DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet Series

A

T. B. C. : AP – 3 – 17/18

TEST BOOKLET

ASSISTANT PROFESSOR IN O.M.E.S.

(BIOCHEMISTRY)

Sl. No. 1197

Time Allowed : 3 Hours

Maximum Marks : 200

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D**, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. **YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.**
5. This Test Booklet contains **200** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided by **using BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. **There will be no negative markings for wrong answers.**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the **Test Booklet**, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

SEAL

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1. Water-soluble form of Vitamin K is :

(A) Phylloquinone

(B) Menaquinone

(C) Menadione

(D) All of the above

2. Jaundice is clinically evident when :

(A) Serum total bilirubin exceeds > 1 mg%

(B) Serum total bilirubin exceeds > 2 mg%

(C) Serum total bilirubin exceeds > 1.5 mg%

(D) Serum total bilirubin exceeds > 0.1 mg%

3. Familial hypercholesterolaemia is most often due to :

(A) Apo E deficiency

(B) Acyl CoA deficiency

(C) LDL receptor deficiency

(D) LCAT deficiency

4. Which of the following is increased in lipoprotein lipase deficiency ?

(A) VLDL

(B) LDL

(C) HDL

(D) Chylomicrons

5. The following are the blood and urine biochemical report of a patient :

(i) Serum bilirubin – 0.8 mg%

(ii) Conjugated bilirubin – 0.2 mg%

(iii) ALP – 100 IU/L

(iv) AST – 32 IU/L

(v) ALT – 35 IU/L

(vi) Urine bile pigment – negative

(vii) Urine urobilinogen – traces

What is the probable diagnosis ?

(A) Pre-hepatic jaundice

(B) Hepatic jaundice

(C) Post-hepatic jaundice

(D) Normal liver function

6. The storage form of Vitamin A is :

(A) Retinol palmitate

(B) Retinal palmitate

(C) All trans retinal

(D) Retinoic acid

7. Which of the following would be observed in a patient with starvation for 72 hours ?

(A) Increased ketosis due to breakdown of fats

(B) Increased gluconeogenesis by muscle protein breakdown

(C) Increased glycogenolysis

(D) Increased glycolysis

8. In hyperparathyroidism :

(A) Both serum calcium and serum phosphorus increase

(B) Serum calcium increases and serum phosphorus decreases

(C) Serum calcium decreases and serum phosphorus increases

(D) Both of them decreases

9. If a substance present in blood is filtered by kidney, is reabsorbed and not secreted, then clearance of that substance will be :

(A) = GFR

(B) < GFR

(C) > GFR

(D) Not related to GFR

10. Which of the following biochemical reactions does not occur in mitochondria ?

(A) Kreb's cycle

(B) Urea cycle

(C) Cori's cycle

(D) Fatty acid oxidation

11. NAD^+-dependent dehydrogenases are assayed at :

(A) 260 nm

(B) 280 nm

(C) 340 nm

(D) 600 nm

12. The plasma protein employed as marker for oncofetal tumour is :

(A) Human chorionic gonadotrophin

(B) Alpha fetoprotein

(C) Prostate-specific antigen

(D) Calcitonin

13. Least predominant immunoglobulin is :

(A) IgG

(B) IgA

(C) IgM

(D) IgE

14. The following is true about coding strand of DNA :

(A) Acts as template for mRNA

(B) Contains nucleotide sequence complementary to RNA transcript

(C) Matches with RNA transcript that encodes protein

(D) None of the above

15. What is involved in formation of dTMP from dUMP ?

(A) N5, N10-methylenetetrahydro-folate

(B) Formiminofolate

(C) N5-formylfolate

(D) Dihydrofolate

16. The primary defect in Xeroderma pigmentosum is :

(A) Formation of thymine dimer

(B) Poly-ADP-ribose polymerase is defective

(C) Exonuclease is defective

(D) Formation of adenine dimer

17. The following is the specific test for Gout :

(A) Raised serum uric acid level

(B) Raised uric acid in synovial fluid of joint

(C) Raised urea level

(D) Raised urease enzyme level

18. Vitamin B12 acts as coenzyme for the following enzyme :

(A) Isocitrate dehydrogenase

(B) Homocysteine methyltransferase

(C) Glycogen synthase

(D) Glucose-6-phosphate dehydrogenase

19. If pH of a specific protein in an electrophoretic field is above its isoelectric point, then the protein will :

(A) Precipitate

(B) Not move

(C) Migrate to cathode

(D) Migrate to anode

20. Structure of protein is best studied by :

(A) X-ray crystallography

(B) Ultra centrifugation

(C) Using Sanger's reagent

(D) Sucrose density gradient centrifugation

21. The integral membrane glycoprotein of human RBCs is :

(A) Porin

(B) Ankylin

(C) Spectrin

(D) Glycophorin

22. Hexakinase is a :

(A) Transferase

(B) Reductase

(C) Oxido-reductase

(D) Oxidase

23. The molecular weight of a protein can be best determined by :

(A) PAGE

(B) SDS-PAGE

(C) Isoelectric focussing

(D) Ion exchange chromatography

24. Levels of VLDL and LDL increase in blood due to high intake of :

(A) Glucose diet

(B) Fructose diet

(C) Lactose diet

(D) Starch diet

25. In which one of the following tissues is glucose transport into the cell enhanced by insulin ?
(A) Brain
(B) Liver
(C) Red blood cells
(D) Adipose tissue

26. Which of the following process can transport a solute against its concentration gradient ?
(A) Active mediated transport
(B) Passive mediated transport
(C) Diffusion
(D) Reverse osmosis

27. Which of the following is a selenium-containing enzyme ?
(A) Dihydrofolate reductase
(B) Dihydrobiopterin reductase
(C) Glutathione peroxidase
(D) Glutathione reductase

28. Dihydrobiopterin participates in the catabolism of :
(A) Proline
(B) Phenylalanine
(C) Tyrosine
(D) Tryptophan

29. Conversion of fibrinogen to fibrin is due to proteolytic activity of :
(A) Thrombin
(B) Plasmin
(C) Trypsin
(D) Renin

30. Antimycin A is an inhibitor of :
(A) Complex I
(B) Complex II
(C) Complex III
(D) Complex IV

31. Trypsin cleaves protein after :
(A) Aromatic amino acid
(B) Basic amino acid
(C) Acidic amino acid
(D) Neutral amino acid

32. Chymotrypsin cleaves protein after :
(A) Aromatic amino acid
(B) Basic amino acid
(C) Acidic amino acid
(D) Neutral amino acid

33. Complimentary RNA strand transcribed from DNA sequence AGTCAT will read as :
(A) UCAGUA
(B) AUGACU
(C) TCAGTA
(D) ATGACT

34. N-acetylglutamate is a co-factor of the enzyme :
(A) Glutamate dehydrogenase
(B) Glutamate transaminase
(C) Carbamoyl phosphate synthase I
(D) Glutaminase

35. Phosphoenol pyruvate is converted to pyruvate by the action of :

(A) Pyruvate kinase

(B) Pyruvate carboxylase

(C) Phosphoenol pyruvate carboxykinase

(D) Enolase

36. Warburg effect is observed in :

(A) Quiescent cells

(B) Stem cells

(C) Apoptotic cells

(D) Malignant cells

37. ATP is required for carboxylation of the following molecules except :

(A) Pyruvate

(B) Acetyl CoA

(C) Glutamate

(D) Methylmalonyl CoA

38. In Wilson disease copper is deposited in all of the following sites except :

(A) Lens

(B) Lentiform nucleus

(C) Liver

(D) Renal tubules

39. Substrate-level phosphorylation is associated with asctivities of all of the following enzymes except :

(A) Phosphoglycerate kinase

(B) Phosphofructokinase

(C) Pyruvate kinase

(D) Succinate thiokinase

40. All of the following are the sources of NADPH except :

(A) Thioesterase

(B) Isocitrate dehydrogenase

(C) Malic enzyme

(D) Pentose phosphate pathway

41. Following is an example of omega-3 fatty acid :

(A) Linoleic acid

(B) Alpha linoleic acid

(C) Gamma linoleic acid

(D) Arachidonic acid

42. The most abundant amino acid in collagen is :

(A) Valine

(B) Lysine

(C) Glycine

(D) Alanine

43. Transport of glucose from the lumen to the intestinal mucosal cells is coupled with the diffusion of :

(A) K^+

(B) Cl^-

(C) HCO_3^-

(D) Na^+

44. Glucose is completely catabolized to CO_2 and water by reactions in glycolysis and TCA cycle. Release of CO_2 is catalyzed by the following enzymes except :

(A) Pyruvate dehydrogenase complex

(B) Isocitrate dehydrogenase

(C) Alpha-ketoglutarate dehydrogenase complex

(D) Succinate dehydrogenase

45. All of the following enzymes catalyze substrate-level phosphorylation except :

(A) Pyruvate kinase

(B) Phosphoenolpyruvate carboxykinase

(C) 3-phosphoglycerate kinase

(D) Succinate thiokinase/succinyl CoA synthetase

46. Vitamin B12 acts as co-enzyme to all of the following enzymes except :

(A) L-methylmalonyl CoA mutase

(B) Homocysteine methyl transferase

(C) Leucine aminopeptidase

(D) HMG CoA synthase

47. The bonds in protein structure that are not broken on denaturation are :

(A) Hydrogen bonds

(B) Peptide bonds

(C) Ionic bonds

(D) Hydrophobic interactions

48. The connecting link between HMP shunt and lipid synthesis is :

(A) Ribose

(B) NADPH

(C) Sedoheptulose-7-phosphate

(D) NADH

49. The following is a sulfur containing essential amino acid :

(A) Methionine

(B) Cysteine

(C) Cystine

(D) Seleno-cysteine

50. Impairment in the synthesis of dopamine by the brain is a major causative factor for :

(A) Parkinson's disease

(B) Addison's disease

(C) Cushing's syndrome

(D) Goiter

51. In hemolytic jaundice, van den Bergh reaction is :

(A) Indirect positive

(B) Direct positive

(C) Biphasic

(D) incoclusive

52. The metabolic (endogenous) water is derived by the oxidation of :

(A) Carbohydrates

(B) Proteins

(C) Fats

(D) All of the above

53. The essential amino acid limiting in rice is :

(A) Methionine

(B) Tryptophan

(C) Lysine

(D) Histidine

54. The amino acids are said to be ketogenic when the carbon skeleton is degraded to :

(A) Succinyl CoA

(B) Fumarate

(C) Acetyl CoA

(D) Pyruvate

55. Aspartate transcarbamoylase in pyrimidine pathway is inhibited by :

(A) ATP

(B) CTP

(C) ADP

(D) AMP

56. Iron in the enterocyte can be stored as :

(A) Transferrin

(B) Ferritin

(C) Ceruloplasmin

(D) Hemosiderin

57. Catabolite repression is mediated by a Catabolite gene Activator Protein (CAP) is association with :

(A) AMP

(B) GMP

(C) cGMP

(D) cAMP

58. Hyperbolic Oxygen Dissociation Curve is a property of :

(A) Haemoglobin

(B) Myoglobin

(C) Carboxy haemoglobin

(D) Methaemoglobin

59. All of the following about GLUT4 are correct except :

(A) It is present in muscle and adipose tissue

(B) It is a transmembrane protein

(C) It mediates energy-dependent uptake of glucose

(D) Number of GLUT4 molecules are increased in the cell membrane by insulin

60. The most frequent conjugation reaction in Phase-II detoxification :

(A) Glucuronidation

(B) Acetylation

(C) Sulfation

(D) Conjugation with glutathione

61. Acute phase proteins include all except :

(A) c-reactive protein

(B) Haemoglobin

(C) Fibrinogen

(D) Haptoglobin

62. Most plasma proteins are glycoproteins except :

(A) Haptoglobin

(B) Transferrin

(C) Albumin

(D) α1-antitrypsin

63. Following statements are true for active sites in enzyme except :

(A) They are clefts that occupy small region in enzyme molecule

(B) They are flexible in structure

(C) They possess a substrate binding and a catalytic site

(D) The substrate bind at the active site by covalent bond

64. All are the competitive inhibitors of enzyme action, except :

(A) Lovastatin

(B) Malonate

(C) Iodoacetate

(D) Methotrexate

65. 3′-End of all functional mature tRNAs has :

(A) The anticodon

(B) CCA sequence

(C) Poly-A tail

(D) Methyl-guanosine triphosphate cap

66. To facilitate the association of RNAP II, which one of the following interact with promoter site of eurkaryotic mRNA gene ?

(A) Termination factor

(B) General Transcription Factor (GTF)

(C) Elongation factor

(D) Single strand binding proteins

67. Following are water-soluble radical trapping anti-oxidants, except :

(A) Ascorbate

(B) Uric acid

(C) Carotenes

(D) Plant polyphenols

68. Which one is the wrong statement regarding the role of tumor suppressor gene to cause tumor ?

(A) Both alleles must be affected

(B) Gain of function of a protein

(C) Mutation present in germ cell or in somatic cell

(D) Strong tissue preference

69. All are oncogenes, except :

(A) Ras

(B) Myc

(C) RB

(D) Src

70. Following are principal buffers of extracellular fluid except :

(A) Bicarbonate buffer

(B) Hemoglobin buffer

(C) Phosphate buffer

(D) Protein buffer

71. In Hartnup's disease Pellagra like symptoms are observed due to the impairment of absorption of the following amino acid :

(A) Tyrosine

(B) Tryptophan

(C) Phenyl alanine

(D) Methionine

72. Oxygen Dissociation curve shifts to right due to :

(A) Drop in 2, 3-bisphospho-glycerate

(B) Increase in hydrogen ion concentration

(C) Decrease in pCO_2 in blood

(D) Decrease in chloride concentration in blood

73. Creatinine Clearance is decreased in :

(A) Acute tubular necrosis

(B) Acute Glomerulonephritis

(C) Hypertension

(D) mMyopathies

74. Porphyria with autosomal recessive inheritance is :

(A) Intermittent porphyria

(B) Congenital Erythropoietic Porphyria

(C) Protoporphyria

(D) Hereditary Coproporphyria

75. Secretion of gastric HCl is stimulated by :

(A) Secretin

(B) Pancreozymin

(C) Histamine

(D) Somatostatin

76. All are true about complement system, except :

(A) It resembles blood coagulation system like a cascade

(B) The complement factors are not heat labile

(C) The system is involved in inflammation, cell lysis and clearance of Ag-Ab complexes

(D) Deficiency of various components cause complement deficiency disorders

77. Nitrogenous base in IMP(inosine monophosphate) is :

(A) Xanthine

(B) Hypoxanthine

(C) Insulin

(D) Choline

78. Uricemia (raised blood uric acid) is assoiated in all of the following conditions, except :

(A) Lesch-Nyhan syndrome

(B) Psoriasis

(C) von Gierke's diseases

(D) Adenosine deaminase deficiency

79. All are true for Cytochrome p-450, except :

(A) They are hemoproteins

(B) They are found in microsomal fraction of cells in hepaocytes and adrenal gland

(C) NADH and NADPH are involved in its reaction mechanism

(D) Most isoforms of Cytochromo p-450 are inducible

80. Rhodopsin is :

(A) Opsin + 11 cis retinal

(B) Opsin + 11 cis retinol

(C) Opsin + all trans retinal

(D) Opsin + 11 trans retinol

81. β-oxidation of odd-chain fatty acids produces :

(A) Succinyl CoA

(B) Propionyl CoA

(C) Methyl Malonyl CoA

(D) Malonyl CoA

82. Triglycerides are transported from gut to tissue by :

(A) Chylomicrons

(B) VLDL

(C) LDL

(D) HDL

83. Inborn error associated with inherited defect in α-keto acid dehydrogenase complex is :

(A) Alkaptonuria

(B) Maple syrup urine disease

(C) Isovaleric academia

(D) Hartnup's disease

84. Selenium sparing effect is associated with :

(A) Vitamin A

(B) Vitamin C

(C) Vitamin D

(D) Vitamin E

85. Triple helix is found in :

(A) Cystine

(B) Collagen

(C) Pectin

(D) DNA

86. Cyanide is toxic because it :

(A) Inhibits cytochrome C oxidase

(B) Forms cyanmethaemoglobin

(C) Inhibits ATP carrier in mitochondria

(D) Inhibits $Na^+ - K^+$ ATPase

87. Following is not a branched chain amino acid :

(A) Valine

(B) Leucine

(C) Isoleucine

(D) Lysine

88. Hyperbolic oxygen dissociation curve is a property of :

(A) Hemoglobin

(B) Myoglobin

(C) Methemoglobin

(D) Carboxy-hemoglobin

89. Secretion of gastric HCl is stimulated by :

(A) Secretin

(B) Pancreozymin

(C) Histamine

(D) Melatonin

90. Which of the following is not a ketone body ?

(A) Acetoacetate

(B) Acetoacetyl CoA

(C) 3-hydroxybutyrate

(D) Acetone

91. All of the following are mitochondrial reactions except :

(A) Transamination

(B) Ketone body formation

(C) Beta oxidation of fatty acids

(D) Kreb's cycle

92. Absence of carnitine will affect :

(A) Fatty acid synthesis

(B) Fatty acid oxidation

(C) Creatinine formation

(D) Urea synthesis

93. Hexose monophosphate shunt is responsible for production of :

(A) Hexose

(B) NADH

(C) Ribose

(D) ATP

94. Phosphorylation of glycogen synthase :

(A) Increases synthesis of glycogen

(B) Decreases synthesis of glycogen

(C) Has no effect on glucogen synthesis

(D) Inhibits glycogenolysis

95. UDP is a carrier of :

(A) Monosaccharides

(B) Fatty acids

(C) Nucleic acids

(D) Amino acids

96. Chylomicrons are formed within :

(A) Intestinal lumen

(B) Enterocytes

(C) Adipocytes

(D) Lymphatic vessels

97. Activity of amylase cannot convert strach into :

(A) Maltotriose

(B) Limit dextrin

(C) Maltose

(D) Glucose

98. Cytochrome p450 is present in :
(A) Mitochondria
(B) Golgi complex
(C) Endoplasmic reticulum
(D) Lysosome

99. Glucose 6-phosphate deficiency leads to :
(A) Pernicious anemia
(B) Hemolytic anemia
(C) Glycogen storage disease
(D) Galactosemia

100. Maple syrup urine disease results from defect in metabolism of :
(A) Branched chain amino acids
(B) Acidic amino acids
(C) Basic amino acids
(D) Imino acids

101. Blood level of free fatty acids increases the following :
(A) High fat diet
(B) Diet rich in carbohydrates
(C) Starvation
(D) Intake of cholesterol-lowering drugs

102. Lipoic acid is a component of :
(A) Lipoproteins
(B) Fatty acid synthetase complex
(C) Pyruvate dehydrogenase complex
(D) Electron transport chain

103. Thrombus is composed of :
(A) Elastin
(B) Keratin
(C) Fibrin
(D) Collagen

104. DNA double helix is :
(A) Anti-clockwise and right handed
(B) Anti-clockwise and left handed
(C) Clockwise and left handed
(D) Clockwise and right handed

105. Sarcosine is a metabolic product derived from :
(A) Glycine
(B) Methionine
(C) Arginine
(D) Alanine

106. BLAST(Basic Local Alignment Search Tool) is not employed for the analysis of :
(A) Proteins
(B) DNA
(C) RNA
(D) Lippids

107. Sequencing of the first human genome was completed in :
(A) 2003
(B) 2004
(C) 2001
(D) 2007

108. Which of the following organ is not calcium metabolism ?

(A) Kidney

(B) Gut

(C) Pancreas

(D) Bone

109. Which class of MHC antigen is primarily expressed on B lymphocytes ?

(A) I

(B) II

(C) III

(D) All of the above

110. Deamination of cytosine produces :

(A) Uracil

(B) Inosine

(C) Thymine

(D) Adenine

111. Which amino acid is most likely to be found in the interior of a protein ?

(A) Glutamic Acid

(B) Lysine

(C) Histidine

(D) Leucine

112. Which of the following is responsible for Alzheimer's disease ?

(A) PrP_{sc} Protein

(B) PrP_{c} Protein

(C) Amyloid β

(D) Parkin

113. Which of the following is responsible for Prion disease ?

(A) PrP_{sc} Protein

(B) PrP_{c} Protein

(C) Amyloid β

(D) Parkin

114. Which of the following DNA mutations results in insertion of an inappropriate stop codon ?

(A) Frameshift mutation

(B) Nonsence mutation

(C) Missense mutation

(D) Silent mutation

115. Alpha-linolenic acid is :

(A) Omega-3 fatty acid

(B) Omega-6 fatty acid

(C) Saturated fatty acid

(D) Trans fatty acid

116. Which of these promotes class-switching of antibodies ?

(A) Interferon Gamma

(B) Tumour Necrosis Factor

(C) Interleukin 1

(D) Interleukin 4

117. Which of these is marker for B cells ?

(A) CD59

(B) CD19

(C) CD28

(D) CD25

118. Gamma-linolenic acid is :

(A) Omega-3 fatty acid

(B) Omega-6 fatty acid

(C) Saturated fatty acid

(D) Trans fatty acid

119. Cytochrome p-450 is located in :

(A) Endoplasmic reticulum

(B) Golgi complex

(C) Mitochondria

(D) Lysosomes

120. Number of ribosomal RNAs in eukaryotes is :

(A) 3

(B) 4

(C) 5

(D) 6

121. Inosinic acid is the biological precursor of :

(A) Cytosine and Uric acid

(B) Adenylic acid and Guanylic acid

(C) Orotic acid and Uridylic acid

(D) Creatinine and Thymidine

122. Which of the following substance is responsible for carcinoid syndrome ?

(A) Tryptamine

(B) Serotonin

(C) Tyramine

(D) Histamine

123. All are true about phenylketonuria except :

(A) Deficiency of Phenylalanine hydroxylase

(B) Mental retardation

(C) Increased urinary excretion of homogentistic acid

(D) Increased formation of phenylacetylglutamine

124. All of the following tissues are capable of using ketone bodies except :

(A) Brain

(B) Renal cortex

(C) Red blood cells

(D) Cardiac Muscle

125. The lipoprotein with fastest electrophoretic mobility and lowest triglyceride content is :

(A) VLDL

(B) IDL

(C) LDL

(D) HDL

126. Characteristic biochemical finding in Wolman's disease is :

(A) Agammaglobulenemia

(B) Hypercholesterolemia

(C) Hyperglycinemia

(D) Decrease in ceruloplasmin

127. Ascorbic acid is required for the reaction catalyzed by :

(A) Hydrolase

(B) Glycosylase

(C) Hydroxylase

(D) Dehydrogenase

128. If a person had cheilosis, you might suspect a deficiency of :

(A) Niacin

(B) Riboflavin

(C) Viatmin C

(D) Thiamin

129. Golgi complex is responsible for :

(A) Synthesis of proteins

(B) Modification of proteins

(C) Degradation of proteins

(D) Ubiquitination of proteins

130. LDH has the following number of isoenzymes :

(A) 3

(B) 4

(C) 5

(D) 6

131. Which one of the following RNA contains pseudouridine ?

(A) tRNA

(B) mRNA

(C) rRNA

(D) 16S RNA

132. Hemolytic anemia is patients taking anti-malarial drug primaquine can be attributable to the deficiency of :

(A) Glycogen phoshorylase

(B) Glyceraldehyde 3-phosphate hydrogenase

(C) Glucose 6-phosphate dehydrogenase

(D) Glucose 6-phosphatase

133. Fetal blood has higher affinity for oxygen than adult blood because :

(A) HbF has decreased affinity for 2, 3-BPG

(B) HbF has increased affinity for 2, 3-BPG

(C) HbA_2 appears early in fetal life

(D) Iron remains in ferric form in HbF

134. Therapeutic use of streptokinase is based on its :

(A) Antibacterial activity

(B) Fibrin polymerizing acitvity

(C) Fibrinolytic acitivity

(D) Protein phosphorylating activity

135. Aspirin inhibits platelet aggregation by inhibition of :

(A) Coagulation pathway

(B) Phospholipase C activity

(C) Lipooxygenase activity

(D) Cyclooxygenase activity

136. Pellagra is the manifestation of all the following conditions, except :

(A) Thiamine deficiency

(B) Pyridoxal deficiency

(C) Carcinoid syndrome

(D) Tryptophan deficiency

137. The metal present in Vitamin B_{12} is :

(A) Copper

(B) Cobalt

(C) Chromium

(D) Zinc

138. Which one of the following is not synthesized from tyrosine ?

(A) Triiodothyronine

(B) Serotonin

(C) Epinephrine

(D) Dopamine

139. Which one of the following is a hemoprotein ?

(A) Ferredoxin

(B) Adrenodoxin

(C) Cytochrome

(D) Ferritin

140. Which one of the following statements about glycated hemoglobin (HBA1c) is not true ?

(A) Its formation is reversible

(B) It is used for the assessement of long term glycemic control

(C) HBA1c can be assayed by HPLC method

(D) In reflects glycemic history of preceding 2-3 months

141. Hopkins-Cole test is performed on proteins to detect the presence of :

(A) Peptide bond

(B) Imidazole group

(C) Indole group

(D) Guanidino group

142. Which one of the following vitamins is considered as a hormone ?

(A) Vitamin K

(B) Vitamin B_{12}

(C) Vitamin C

(D) Vitamin D

143. All of the following are regulatory enzymes of gluconeogenesis, except :

(A) Glucokinase

(B) Pyruvate carboxylase

(C) Glucose 6-phosphatase

(D) Phosphoenolpyruvate carboxykinase

144. The glycosaminoglycan that serves as an anticoagulant :

(A) Heparin

(B) Hyaluronic acid

(C) Chondroitin sulfate

(D) Dermatan sulfate

145. Synthesis of 2, 3-bisphosphoglycerate occurs in the tissue namely :
(A) Liver
(B) Kidney
(C) Erythrocytes
(D) Brain

146. The hormone that is hypoglycemic :
(A) Insulin
(B) Epinephrine
(C) Glucagon
(D) Thyroxine

147. The blotting technique used for the identification of DNA is :
(A) Northern blot
(B) Southern blot
(C) Western blot
(D) South-Western blot

148. The synthesis of urea occurs in :
(A) Kidney
(B) Liver
(C) Muscle
(D) Brain

149. The base that is never found in genetic code :
(A) Adenine
(B) Guanine
(C) Thymine
(D) Cytosine

150. The non-protein compound which can have enzymatic activity is :
(A) DNA
(B) RNA
(C) Lipids
(D) Carbohydrates

151. The functionally active form of Vitamin – D is :
(A) Cholecalciferol
(B) Ergocalciferol
(C) Dehydrocholesterol
(D) Calcitriol

152. Name the immunoglobin involved in body allergic reactions :
(A) IgA
(B) IgE
(C) IgD
(D) IgM

153. The patients of sickle cell anemia are resistant to :
(A) Filaria
(B) Malaria
(C) Diabetes
(D) Trypanosomiasis

154. The nitrogenous base present in lecithin is :
(A) Choline
(B) Ethanolamine
(C) Inositol
(D) Serine

155. Fatty acids enter mitochondrial with the help of :
(A) Creatine
(B) Carnitine
(C) Clathrin
(D) Biotin

156. Rotenone is an inhibitor of :

(A) Complex I

(B) Complex II

(C) Complex III

(D) Complex IV

157. Oligomycin is an inhibitor of :

(A) Adenylate cyclase

(B) Phosphodiesterase

(C) ATPase

(D) ATP synthase

158. Plasma protein that binds free heme is :

(A) Albumin

(B) Haptoglobin

(C) Hemopexin

(D) Transferrin

159. Acetyl CoA carboxylase is located in :

(A) Nucleus

(B) Lysosome

(C) Cytosol

(D) Mitochondria

160. Melatonin is synthesized from :

(A) Tryptophan

(B) Tyrosine

(C) Phenylalanine

(D) Histidine

161. An example of a tumour suppressor gene is :

(A) myc

(B) fos

(C) ras

(D) Rb

162. Vitamin B12 acts as co-enzyme to which one of the following enzyme ?

(A) Isocitrate dehydrogenase

(B) Homocysteine methyl-transferase

(C) Glycogen synthase

(D) Glucose-6-phosphate dehydro-genase

163. A segment of a eukaryotic gene that is not represented in the mature messenger RNA is known as :

(A) Intron

(B) Exon

(C) Plasmid

(D) TATA Box

164. Which of the following group of proteins assist in the folding of other proteins ?

(A) Proteases

(B) Proteasomes

(C) Templates

(D) Chaperones

165. Proteins targeted for destruction in eukaryotes are covalently linked to :

(A) Clathrin

(B) Pepsin

(C) Laminin

(D) Ubiquitin

166. Which one of the following is a membrane bound enzyme that catalyzes the formation of cyclic AMP from ATP ?

(A) Tyrosine Kinase

(B) Polymerase

(C) ATP synthase

(D) Adenylate cyclase

167. Which of the following elements influences body's ability to handle oxidative stress ?

(A) Calcium

(B) Iron

(C) Potassium

(D) Selenium

168. Alpha helix and beta pleated sheet are the examples of :

(A) Primary structure

(B) Secondary structure

(C) Tertiary structure

(D) Quaternary structure

169. The buffering capacity of a buffer is maximum at pH equal to :

(A) 0.5

(B) pKa

(C) pKa + 1

(D) 2pKa

170. All is true about glutathione except :

(A) It is a tripeptide

(B) It converts hemoglobin to methemoglobin

(C) It conjugates xenobiotics

(D) It scavenges free radicals and superoxide ions

171. The following separation technique depends on the molecular size of the protein :

(A) Thin-layer chromatography

(B) Isoelectric focusing

(C) Gel Filtration chromatography

(D) Chromatography on a diethylaminoethyl (DEAE) cellulose column

172. A competitive inhibitor of an enzyme :

(A) Increases Km without affecting Vmax

(B) Decreases Km without affecting Vmax

(C) Increases Vmax without affecting Km

(D) Decreases both Vmax and Km

173. Which of the following enzyme is stable at acid pH ?

(A) Pepsin

(B) Trypsin

(C) Chymotrypsin

(D) Carboxypeptidase

174. Dinitrophenol causes :

(A) Inhibition of ATP synthase

(B) Inhibition of electron transport

(C) Uncoupling of oxidation and phosphorylation

(D) Accumulation of ATP

175. Phenylalanine is the precursor of the following molecules, except :

(A) Tyrosine

(B) Epinephrine

(C) Thyroxin

(D) Melatonin

176. Sources of the nitrogen in the urea cycle are :

(A) Aspartate and ammonia

(B) Glutamate and ammonia

(C) Arginine and ammonia

(D) Uric acid and ammonia

177. If urine sample darkens on the standing, the most likely condition is :

(A) Phenylketonuria

(B) Alkaptonuria

(C) Maple syrup urine disease

(D) Cystinuria

178. Pyruvate can be converted directly into all the following except :

(A) Phosphoenol pyruvate

(B) Alanine

(C) Acetyl CoA

(D) Lactate

179. Fluoride, used in the collection of blood sample for the glucose estimation, inhibits the enzyme :

(A) Glucokinase

(B) Hexokinase

(C) Enolase

(D) Glucose-6-phosphatase

180. Which one of the following RNA has abnormal purine bases ?

(A) tRNA

(B) mRNA

(C) rRNA

(D) 16S RNA

181. Action of Nitric oxide is mediated through :

(A) cGMP

(B) cAMP

(C) Ca^{++}

(D) Diacylglycerol

182. The amino acid carboxylated by Vitamin K is :

(A) Aspartate

(B) Glutamate

(C) Histidine

(D) Proline

183. BRCA-2 gene associated with both male and female breast cancer is located to the chromosome :

(A) 17

(B) 11

(C) 13

(D) 5

184. All are true about G-protein coupled receptors except :

(A) G-protein coupled receptors are largest superfamily of cell surface receptors

(B) They typically have six helices that transverse the membrane

(C) G protein act as inhibitory and excitatory because of difference in alpha sub-unit

(D) The function of GPCR is to transduce signals that induce a cellular response to the environment

185. Which one of the following enzymes is absent in alkaptonuria ?

(A) Homogentisic acid oxidase

(B) Tyrosine transaminase

(C) Tryptophan hydroxylase

(D) Phenylalanine decarboxylase

186. An increased anion gap is associated with :

(A) Diabetic ketoacidosis

(B) Metabolic alkalosis

(C) Respiratory acidosis

(D) Respiratory alkalosis

187. All of the following are constituents of ganglioside molecule except :

(A) Glycerol

(B) Sialic acids

(C) Hexose sugar

(D) Sphingosine

188. The following statements are all true for arachidonic acid except :

(A) Can be synthesized from linoleic acid

(B) It is a 20 carbon fatty acid with five double bonds

(C) It is a precursor of PGI_2

(D) It is a precursor of TxA_2

189. Which of the following statements is true for immunoglobulins ?

(A) Half-life of IgG is shorter than IgA and IgM

(B) Light chains determine the class of immunoglobulins

(C) Predominant immunoglobulin in respiratory secretions is IgA

(D) IgA crosses placental barrier

190. When [S] is equal to Km which of the following conditions exists ?

(A) Half of the enzyme molecules are bound to substrate

(B) The velocity of the reaction is equal to Vmax

(C) The velocity of the reaction is independent of substrate concentration

(D) Enzyme is completely saturated with substrate

191. Which of the following oxidation-reduction systems has highest redox-potential ?

(A) Fe^{+3} cytochrome b/Fe^{+2}

(B) Fe^{+3} cytochrome a/Fe^{+2}

(C) Fumarate/succinate

(D) NAD^{+}/NADH

192. Oxidation of which molecule in the body yields the maximum calories per gram ?

(A) Glucose

(B) Glycogen

(C) Animal protein

(D) Triglyceride

193. The intake of which food stuff results in the greatest SDA ?

(A) Carbohydrates

(B) Lipids

(C) Proteins

(D) Vitamins

194. Elongation of peptide chain involves the following molecules except :

(A) mRNA

(B) GTP

(C) Formylmethionyl tRNA

(D) Tu, Ts and G factors

195. The Rho factor is involved in :

(A) Increase in the rate of RNA synthesis

(B) Binding of catabolite repressor to promoter region

(C) Proper termination of transcription

(D) Proper initiation of transcription

196. Amanitin, the mushroom poison, inhibits :

(A) Glycoprotein synthesis

(B) ATP synthesis

(C) DNA synthesis

(D) mRNA synthesis

197. How many high energy phosphate bond equivalents are required for amino acid activation for protein synthesis ?

(A) One

(B) Two

(C) Three

(D) Four

198. Cyclic AMP acts as a second messenger for all the hormones below, except :

(A) FSH

(B) Epinephrine

(C) Glucagon

(D) Estrogen

199. Which of the following laboratory tests will be useful in patients of primary hypothyroidism ?

(A) Estimation of T3

(B) Estimation of T4

(C) Estimation of TBG

(D) Detection of auto-antibodies

200. Following statements regarding insulin are all correct except :

(A) Induces glucokinase activity

(B) Inhibits acetyl CoA carboxylase

(C) Converts glycogen phosphorylase to inactive form

(D) Stimulates fatty acid synthase activity

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