



राजस्थान लोक सेवा आयोग  
Rajasthan Public Service Commission

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सत्यमेव जयते

**Ques. Paper : Assistant Professor - BioChemistry**

Mode of Exam: Online  
Date of Exam: 13-07-2015  
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No of Questions: 100

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Ques # :1

**The product of tryptophan metabolism which is known to induce sleep is**

- 1) serotonin
  - 2) melanin
  - 3) melatonin
  - 4) dopamine
- 

Ques # :2

**Wernicke-korsackoff syndrome may occur due to**

- 1) deficiency of G6PD
  - 2) defective transketolase
  - 3) Pyruvate kinase
  - 4) Hexokinase
- 

Ques # :3

**Mucopolysaccharidoses are inherited lysosomal storage disease. They are caused by:**

- 1) An increased rate of synthesis of carbohydrate component of proteoglycans
  - 2) The synthesis of polysaccharides with an altered structure
  - 3) An insufficient amount of proteolytic enzymes
  - 4) Defects in the degradation of GAGs in proteoglycans
-

Ques # :4

**Respiratory distress syndrome in premature infants is due to the deficiency of:**

- 1) Plasmalogen
  - 2) Dipalmitoyl lecithin
  - 3) Cardiolipin
  - 4) Cephalin
- 

Ques # :5

**Virilization is caused by the deficiency of which of the hydroxylase**

- 1) 17-hydroxylase
  - 2) 11-hydroxylase
  - 3) 21-hydroxylase
  - 4) 22-hydroxylase
- 

Ques # :6

**Which of the following lipoprotein particles are most likely responsible for the milky appearance of the plasma**

- 1) Chylomicrones
  - 2) Very-low density lipoproteins
  - 3) intermediate density lipoproteins
  - 4) low-density lipoproteins
- 

Ques # :7

**The following nucleoside is used in the treatment of oratic aciduria**

- 1) Adenosine
  - 2) Uridine
  - 3) Guanosine
  - 4) Thymidine
- 

Ques # :8

**which one of the following enzymes is used as an anticancer drug**

- 1) Urokinase
  - 2) Asparaginase
  - 3) Streptokinase
  - 4) papain
- 

Ques # :9

**All the following enzymes complexes of respiratory chain act as a proton pumps except**

- 1) Complex-I
  - 2) Complex-IV
  - 3) Complex-II
  - 4) Complex-III
- 

Ques # :10

**In rhodopsin, vitamin-A is in form of:**

- 1) All-trans-retinal
  - 2) 11-cis-retinol
  - 3) 11-cis-retinal
  - 4) All-trans-retinol
- 

Ques # :11

**Vitamin-C is essential for the post-translational modification of the following amino acid in collagen**

- 1) Proline and Lysine
  - 2) Histidine and Methionine
  - 3) Proline and Cysteine
  - 4) Lysine and Arginine
- 

Ques # :12

**Ingestion of sodium benzoate in man result in an increase in urinary excretion of :**

- 1) Phenyl pyruvic acid
  - 2) glyoxalic acid
  - 3) Oxalic acid
  - 4) Hippuric acid
- 

Ques # :13

**The limiting amino acid in rice and wheat protein are:**

- 1) Cysteine, Methionine
  - 2) Arginine, Histidine
  - 3) Aspartate, glutamate
  - 4) Lysine, Threonine
- 

Ques # :14

**Which of the following proteins provide tyrosine residues for iodination during thyroid hormone synthesis:**

- 1) Thyroglobulin
  - 2) Thyroid binding globulin
  - 3) Thyroid binding prealbumin
  - 4) all of the above
- 

Ques # :15

**Following statements regarding insulin are correct except:**

- 1) induces glucokinase activity
  - 2) inhibition of acetyl-CoA carboxylase
  - 3) converts glycogen phosphorylase in activity form
  - 4) stimulates fatty acid synthase activity
- 

Ques # :16

**What is untrue of steroid hormone**

- 1) steroid receptor complex enters nucleus
  - 2) synthesized from cholesterol
  - 3) binds to specific receptor protein in cytosol
  - 4) stimulates adenyl cyclase activity
- 

Ques # :17

**Many antimicrobials inhibit protein translation. Which of the following antimicrobials is correctly paired with its mechanism of action**

- 1) Tetracyclines inhibit peptidyltransferase
  - 2) Diphtheria toxin binds to the 30S ribosomal subunit
  - 3) Puromycin inactivates EF-2
  - 4) Erythromycin binds to the 50S ribosomal subunit
- 

Ques # :18

**which of the following is the basis for the intestine specific expression of apoprotein B-48**

- 1) DNA rearrangement and loss
  - 2) RNA editing
  - 3) RNA alternative splicing
  - 4) DNA transposition
- 

Ques # :19

**Which of the following is best described as being trans-acting**

- 1) CAP site
- 2) Operator

- 3) Promoter
  - 4) Repressor
- 

Ques # :20

**The DNA polymerase used in the polymerase chain reaction is derived from the following bacteria**

- 1) Haemophilus aegypticus
  - 2) Thermus aquaticus
  - 3) Escherichia coli
  - 4) Haemophilus influenzae
- 

Ques # :21

**The first human protein produced by recombinant technology**

- 1) Casein
  - 2) Albumin
  - 3) Insulin
  - 4) Growth hormone
- 

Ques # :22

**The mechanism of action of ras protein(a product of ras gene)involves the following signal transduction molecule**

- 1) G-protein
  - 2) ADP
  - 3) cyclic AMP
  - 4) GMP
- 

Ques # :23

**All the following oncogenic viruses are DNA viruses except:**

- 1) human papilloma virus
  - 2) retrovirus B
  - 3) Epstein-Barr virus
  - 4) herpes virus type-I
- 

Ques # :24

**All the following signalling molecules are involved in mediating the action of growth hormone at subcellular level , except**

- 1) signal transducer and activators of transcription
- 2) Mitogen activator protein kinase

- 3) insuline receptor substrate and PI kinase
  - 4) cyclic adenosine monophosphate
- 

Ques # :25

**All of the following sugars are found in glycoprotein, except:**

- 1) fructose
  - 2) fucose
  - 3) xylose
  - 4) galactose
- 

Ques # :26

**Which one of the following is not a source of oxygen radical**

- 1) action of superoxide dismutase
  - 2) activation of macrophages
  - 3) ultraviolet radiation
  - 4) reaction of beta-carotene with oxygen
- 

Ques # :27

**Which of the following is not a component of the cell's suite of damage repair and prevention agents**

- 1) superoxide dismutase
  - 2) Caspase-7
  - 3) Glutathione
  - 4) catalase
- 

Ques # :28

**An L-isomer of monosaccharide formed in human body is**

- 1) L-fructose
  - 2) L-Erythrose
  - 3) L-Xylose
  - 4) L-Xylulose
- 

Ques # :29

**The following is omega-3 polyunsaturated fatty acid**

- 1) Linoleic acid
- 2) Alpha-Linolenic acid
- 3) Gamma-Linolenic acid
- 4) Arachidonic acid

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Ques # :30

**Acylsphingosine is also known as:**

- 1) Sphingomylin
  - 2) Ceramide
  - 3) Cerebroside
  - 4) Sulphatide
- 

Ques # :31

**Ribozymes are:**

- 1) Protein enzymes acting on RNA
  - 2) Catalytic RNAs
  - 3) not substrate specific
  - 4) Enzymes present in viruses
- 

Ques # :32

**Following myocardial infraction, the earliest serum enzymes to rise is:**

- 1) creatine kinase
  - 2) glutamate oxaloacetate transaminase
  - 3) glutamate pyruvate transaminase
  - 4) Lactate dehydrogenase
- 

Ques # :33

**Following myocardial infraction, serum creatine kinase returns to normal in about**

- 1) 24 hrs
  - 2) 3 days
  - 3) 5 days
  - 4) 7 days
- 

Ques # :34

**Cyanide inhibits the following complex of respiratory chain:**

- 1) Complex II
  - 2) Complex III
  - 3) Complex IV
  - 4) Complex V
- 

Ques # :35

**cytochrome oxidase is poisoned by the following except**

- 1) oligomycin
  - 2) hydrogen sulphide
  - 3) carbon monoxide
  - 4) cyanide
- 

Ques # :36

**Large doses of niacin**

- 1) Increase serum cholesterol
  - 2) decrease serum cholesterol
  - 3) Increase serum pyruvate
  - 4) decrease serum pyruvate
- 

Ques # :37

**Sigmoidal oxygen dissociation curve is property of:**

- 1) Haemoglobin
  - 2) carboxyhaemoglobin
  - 3) myoglobin
  - 4) Methaemoglobin
- 

Ques # :38

**Kernicterus can occur in :**

- 1) Crigler-Najjar syndrome type I
  - 2) Crigler-Najjar syndrome type II
  - 3) Rotor's syndrome
  - 4) Gilbert's syndrome
- 

Ques # :39

**Glucose is the only source of energy for:**

- 1) Myocardium
  - 2) Kidneys
  - 3) Erythrocytes
  - 4) Thrombocytes
- 

Ques # :40

**Dipalmitoyl Lecithin acts as:**

- 1) Platelet activating factors
- 2) second messenger for hormones



- 3) lung surfactant
  - 4) anti ketogenic compound
- 

Ques # :41

**Synthesis of prostaglandins is inhibited by:**

- 1) Glucocorticoids
  - 2) Glucagon
  - 3) Insulin
  - 4) Progesterone
- 

Ques # :42

**Aspirin inhibits:**

- 1) Phospholipase C
  - 2) Phospholipase D
  - 3) Cyclo-oxygenase
  - 4) Lipo-oxygenase
- 

Ques # :43

**Hyperuricaemia can occur due to all the following except**

- 1) superactive phosphoribosyl pyrophosphate synthetase
  - 2) hypoxanthine guanine phosphoribosyl transferase deficiency
  - 3) Glucose-6 phosphatase deficiency
  - 4) Uricase deficiency
- 

Ques # :44

**Severe combined immunodeficiency disease (SCID) can result from deficiency**

- 1) Adenosine kinase
  - 2) Adenosine deaminase
  - 3) Adenine phosphorobosyl transferase
  - 4) hypoxanthine guanine phosphorobosyl transferase
- 

Ques # :45

**All the following can occur in Lesch-Nyhan syndrome except**

- 1) Gouty arthritis
  - 2) Uric acid stones
  - 3) Retarded growth
  - 4) Self- mutilating behavior
-

Ques # :46

**Cyclins:**

- 1) are circular DNA double helices
  - 2) are circular polypeptides
  - 3) are protein that regulates cell cycle
  - 4) can undergo phosphorylation and dephosphorylations
- 

Ques # :47

**Rifampicin inhibits:**

- 1) Unbinding of DNA
  - 2) Initiation of replication
  - 3) Initiation of translation
  - 4) Initiation of transcription
- 

Ques # :48

**Peptidyl transferase activity of 50 S ribosomal subunits is inhibited by :**

- 1) Rifampicin
  - 2) Cycloheximide
  - 3) Erythromycin
  - 4) Chloramphenicol
- 

Ques # :49

**Inhibitors of mono amine oxidase prolong the life of :**

- 1) gamma-aminobutyric acid
  - 2) Melanin
  - 3) Melatonin
  - 4) Serotonin
- 

Ques # :50

**An extracellular fluid having a higher concentration of chloride than serum is**

- 1) Bile
  - 2) Sweat
  - 3) Cerebrospinal fluid
  - 4) Pancreatic juice
- 

Ques # :51

**Zinc deficiency occurs commonly in:**

- 1) Acrodermatitis enteropathica
  - 2) Wilson's disease
  - 3) Xeroderma pigmentosum
  - 4) Menkes' disease
- 

Ques # :52

**Autoimmune disease occurs due to**

- 1) impairment of humoral immunity
  - 2) Impairment of cell-mediated immunity
  - 3) Adaptive immune response against self molecules
  - 4) innate immune response against self molecules
- 

Ques # :53

**The antibody that acts against helminths is**

- 1) IgA
  - 2) IgE
  - 3) IgG
  - 4) IgM
- 

Ques # :54

**The limiting amino acid in pulses is:**

- 1) Leucine
  - 2) Lysine
  - 3) Tryptophan
  - 4) Methionine
- 

Ques # :55

**Protein kinase C is activated by:**

- 1) Diacyl glycerol
  - 2) Inositol triphosphate
  - 3) cyclic AMP
  - 4) cyclic GMP
- 

Ques # :56

**Ames' assay is a rapid method for detection of**

- 1) Oncoviruses
- 2) retroviruses
- 3) Chemical carcinogens

4) typhoid

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Ques # :57

**Conversion of procarcinogen into a carcinogen often requires**

- 1) Proteolysis
  - 2) Cytochrome p-450
  - 3) Exposure to ultra-violet radiation
  - 4) Exposure to X-rays
- 

Ques # :58

**Isoelectric pH of Albumin is:**

- 1) 4.7
  - 2) 5.7
  - 3) 6.7
  - 4) 7.7
- 

Ques # :59

**Donor of methyl group for the conversion of norepinephrine to epinephrine is:**

- 1) cAMP
  - 2) GTP
  - 3) CoASH
  - 4) SAM
- 

Ques # :60

**Squalene is a compound having carbon atoms :**

- 1) 20
  - 2) 27
  - 3) 30
  - 4) 37
- 

Ques # :61

**How many amino acids are present in the structure of glucagon hormone?**

- 1) 29
  - 2) 39
  - 3) 49
  - 4) 59
-

Ques # :62

**Major Constituent of honey is:**

- 1) Glucose
  - 2) Galactose
  - 3) Fructose
  - 4) Mannose
- 

Ques # :63

**Acetyl-CoA is oxidized in the TCA cycle and is used in liver and which one more organ/tissue for the biosynthesis of fatty acids and triacylglycerol :**

- 1) Kidneys
  - 2) Muscles
  - 3) Adipose tissue
  - 4) Large intestine
- 

Ques # :64

**LDL-receptor was discovered by Nobel Laureate :**

- 1) Goldstein
  - 2) Linus Pauling
  - 3) Lipman
  - 4) Krbs, Sir Hans Adolf
- 

Ques # :65

**Storage form of iron is :**

- 1) Ferritin
  - 2) Hemoglobin
  - 3) Protoporphyrin IX
  - 4) Heme
- 

Ques # :66

**Insulin receptor is a transmembrane:**

- 1) Heteromonomer
  - 2) Heterodimer
  - 3) Heterotrimer
  - 4) Heterotetramer
- 

Ques # :67

**The human insulin gene is located on the short arm of chromosome No :**

- 1) 7
  - 2) 11
  - 3) 16
  - 4) 24
- 

Ques # :68

**Tendon is composed almost exclusively of :**

- 1) Mucopolysaccharides
  - 2) Prostaglandins
  - 3) Collagen
  - 4) Phospholipids
- 

Ques # :69

**Cushing's syndrome is caused due to the excessive secretion of hormone :**

- 1) Glucocorticoids
  - 2) Androgens
  - 3) Catecholamines
  - 4) ACTH
- 

Ques # :70

**Ubiquinone is known as :**

- 1) Coenzyme A
  - 2) Coenzyme Q
  - 3) Plastoquinone
  - 4) none of the above
- 

Ques # :71

**Tripeptide glutathione is made up of one of the following combination of three amino acids :**

- 1) Glycine, cysteine and glutamic acid
  - 2) Cysteine, alanine and serine
  - 3) Proline, alanine and glycine
  - 4) Threonine, glycine and cystine
- 

Ques # :72

**Rennin is also called as :**

- 1) Chymosin

- 2) Trypsin
  - 3) Chymotrypsin
  - 4) Carboxypeptidase
- 

Ques # :73

**In childhood, an idiopathic hypoglycaemia due to the sensitivity of one of the following amino acids has been reported :**

- 1) Leucine
  - 2) Alanine
  - 3) Glycine
  - 4) Cysteine
- 

Ques # :74

**Disease associated with HLA gene is :**

- 1) Myasthenia gravis
  - 2) Peptic ulcer
  - 3) Pulmonary tuberculosis
  - 4) Jaundice
- 

Ques # :75

**Wernicke - Korsakoff syndrome is found in :**

- 1) Chronic alcoholic cases
  - 2) Chronic banana eaters
  - 3) Chronic smokers
  - 4) Chronic cancer patients
- 

Ques # :76

**Human bile contains:**

- 1) Chenodeoxycholic acid
  - 2) 7- dehydrocholesterol
  - 3) Coprostanol
  - 4) Dihydrocholesterol
- 

Ques # :77

**Peri-mitochondrial space consists of the enzyme:**

- 1) Adenylate cyclase
- 2) Pyruvate dehydrogenase complex
- 3) Citrate synthetase

4) Monoamine Oxidase

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Ques # :78

**Matrix of mitochondria consists of the enzyme(s) :**

- 1) Enzymes of TCA cycle
  - 2) Enzymes of Glycolytic pathway
  - 3) Nucleoside diphosphokinase
  - 4) HMG CoA synthetase
- 

Ques # :79

**Dextrans are highly branched homopolymers of :**

- 1) Glucose units
  - 2) Fructose units.
  - 3) Mannose units
  - 4) Galactose units
- 

Ques # :80

**Pancreatic amylase is :**

- 1) alpha amylase
  - 2) beta amylase
  - 3) gamma amylase
  - 4) delta amylase
- 

Ques # :81

**Iodine number of butter is :**

- 1) 08
  - 2) 18
  - 3) 28
  - 4) 38
- 

Ques # :82

**One of the following is an enzyme activator :**

- 1) Tryptophan
  - 2) Cysteine
  - 3) Arginine
  - 4) Threonine
-



Ques # :83

**Kussmaul breathing is found in :**

- 1) Diabetic coma
  - 2) Severe Heart Attack
  - 3) Malignancy (Cancer)
  - 4) Nephrosis
- 

Ques # :84

**Which compound inhibits the activity of enzyme aconitase in TCA cycle**

- 1) Arsenite
  - 2) Malonate
  - 3) AMP
  - 4) Fluoroacetate
- 

Ques # :85

**Enzyme pyruvate carboxylase converts pyruvate to :**

- 1) Lactic acid
  - 2) Malate
  - 3) Fumarate
  - 4) Oxaloacetate
- 

Ques # :86

**Which of the following reagents would be most useful in determining the N-terminal amino acid of a polypeptide**

- 1) Trypsin
  - 2) Carboxypeptidase
  - 3) Phenylisothiocyanate
  - 4) Cyanogens bromide
- 

Ques # :87

**An uncoupler of oxidative phosphorylation such as dinitrophenol :**

- 1) Inhibits electron transport and ATP synthesis
  - 2) Allow electron transport to proceed without ATP synthesis.
  - 3) Inhibits electron transport without impairment of ATP synthesis
  - 4) Specifically inhibits cyt b
- 

Ques # :88

**Which one of the following reactions is unique to gluconeogenesis ?**

- 1) Lactate → pyruvate
  - 2) Phosphoenolpyruvate → pyruvate
  - 3) Oxaloacetate → phosphoenolpyruvate
  - 4) Glucose 6-phosphate → fructose 6-phosphate
- 

Ques # :89

**Mucopolysaccharidoses are inherited storage diseases caused by :**

- 1) An increased rate of synthesis of proteoglycans
  - 2) The synthesis of polysaccharides with an altered structure
  - 3) Defects in the degradation of proteoglycans
  - 4) The synthesis of abnormally small amounts of protein cores
- 

Ques # :90

**In the absence of the bile salts, glycocholic and taurocholic acid, the intestinal absorption of all of the following would be impeded EXCEPT :**

- 1) Riboflavin
  - 2) Oleic acid
  - 3) Cholesterol
  - 4) Vitamin A
- 

Ques # :91

**A patient has a genetic defect resulting in a deficiency of lipoprotein lipase. After eating a meal containing a large amount of fat, one would expect to see a plasma elevation of :**

- 1) Chylomicrons
  - 2) VLDLs
  - 3) LDLs
  - 4) HDLs
- 

Ques # :92

**In which one of the following tissues is glucose transport into the cell enhanced by insulin?**

- 1) Brain
  - 2) Lens
  - 3) Red blood cells
  - 4) Adipose tissue
- 

Ques # :93

**Which one of the following is elevated in plasma during the absorptive period (compared**

**to the post absorptive state)**

- 1) Glucagon
  - 2) Acetoacetate
  - 3) Chylomicrons
  - 4) Free fatty acids
- 

Ques # :94

**Zona glomerulosa secretes**

- 1) Cortisol
  - 2) Corticosterone
  - 3) Mineralocorticoid
  - 4) Testosterone
- 

Ques # :95

**Treatment by introducing enzyme into somatic cells by gene therapy is given in all of the following except :**

- 1) Adenosine deaminase deficiency
  - 2) Phenylketonuria
  - 3) Cystic fibrosis
  - 4) Familial hypercholesterolemia
- 

Ques # :96

**Phenyl pyruvic acid in urine is detected by :**

- 1) Guaic acid test
  - 2) Benzidine test
  - 3) Ferric chloride test
  - 4) Guthrie's test
- 

Ques # :97

**Dietary changes are not required in :**

- 1) Hemochromatosis
  - 2) Lactose intolerance
  - 3) Wilsons disease
  - 4) Phenylketonuria
- 

Ques # :98

**In 100 ml of blood having normal albumin concentration, the maximum quantity of bilirubin that can be bound to high affinity site of albumin is about :**