following enzyme is bound to the cell membrane  
 1. Sodium-Potassium ATP ase  
 2. Lipase  
 3. Pepsin  
 4. Hexokinase
31. One of the following is not estimated by RIA  
 1.  $\text{T}_3$  2.  $\text{T}_4$   
 3. Insulin 4.  $^3\text{H}$ -testosterone
32. The micro organism that can cause jaundice is  
 1. Steptococcus faecalis  
 2. Escherechia coli  
 3. Plasmodium sp.  
 4. Salmonella typhimurium
33. Zinc is a constituent of the enzyme  
 1. Lactate dehydrogenase  
 2. Glutamate dehydrogenase  
 3. Carbonic anhydrase  
 4. Transketolase
34. Immune lymphocytes  
 1. Produce only  $\mu$  -chains  
 2. Are progenitors of T as well as B lymphocytes  
 3. Express IgM 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. The codon for phenylalanine is  
 1. AAA 2. CCC 3. GGG 4. UUU
37. Restriction enzymes have been found in  
 1. Humans 2. Birds  
 3. Bacteria 4. Bacterio phages
38. Sigma and Rhofactors are required for  
 1. Replication 2. Transcription  
 3. Translation 4. Polymerization
39. Okasaki fragments are small bits of  
 1. RNA 2. DNA  
 3. DNA with RNA heads 4. RNA with DNA heads
40. DNA directed RNA polymerase is  
 1. Replicase 2. Transcriptase  
 3. Reverse transcriptase 4. Polymerase III
- 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 half-maximal velocity  
 2. The dissociation constant for the ES-complex  
 3. Equal to half the substrate concentration required to achieve maximal velocity  
 4. Identical for all isozymes of an enzyme
43. An enzyme of saliva that hydrolyzes starch is  
 1. Pepsin 2.  $\beta$  -amylase  
 3.  $\alpha$ -amylase 4. Maltase
44. Which one 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 succinic dehydrogenase is  
 1. Malonate 2. Arsenite 3. Cyanide 4. Malate
46. The coenzyme for transketolase is  
 1. Coenzyme A 2.  $\text{NAD}^+$   
 3. FMN 4. TPP
47. Which one 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.  $\text{NAD}^+$  2. FAD  
 3. FMN 4. Ferriprotoporphyrin



49. Urea is produced by the enzyme  
1. Urease 2. Glutaminase  
3. Arginase 4. Uricase
50. The specific substrate for oxidative phosphorylation is  
1. AMP 2. ADP 3. ATP 4. NADP<sup>+</sup>
51. An enzyme not involved in glycolysis is  
1. Aldolase  
2.  $\alpha$  - glycerophosphate dehydrogenase  
3. Enolase  
4. Pyruvate kinase
52. Dehydrogenases of the hexose monophosphate shunt are specific for  
1. NAD<sup>+</sup> 2. FAD 3. NADP<sup>+</sup> 4. FMN
53. When one molecule of glucose is completely oxidized in vivo, how many ATP molecules are formed?  
1. 2 2. 12 3. 24 4. 36
54. Which amino acid undergoes transamination to form  $\alpha$  -ketoisocaproic acid?  
1. Leucine 2. Isoleucine 3. Valine 4. Lysine
55. For the conversion of dUMP to TMP, which one of the following is required?  
1. Tetrahydrofolic acid 2. ATP  
3. FMN 4. Pyridoxal phosphate
56. Kinases require  
1. Mg<sup>++</sup> 2. Mn<sup>++</sup>  
3. Inorganic phosphate 4. EDTA
57. A fatty acid not synthesized in man is  
1. Oleic acid 2. Linoleic acid  
3. Stearic acid 4. Palmitic acid
58. The major site of aceto acetate formation from fatty acids is the  
1. liver 2. kidney 3. Lungs 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. Methionine 4. Tyrosine
61. Which amino acid possesses two asymmetric carbon atoms  
1. Valine 2. Leucine 3. Histidine 4. Isoleucine
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. A vitamin that acts as a reducing agent is  
1. Nicotinamide 2. Riboflavin  
3. Ascorbic acid 4. Folic acid
66. Vitamin B<sub>12</sub> is a  
1. Porphyrin like compound  
2. Fat-soluble vitamin  
3. Vitamin synthesized by all animals except man  
4. Copper - containing B-vitamin
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  
2. Ascorbic acid 4. Vitamin-D
69. In man, the principal catabolic product of purines is  
1. Allantoin 2. Urea  
3. Uric acid 4. Ammonia
70. A key substance in pyrimidine biosynthesis is  
1. ATP 2. Carbamoyl phosphate  
3. Thiourea 4. NADP<sup>+</sup>

### PART-C

71. Inulin is a  
1. Fructosan 2. Glucosan  
3. Xylan 4. Hormone
72. Choline is  
1. Amino acid 2. Fatty acid  
3. Quaternary base 4. Sugar
73. Collagen is very rich in  
1. Glycine 2. Serine  
3. Aspartic acid 4. Glutamic acid
74. The following is not used in gel electrophoresis  
1. Agar 2. Starch  
3. Polyacrylamide 4. Alumina
75. The common stain for proteins in electrophoresis is  
1. Bromophenol blue 2. Oil red O  
3. Congo red 4. Ninhydrin
76. TLC is very useful to determine  
1. Iodine number  
2. Acetyl number  
3. Saponification value  
4. Fatty acid composition



- 77. In molecular exclusion chromatography the following one will come as a first fraction**  
 1. Protein 2. Amino acids  
 3. sodium chloride 4. Sugars
- 78. The high acidity of cation exchange is due to**  
 1. -COOH 2. -SO<sub>3</sub>H  
 3. Phenolic group 4. Enolic group
- 79. For separation of proteins and nucleic acids the following ion-exchange resin is preferred**  
 1. Alumina 2. Dowex  
 3. DEAE cellulose 4. Amberlite
- 80. The instrument commonly used to estimate electrolytes is**  
 1. Spectro photometer 2. Colori meter  
 3. Polari meter 4. Flame photo meter
- 81. Keratin is a**  
 1. Fibrous protein 2. Globulin  
 3. Histone 4. Conjugated protein
- 82. Histones**  
 1. Are proteins rich in lysine and arginine  
 2. Are bound covalently to DNA  
 3. Are identical to protamines  
 4. Have relatively very high molecular weights
- 83. Which one of the following polysaccharides is not a polymer of glucose?**  
 1. Amylose 2. Amylopectin  
 3. Glycogen 4. Inulin
- 84. Reduction of glucose with calcium in water produces**  
 1. Sorbitol 2. Dulcitol 3. Mannitol 4. Sorbose
- 85. Cytochromes are**  
 1. Riboflavin containing nucleotides  
 2. Pyridine nucleotides  
 3. Iron -Porphyrin proteins  
 4. Metal containing flavoproteins
- 86. Chemically heparin is a**  
 1. Purine 2. Protein  
 3. Lipid 4. Carbohydrate
- 87. The Beer - Lambert law relates absorbance with**  
 1. Concentration of solute and pathlength of the solution cell  
 2. Concentration of solute and height of the solution cell  
 3. Length and heights of solution column  
 4. Intensities of incident and transmitted lights
- 88. Sphingosine is**  
 1. Unsaturated fatty acid 2. Saturated fatty acid  
 3. Sterol 4. Complex amino alcohol
- 89. Liebermann - Buchard reaction is to detect**  
 1. Glycerol 2. Oleic acid  
 3. Cholesterol 4. Cerebroside
- 90. Iodine value of an oil shows the extent of**  
 1. Polymerization 2. Unsaturation  
 3. Molecular size 4. Esterification

## ANSWERS

1.3	2.-	3.4	4.3	5.1	6.2	7.4	8.1	9.2	10.3	11.3	12.2	13.1	14.3	15.2	16.2
17.3	18.3	19.1	20.4	21.2	22.2	23.2	24.4	25.2	26.3	27.4	28.1	29.1	30.1	31.4	32.4
33.3	34.2	35.1	36.4	37.4	38.2	39.3	40.2	41.2	42.1	43.2	44.4	45.1	46.4	47.2	48.4
49.3	50.2	51.4	52.3	53.4	54.-	55.1	56.1	57.1	58.1	59.2	60.3	61.4	62.1	63.1	64.2
65.3	66.1	67.4	68.1	69.3	70.2	71.1	72.3	73.1	74.4	75.1	76.4	77.1	78.2	79.3	80.4
81.1	82.1	83.4	84.4	85.3	86.4	87.1	88.4	89.3	90.2						