PU M Sc Bio Chemistry and Molecular Biology

1 of 100
100 PU_2015_368
The chromosomes responsible for characteristics other than sex are known by which of the following terms?

- ribosomes
- lysosomes
- spermatocytes
- autosomes

2 of 100
121 PU_2015_368
Eukaryotic cells with DNA damage often cease progression through the cell cycle until the damage is repaired. This type of control over the cell cycle is referred to as:-

- checkpoint control
- proteosome control
- anticyclin control
- damage control

3 of 100
127 PU_2015_368
Mucopolysaccharides are also known as:-

- Glycoproteins
- Mucoproteins
- Homopolysaccharides
- Glycosaminoglycans

4 of 100
201 PU_2015_368
Essential fatty acids are the precursors for:-

- Phosphadidate
- Platelet activating factor
- Cardiolipin
- Arachidonate

5 of 100
179 PU_2015_368
Whenever the pathogenic microflora establishes in the body, the normal microflora in our body:-

- remains unaffected
- no correlation between the microflora

- Decreases
- Increases

6 of 100

122 PU_2015_368

Transcription initiation can be determined by:-

- Foot printing
- Nick Translation
- Primer Extension
- Northern Blotting

7 of 100

204 PU_2015_368

Ovule is attached to placenta by a slender stalk called:-

- Petiole
- Pedicel
- Placenta
- Funicle

8 of 100

103 PU_2015_368

Into which of the following acids is glucose broken down in the first stage of carbohydrate metabolism?

- citric acid
- pyruvic acid
- hydrochloric acid
- lactic acid

9 of 100

147 PU_2015_368

After formation of the initiation complex in eukaryotes:-

- Poly-A tail is split off
- Methionyl tRNA occupies the A site on the ribosome
- 7-Methylguanosine triphosphate cap is split off
- None of the above

10 of 100

178 PU_2015_368

Cyclins and cyclin dependent kinases are involved in the regulation of:-

- membrane circulation via exocytosis and endocytosis
- circadian rhythms

- cell-cycle
- synthesis of cAMP

11 of 100
213 PU_2015_368
Molting is caused by the hormone:-

- Alloecydysone
- Morpisone
- Phenoxyecdysone
- Hydroxyecdysone

12 of 100
106 PU_2015_368
One-celled algae enclosed in minute two-part silic shells are called:-

- diatoms
- dinoflagellates
- annelids
- coelenterates

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211 PU_2015_368
A specific inhibitor of Succinate dehydrogenase is:-

- Cyanide
- Citrate
- Arsenate
- Malonate

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185 PU_2015_368
Examples for triple antigen vaccines included in the immunization schedule of newborns are:-

- MMR and BCG
- BCG and OPV
- MMR and OPV
- MMR and DPT

15 of 100
137 PU_2015_368
From the pentapeptide, phe-ala-leu-lys-arg, phenylalanine residue is split off by:-

- Trypsin
- Carboxypeptidase

- Aminopeptidase
- Chymotrypsin

16 of 100
105 PU_2015_368
In the first stage of photosynthesis, light energy is used to:-
- move water molecules
- produce carbohydrates
- split water
- denature chlorophyll

17 of 100
163 PU_2015_368
Fight, fright and flight reactions during emergency are brought about by:-
- Pituitary
- parasympathetic nervous system
- sympathetic nervous system
- central nervous system

18 of 100
202 PU_2015_368
Insulin promotes:-
- Ketogenesis
- Lipolysis
- Gluconeogenesis
- Fatty acid biosynthesis

19 of 100
145 PU_2015_368
Hem synthetase is congenitally deficient in:-
- Hereditary coproporphyria
- Protoporphyria
- Variegate porphyria
- Congenital erythropoietic porphyria

20 of 100
186 PU_2015_368
Because penicillin prevents peptidoglycan synthesis, it is more effective on:-
- Gram negative bacteria
- Gram positive bacteria

- Mycobacterium
- Microsporum

21 of 100

101 PU_2015_368

Each of the following is a cell organelle except one. Which one of these is NOT a cell organelle?

- mitochondrion
- lysosome
- cytoplasm
- endoplasmic reticulum

22 of 100

123 PU_2015_368

The class of antibiotics known as the quinolones is bactericidal. Its mode of action on growing bacteria is thought to be:-

- Inhibition of DNA gyrase
- Inactivation of penicillin-binding protein II
- Prevention of the cross-linking of glycine
- Inhibition of β-lactamase

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144 PU_2015_368

C1 component of the classical complement pathway is made up of:-

- Complements 1q and 1s
- Complements 1r and 1s
- Complements 1q, 1r and 1s
- Complements 1q and 1r

24 of 100

210 PU_2015_368

Thromboxanes are involved in:-

- Platelet formation
- Uterine contraction
- Mucin secretion
- Platelet aggregation

25 of 100

124 PU_2015_368

The first DNA molecule to be completely sequenced was:-

- SV40 virus

- bacteriophage Φ X174
- human mitochondrial genome
- *E. coli*

26 of 100

214 PU_2015_368

The mitochondrial Superoxide dismutase contains:-

- $Mg+^{2}$
- $Co+^{2}$
- $Zn+^{2}$
- $Mn+^{2}$

27 of 100

129 PU_2015_368

Which of these connective tissue types has proteoglycans in its matrix?

- Bone
- Ligaments
- Tendons
- Cartilage

28 of 100

109 PU_2015_368

Which of the following is not an arachnid?

- black widow spider
- tick
- lobster
- scorpion

29 of 100

146 PU_2015_368

Enhancer elements:-

- Are present between promoters and the structural genes
- Are *trans*-acting factors
- Encode specific enhancer proteins
- Increase the expression of some structural genes

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168 PU_2015_368

When both ovaries are removed from rat then which hormone is decreased in blood?

- estrogen

- gonadotropin releasing factor
- prolactin
- Oxytocin

31 of 100

203 PU_2015_368

A fatty acid with 14 carbon atoms will undergo how many cycles of β oxidation:-

- 4
- 7
- 5
- 6

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126 PU_2015_368

A homopolysaccharide made up of fructose is:-

- Dextrin
- Glycogen
- Inulin
- Cellulose

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120 PU_2015_368

Consider the average *in vivo* turnover rates for proteins, DNA, and mRNA. Which of the following order best describes the turnover rate from fastest (shortest average lifetime) to slowest (longest average lifetime)?

- mRNA > DNA > proteins
- mRNA > proteins > DNA
- Proteins > mRNA > DNA
- Proteins > DNA > mRNA

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176 PU_2015_368

Primary interactions between antigens and antibodies involve all of the following Except:-

- electrostatic forces
- covalent bonds
- van der Waals forces
- hydrophobic forces

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187 PU_2015_368

When a surgeon conducts a bypass surgery by transplanting a piece of vein from the patient's leg to the same patient's heart, this is:-

- A xenograft
- An autograft
- An allograft
- An isograft

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161 PU_2015_368

Cortisol is the most potent of the neutrally occurring glycocorticoids. They are produced by the cells of:-

A) Zona glomerulosa
B) zona fasiculata
C) zona reticularis

- A only
- A & B
- A, B & C
- B & C

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128 PU_2015_368

Normal blood calcium levels range between:-

- 10.5-12 mg/dL
- 6-8 mg/dL
- 8-10.5 mg/dL
- 1-2 mg/dL

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162 PU_2015_368

Cholera toxin has AB subunits, A_1 subunit enters cytosol to become active, and activates a protein which stimulates adenylate cyclase to produce cAMP, high cAMP levels activate _____ leading to efflux of ions and water from entrocytes causing diarrhea.

- Sodium – glucose cotransporter
- CFTR – cystic fibrosis transmembrane receptor
- PPAR – peroxisome Proliferator Activated Receptor
- adhesion GPCR

39 of 100

164 PU_2015_368

It is the part of forebrain and regulates the pituitary glands and maintains body temperature:-

- Hypothalamus
- thalamus

- Cerebrum
- medulla oblongata

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205 PU_2015_368

Monooxygenases are found in:-

- Microsomes
- Mitochondria
- Crystae
- Nucleus

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143 PU_2015_368

In antibodies, the variable region of light chains has:-

- Two hypervariable regions
- Three hypervariable regions
- One hypervariable region
- Four hypervariable regions

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102 PU_2015_368

When a color blind man marries a woman pure for normal color vision, it is probable that one of the following situations may result. Is it probable that:-

- half the grandsons will be color blind
- all the grandchildren will be color blind
- all the children will be color blind
- only the sons will be colorblind

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212 PU_2015_368

Green fluorescent protein (GFP) is derived from:-

- Aquaria Victoria
- Enterococcus hirae
- Streptococcus pneumonia
- Listeria monocytogenes

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138 PU_2015_368

Suppressor mutations occur in:-

- Structural genes

- Silencer elements
- Promoter genes
- Anticodons

45 of 100
209 PU_2015_368
BRCA-1 is associated with which cancer?

- Thyroid
- Leukemia
- Nerve
- Breast

46 of 100
139 PU_2015_368
The half-life of a protein depends upon its:-

- C-terminus amino acid
- N-terminus amino acid
- Prosthetic group
- Signal sequence

47 of 100
107 PU_2015_368
Osmoregulation is concerned with:-

- ionic regulation
- carbon dioxide regulation
- excretion
- control of the body's water content

48 of 100
148 PU_2015_368
In sticky ends produced by restriction endonucleases:-

- The ends of a double-stranded fragment are overlapping
- The ends of a double-stranded fragment are non-overlapping
- The DNA strands stick to the restriction endonuclease
- The two strands of DNA are joined to each other

49 of 100
136 PU_2015_368
The voltage gated potassium channel opens due to:-

- Change in pH

- Change in electromagnetic field
- Increase in potassium
- Change in protein concentration

50 of 100

188 PU_2015_368

Which of the following pair of diseases is caused by virus?

- Cholera, Tuberculosis
- Elephantiasis, Syphilis
- Trypanosomiasis, giardiasis
- Rabies, mumps

51 of 100

125 PU_2015_368

The SI unit of molar extinction coefficient is:-

- m^2/mol
- M cm
- $M\ cm^{-1}$
- $M^{-1}cm^{-1}$

52 of 100

208 PU_2015_368

Agent affecting translation:-

- Quinolone
- Chloramphenicol
- Streptovaricin B
- Streptovaricin A

53 of 100

206 PU_2015_368

Dr. John Snow, a physician saw the devastating effects and rapid spread of the disease called as:-

- Malaria
- Jaundice
- Cholera
- Flu

54 of 100

167 PU_2015_368

You want to purify a protein by ion – exchange chromatography. But, you did not know the nature of charge on the protein at a certain p^H. Determine the nature of charge of a given protein sequence at p^H 3.0 so that you know whether to purify by cation or anion exchange chromatography.

$-NH_3^+$ - Pro – Tyr –Ser – Gly – Val – Ile – Phe – Tyr – Leu – Glu – Asp – COOH

- no charge
- negative (-) charge
- Positive (+) charge
- cannot be determined

55 of 100

108 PU_2015_368

Which of the following is not found in blood?

- fibrinogen
- glucose
- glycogen
- urea

56 of 100

177 PU_2015_368

Glaucoma is an eye-disease arising from:-

- elongation of eye ball
- stiffness in iris
- increased pressure of fluid in eye ball
- shortening of eye ball

57 of 100

169 PU_2015_368

MSH is secreted by:-

- middle lobe of pituitary
- Anterior lobe of pituitary
- endostyle
- posterior lobe of pituitary

58 of 100

189 PU_2015_368

A light microscope has an objective lens with a magnification of 100x and an ocular lens with a magnification of 10x. What is the total magnification of the image?

- 10x
- 100x
- 1000x
- 400x

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207 PU_2015_368
Jawless fishes belong to the class:-

- Agnathans
- Pandakans
- Branchiostoma
- Osteichthyes

60 of 100
104 PU_2015_368
An individual with three X chromosomes is likely to be:-

- a Turner's individual
- an abnormal female
- a clinically normal female
- a Kleinfelter's individual

61 of 100
244 PU_2015_368
Histones are:-

- Insoluble in water and very dilute acids
- Identical to protamine
- Proteins with high molecular weight
- Proteins rich in lysine and arginine

62 of 100
248 PU_2015_368
What is the general formula for carbohydrates?

- (COOH)
- (C2HO)n
- (CHCHCH)
- (CH2O)n

63 of 100
246 PU_2015_368
A hormone used for detection of pregnancy is:-

- Progesterone
- Estrogen
- Oxytocin
- Chorionic gonadotropin

64 of 100
224 PU_2015_368
Cholesterol is a precursor for:-

- Bile acid
- ATP synthesis
- Bilirubin
- Phospholipid

65 of 100
241 PU_2015_368
Molecular weight of human albumin is about:-

- 54,000
- 90,000
- 69,000
- 156,000

66 of 100
221 PU_2015_368
In Drosophila, sex is determined by:-

- The ratio of X chromosomes to autosomes
- The ratio of Y chromosomes to autosomes
- Environment
- Y chromosome

67 of 100
240 PU_2015_368
The power house of the cell is:-

- Mitochondria
- Nucleus
- Lysosomes
- Cell membrane

68 of 100
243 PU_2015_368
In anaerobic glycolysis, energy yield from each molecule of glucose is:-

- 38 ATP equivalents
- 30 ATP equivalents
- 8 ATP equivalents
- 2 ATP equivalents

69 of 100
220 PU_2015_368
The major function of PTH appears to be the maintenance of a normal level of extracellular fluid:-

- Albumin
- Globulin
- Calcium
- Ferritin

70 of 100
222 PU_2015_368
Stearic acid has:-

- 16 carbon atoms
- One unsaturated bond
- Two unsaturated bond
- 18 carbon atoms

71 of 100
242 PU_2015_368
Vitamin B12 is:-

- Stored in liver
- Stored in RE cells
- Stored in bone marrow
- Not stored in the body

72 of 100
226 PU_2015_368
In normal resting state, most of the blood glucose burnt as fuel in humans is consumed by:-

- Adipose tissue
- Brain
- Liver
- Kidneys

73 of 100
229 PU_2015_368
Immunoglobulins are classified on the basis of their:-

- Type of light chains
- Molecular weight
- Type of heavy chains
- Types of light and heavy chains

74 of 100
247 PU_2015_368
Plants store energy as:-

- Lipids
- Lactose
- Protein
- Starch

75 of 100
249 PU_2015_368
The following air pollutant is responsible for acid rain:-

- CO
- SO_2
- H_2S
- CO_2

76 of 100
225 PU_2015_368
Which of the following hormones is not involved in carbohydrate metabolism?

- Vasopressin
- ACTH
- Insulin
- Glucagon

77 of 100
223 PU_2015_368
Ergosterol is a precursor of:-

- Lanosterol
- Coenzyme A
- Acyl protein
- Vitamin D

78 of 100
228 PU_2015_368
At isoelectric pH, an amino acid exists as:-

- Cation
- Anion
- Zwitterion
- Polar amino acid

79 of 100
245 PU_2015_368
The most rapid method to re synthesise ATP during exercise is through:-

- Tricarboxylic acid cycle (Krebs' cycle)
- Gluconeogenesis
- Phosphocreatine breakdown
- Glycolysis

80 of 100
227 PU_2015_368
Amino acid with a nonpolar side chain is:-

- Serine
- Threonine
- Valine
- Asparagine

81 of 100
278 PU_2015_368
The carbon chain of fatty acids is shortened by 2 carbon atoms at a time. This involves successive reactions catalyzed by 4-enzymes. These acts on the following order:-

- Enoyl-CoA hydrase, β-OH acyl CoA dehydrogenase, acyl CoA dehydrogenase, thiolase,
- Acyl CoA dehydrogenase, enoyl- CoA hydrase, β-OH acyl CoA dehydrogenase, thiolase
- Acetyl CoA dehydrogenase, β-OH acyl CoA dehydrogenase, enoyl hydrase, thiolase
- Acyl CoA dehydrogenase, thiolase, enoyl-CoA hydrase, β-OH acyl CoA dehydrogenase

82 of 100
293 PU_2015_368
The glyoxylate cycle is found in plants and bacteria but not in animals. The lack of this cycle in animals results in the inability to:-

- Synthesize glutamate from malate
- Synthesize oxaloacetate from isocitrate
- Perform gluconeogenesis from fatty acids
- Perform gluconeogenesis from amino acids

83 of 100
265 PU_2015_368
Enzymes that are secreted in their inactive forms are called as:-

- zymogen
- clastogen
- methanogen

- mutagen

84 of 100

291 PU_2015_368

The glycosaminoglycan which does not contain uronic acid is:-

- Keratan sulphate
- Chondroitin sulphate
- Heparan sulphate
- Dermatan sulphate

85 of 100

294 PU_2015_368

This amino acid has a profound effect in the secondary structure of proteins, because when present in the amino acid sequence, it disrupts the α-helix structure:-

- Serine
- Glycine
- Proline
- Alanine

86 of 100

266 PU_2015_368

Enzyme that cuts within a DNA molecule is called:-

- DNA ligase
- DNA methylase
- endonuclease
- exonuclease

87 of 100

279 PU_2015_368

Ligand-gated ion channel receptor is best illustrated with:-

- Insulin receptor
- Erythropoietin type receptor
- Muscarinic acetylcholine receptor
- Nicotinic acetylcholine receptor

88 of 100

264 PU_2015_368

Trypsinogen is converted to trypsin by:-

- proteolytic cleavage
- reduction of a disulfide bond

- binding an essential metal ion
- phosphorylation of amino acid side chain

89 of 100

267 PU_2015_368

An example of a thermostable enzyme is:-

- ribonuclease
- chymotrypsin
- pepsin
- Taq polymerase

90 of 100

290 PU_2015_368

α-D-glucose + 1120 → + 52.50 ← + 190 β- D- glucose.

Changes for glucose above represent:-

- Mutarotation
- Epimerisation
- Optical isomerism
- D and L isomerism

91 of 100

263 PU_2015_368

Which of the following is not a covalent modification?

- dephosphorylation
- activation by divalent cation
- phosphporylation
- proteolytic cleavage

92 of 100

292 PU_2015_368

Both α-helix and β-pleated sheet conformation of proteins were proposed by:-

- Pauling and Corey
- Y.S. Rao
- Waugh and King
- Watson and Crick

93 of 100

282 PU_2015_368

An increase in the osmolality of extracellular compartment will:-

- Stimulate the volume and osmoreceptor and inhibit ADH secretion

- Inhibit ADH secretion
- Cause no change in ADH secretion
- Stimulate ADH secretion

94 of 100

281 PU_2015_368

During strenuous exercise, the NADH formed in the glyceraldehyde 3-phosphate dehydrogenase reaction in skeletal muscle must be reoxidized to NAD+ if glycolysis is going to continue. The most important reaction involved in the reoxidation of NADH in anaerobic conditions is:-

- Dihydroxyacetone phosphate to glycerol 3-phosphate
- Glucose 6 (P) to Phosphogluconate
- Isocitrate to α-ketoglutarate
- Pyruvate to lactate

95 of 100

277 PU_2015_368

Binding of catecholamines to α_2− adrenergic receptors results in:-

- Increases the intracellular concentration of cGMP
- Decreases the intracellular concentration of cGMP
- Decreases the intracellular concentration of cAMP
- Increases the intracellular concentration of cAMP

96 of 100

280 PU_2015_368

The sequence of the redox carrier in respiratory chain is:-

- NAD—FMN—Q—cyt c_1—cyt c—cyt b—cyt $aa_3 \rightarrow O_2$
- FMN—Q—NAD—cyt b—cyt aa_3—cyt c_1— cyt c→ O_2
- NAD—FMN—Q—cyt b—cyt c_1—cyt c—cyt $aa_3 \rightarrow O_2$
- NAD—FMN—Q—cyt b—cyt aa_3—cyt c—cyt $c_1 \rightarrow O_2$

97 of 100

283 PU_2015_368

Which of the following nucleus of hypothalamus is mainly responsible for circadian rhythm?

- ARC
- SON
- SCN
- PVN

98 of 100

295 PU_2015_368

Collagen presents in its structure modified amino acids as hydroxyproline and hydroxylysine. The formation of these amino acids from their precursors, is post-trancriptional, and occurs in enzymatic reactions that require as cofactor the following compound:-

- Ascorbic acid
- Citric Acid
- Folic Acid
- Lipoic acid

99 of 100

268 PU_2015_368

The largest class of enzymes based on the classification by Enzyme Commission is:-

- Lyase
- Oxidoreductase
- Isomerase
- Ligase

100 of 100

276 PU_2015_368

Several thousands of tons of aspirin (acetylsalicilate) are consumed each year all over the world for the relief of headaches, inflammed joint and pain, and in general fever. Also, at low doses it is used in the prevention of heart attacks. The relief caused by aspirin in these conditions is based mainly in aspirin effects on eicosanoid metabolism. Aspirin binds covalently (and so act as an irreversible inhibitor) to this enzyme of eicosanoid metabolism:-

- Phospholipase A_2
- Thromboxane Synthase
- PGH_2 Synthase
- Lipoxygenase

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1 of 100
217 PU_2016_368_E
Which of the following methods for introducing DNA into cells is used only for plants?

- A gene gun
- Electroporation
- Microinjection
- Transformation of competent cells.

2 of 100
101 PU_2016_368_E
Among the following which hormone can induce flowering in short day plant grown under long duration of light:-

- Abscisic acid
- Cytokinin
- Auxin
- Gibberllic acid

3 of 100
164 PU_2016_368_E
Refsum's disease arises due to the accumulation of larger quantities of:-

- phytanic acid
- oxalic acid
- glutamic acid
- maleic acid

4 of 100
193 PU_2016_368_E
Cori cycle is:-

- Synthesis and reuse of glucose
- reuse of glucose
- uptake of glucose
- Synthesis of glucose

5 of 100
129 PU_2016_368_E
The blood pressure is high in:-

- capillaries
- veins
- arteries

- veins of portal system

6 of 100

152 PU_2016_368_E

Which among the following lipoprotein has the highest protein content?

- LDL.
- VLDL.
- HDL.
- chylomicrons

7 of 100

133 PU_2016_368_E

Blood of which of the following animal does not carry O_2

- Earthworm
- Frog
- Lung fish
- Insects

8 of 100

157 PU_2016_368_E

Which of the following phosphoglyceride possesses antigenic properties?

- plasmalogen
- cardiolipin
- lecithin
- phosphatidic acid

9 of 100

124 PU_2016_368_E

Green vegetables are good sources of:-

- vitamins and minerals
- Proteins
- Carbohydrates
- Fats

10 of 100

104 PU_2016_368_E

The beadlike unit of chromatin structure is the:-

- Nucleosome
- Solenoid
- Kinetochore

- Chromatid

11 of 100
169 PU_2016_368_E
Transcobalamin II delivers vitamin B12 to:-

- liver, bone marrow and the gastrointestinal tract
- gastrointestinal tract
- liver
- rapidly proliferating cells in the bone marrow

12 of 100
205 PU_2016_368_E
Pulses are rich in:-

- Tryptophan
- Methionine
- Phenylalanine
- Lysine

13 of 100
100 PU_2016_368_E
Which of the following gene involved in apoptosis?

- apc
- Caspase
- Cyl2
- bxl

14 of 100
165 PU_2016_368_E
Hormonal contraceptives:-

- fertilization
- mensutration
- inhibit ovulation
- inhibit ovulation and fertilization

15 of 100
113 PU_2016_368_E
Which one of the following essential micronutrients is associated with urease enzyme found in higher plants?

- Molybdenum
- Zinc

- Copper
- Nickel

16 of 100

177 PU_2016_368_E

Glycogen synthetase activity is depressed by:-

- Glucose
- Cyclic AMP
- Insulin
- Fructokinase

17 of 100

144 PU_2016_368_E

For which of the following, the units of rate constant and rate of reaction are same?

- 1^{st} order reaction.
- 2^{nd} order reaction.
- zero order reaction.
- 3^{rd} order reaction.

18 of 100

168 PU_2016_368_E

Iron is transported by:-

- cobalophilins
- hepcidin
- Ferritin
- transferrin

19 of 100

105 PU_2016_368_E

Which of the following metabolic process occurs in the mitochondria?

- Cholesterol synthesis
- Fatty acid synthesis
- Glycolysis
- Fatty acid -β oxidation

20 of 100

176 PU_2016_368_E

Glucose absorption may be decreased in:-

- Nephritis
- Oedema

- Rickets
- Osteomalitis

21 of 100
192 PU_2016_368_E
Two sugars differing only in configuration around a single carbon atom is called:-

- Epimers
- Anomers
- Optical isomers
- Stereoisomers

22 of 100
213 PU_2016_368_E
Organotrophic organisms feed on:-

- Inorganic things
- Other living things or their organic produce
- Nonliving things
- Energy from sun light

23 of 100
201 PU_2016_368_E
Which one is the largest organelle of the cytoplasm?

- Mitochondria
- Entoplasmic reticulum
- Golgi apparatus
- Lysosomes

24 of 100
149 PU_2016_368_E
nif genes which encode the nitrogenase complex and other enzymes involve:-

- nitrogen fixation.
- denitrificatrion.
- ammonification.
- nitrification.

25 of 100
140 PU_2016_368_E
The term translation refers to protein synthesis and a polysome is

- the lumen of endoplasmic reticulum
- a complex of mRNA with several ribosomes

- golgi apparatus
- a group of lysosomes

26 of 100
189 PU_2016_368_E
Lambda EMBL4 :-

- Lambda replacement vector which can carry up to 20 Kb of DNA insert size
- Lambda insertion vector which can carry up to 6 Kb of DNA insert size
- Lambda replacement vector which can carry up to 6 Kb of DNA insert size.
- Lambda insertion vector which can carry up to 20 Kb of DNA insert size

27 of 100
181 PU_2016_368_E
In coordinate geometry, the equation of the x-axis is:-

- y = x
- y = 0
- x = 0
- y = 1

28 of 100
200 PU_2016_368_E
Milk is deficient in?

- Vitamin B2
- Vitamin C
- Vitamin K
- Vitamin A

29 of 100
161 PU_2016_368_E
Which of the following vitamin deficiency leads to burning feet syndrome?

- pantothenic acid
- folic acid
- Vitamin B12
- Niacin

30 of 100
160 PU_2016_368_E
Which of the following vitamin's structure resembles monosaccharide in structure?

- Vitamin C
- Vitamin D

- Vitamin A
- Vitamin K

31 of 100

116 PU_2016_368_E

Out of the following matches of oncogenes with the proteins that each specifies, which one is incorrect?

- erbA- thyroid hormone receptor
- ras - guanine-nucleotide binding protein with GTPase activity
- erbB - epidermal growth factor receptor
- fos - platelet-derived growth factor

32 of 100

120 PU_2016_368_E

In which form of DNA, the number of base pairs per helical turn is 10.5?

- Z.
- X.
- A.
- B.

33 of 100

112 PU_2016_368_E

Which of the following is a mismatch between the plant drug and its source?

- Quinine - *Cinchona ledgeriana*
- Codeine - *Papaver somniferum*
- Digitalin - *Artemisia annua*
- Vinblastine - *Catharanthus roseus*

34 of 100

145 PU_2016_368_E

Why does hydroxylation increase the stability of the collagen triple helix?

- it promotes hydrogen bonding with water.
- it increases hydrogen bonding between polypeptide chains.
- it decreases the melting temperature of nascent collagen
- it expands the helix and allows the glycine residues to better fit in the interior.

35 of 100

172 PU_2016_368_E

HDL is synthesized and secreted from :-

- Muscle
- Kidney

- Pancreas
- Liver

36 of 100

184 PU_2016_368_E

During starvation, ketone bodies are used as a fuel by:-

- Brain
- Liver
- Erythrocytes
- All of these

37 of 100

212 PU_2016_368_E

As Prophase-I progresses, the homologous chromosomes form a four-chromatid structure called:-

- Bivalent
- Centrioles
- Sister chromatids
- Crossover

38 of 100

128 PU_2016_368_E

Human eye lens is:-

- Biconvex and can be moved forward
- spherical and can be moved forward
- spherical and cannot be moved forward
- Biconvex and cannot be moved forward

39 of 100

137 PU_2016_368_E

Blood groups are named based on antigens present in:-

- Blood plasma
- Platelet
- W.B.C
- R.B.C

40 of 100

185 PU_2016_368_E

Aspartate amino transferase uses the following for transamination:-

- Glutamic acid and pyruvic acid
- Aspartic acid and pyruvic acid

- Glutamic acid and oxaloacetic acid
- aspartic acid and keto adipic acid

41 of 100
108 PU_2016_368_E
An enzyme showing absolute specificity is:-

- Chymotrypsin
- Hexokinase
- Alkaline Phosphatase
- Urease

42 of 100
196 PU_2016_368_E
The main site of urea synthesis in mammals is:-

- Intestine
- Liver
- Skin
- Kidney

43 of 100
132 PU_2016_368_E
The infective stage of the malarial parasite Plasmodium sp. in man is:-

- Sporozoite
- Merozoite
- Schizont
- Cryptozoite

44 of 100
141 PU_2016_368_E
Bilirubin level increases in the blood when

- liver cells are severely damaged
- secretion of insulin is more
- HIV intrudes the body.
- secretion of glucagon is less

45 of 100
180 PU_2016_368_E
Which of the following is NOT a prime number?

- 21
- 41

- 31
- 11

46 of 100

208 PU_2016_368_E

Molecular formula of cholesterol is:-

- $C_{29}H_{47}OH$
- $C_{27}H_{45}OH$
- $C_{23}H_{41}OH$
- $C_{29}H_{48}OH$

47 of 100

204 PU_2016_368_E

Denaturation of proteins results in:-

- Breakdown of peptide bonds
- Irreversible changes in the molecule
- Disruption of primary structure
- Destruction of hydrogen bonds

48 of 100

109 PU_2016_368_E

During photosynthetic carbon reduction cycle in green leaves, net production of one molecule of glyceraldehyde 3-phosphate requires one of the following combinations of energy equivalents:-

- 6 NADPH and 9 ATP
- 9 NADPH and 6 ATP.
- 2 NADPH and 3 ATP
- 3 NADPH and 9 ATP

49 of 100

125 PU_2016_368_E

Virus mediated transfer of genetic material between one bacterial cell and another is termed as:-

- Transduction
- Nuclear Exchange
- Trasformation
- Conjugation

50 of 100

148 PU_2016_368_E

Each cycle of β-oxidation produces:-

- 1 $FADH_2$, 1 NAD+, and 1 acetyl-CoA.

- 1 $FADH_2$, 1 NADH and 1 acetyl-CoA.
- 1 FAD, 1 NAD+ and 2 CO_2 molecules.
- 1 $FADH_2$, 1 NADH and 2 CO_2 molecules.

51 of 100

197 PU_2016_368_E

Which of the following techniques is used to separate proteins based upon differences in their mass?

- Western blotting
- Dialysis
- SDS-gel Electrophoresis
- Isoelectric focusing

52 of 100

117 PU_2016_368_E

Which of the following pairs of subcellular compartments is likely to have same pH and electrolyte composition?

- Mitochondrial matrix and inter membrane space
- cytosol and lysosomes
- cytosol and endosome
- cytosol and mitochondrial inter membrane space

53 of 100

153 PU_2016_368_E

Proteins tagged with mannose 6-phosphate are transported to:-

- Mitochondrion
- Lysosomey
- Nucleus
- Golgi apparatus

54 of 100

188 PU_2016_368_E

The pUC vectors incorporate a:-

- Gam gene
- MCS in the lac Z sequence
- A cos site
- The purine initiation nucleotide

55 of 100

156 PU_2016_368_E

Which of the following is an essential fatty acid?

- lignoceric acid
- oleic acid
- palmitic acid
- linoleic acid

56 of 100
216 PU_2016_368_E
Anaerobic energy-yielding pathways are called as:-

- Reduction
- Glycolysis
- Fermentaion
- Oxidation

57 of 100
173 PU_2016_368_E
Metabolic disease caused by a defect in one amino acid is known as:-

- Liver fibrosis
- Galactosemia
- Cystic fibrosis
- Cystinuria

58 of 100
121 PU_2016_368_E
Tumor-suppressor genes:-

- Are involved in the cellular response to EGF
- Includes the widely studied myc gene
- Stimulates the binding of GTP
- Encode proteins that prevent binding of cyclins

59 of 100
209 PU_2016_368_E
During each cycle of β-oxidation:-

- Two carbon atoms are removed from the carboxyl end of the fatty acid
- One carbon atom is removed from the methyl end of the fatty acid
- Two carbon atoms are removed from the methyl end of the fatty acid
- One carbon atom is removed from the carboxyl end of the fatty acid

60 of 100
136 PU_2016_368_E
A gene is a section of DNA that codes for a protein and these unique sequences of bases are called:-

- Codons
- Transposons
- Introns
- Exons

61 of 100

252 PU_2016_368_M

In hemolytic jaundice, bilirubin in urine is:-

- Increased very much
- Usually present
- Usually absent
- Very low

62 of 100

257 PU_2016_368_M

It is believed that life evolved with RNA as the genetic material, but RNA has been replaced by DNA in all current cellular life. Which feature of DNA accounts for this?

- Only DNA can form the genetic material of viruses.
- DNA can direct its own replication while RNA cannot.
- DNA is a nucleic acid while RNA is not.
- DNA is more stable than RNA.

63 of 100

244 PU_2016_368_M

Which is an important function of cholesterol in cell membranes?

- It increases the fluidity of the membrane at 37°C
- It stabilizes the structure of mammalian membranes.
- It allows polar substances to pass through the membrane.
- It acts as fluidity barrier in bacterial membranes.

64 of 100

248 PU_2016_368_M

The reaction catalysed by phosphofructokinase:-

- Is inhibited by fructose 2, 6-bisphosphate
- Is activated by high concentrations of ATP and citrate
- Uses fruitose-1-phosphate as substrate
- Is the rate-limiting reaction of the glycolytic pathway

65 of 100

228 PU_2016_368_M

Aequorin is a calcium binding protein (CaBP) isolated from the coelenterate *Aequorea victoria*. Aequorin associated itself with which of the following structural feature:-

- EF hand.
- TIM barrel.
- rossman fold.
- leucine zipper.

66 of 100

256 PU_2016_368_M

Which mineral element controls the activity of Nitrate reductase?

- Fe
- Mo
- Zn
- Ca

67 of 100

221 PU_2016_368_M

During interphase _____ can be seen with a light microscope.

- Nucleosomes
- Chromatin
- Heterochromatin
- Introns

68 of 100

236 PU_2016_368_M

Which of the following mineral nutrient is directly involved in light absorption during photosynthesis :-

- Mg^{2+}
- Mn^{2+}
- Cu^{2+}
- Zn^{2+}

69 of 100

233 PU_2016_368_M

The Bead like structures found in the ultrastructure of eukaryotic chromatin is referred to as

- liposomes
- nucleosomes
- polysomes
- kinetochores

70 of 100

253 PU_2016_368_M
The caloric value of lipids is:-

- 9.0 Kcal/g
- 6.0 Kcal/g
- 15.0 Kcal/g
- 12.0 Kcal/g

71 of 100

229 PU_2016_368_M
Which of the following statements about retinal, the chromophore of rhodopsin, is incorrect?

- in the dark, it is covalently bound to opsin through a Schiff base linkage.
- in the dark, it is present as the 11-cis-retinal isomer.
- it becomes the all-cis isomer after absorbing light.
- the unprotonated Schiff base absorbs maximally at 440 nm and higher.

72 of 100

241 PU_2016_368_M
Phenylalanine ammonia-lyase (PAL) and chalcone synthase (CHS) are involved in biosynthesis of phenolic compounds in plants. Following are some statements regarding the actions of PAL and CHS:-

i) substrates for PAL and CHS are phenylalanine and chalcone, respectively
ii) PAL converts phenylalanine to trans-cinnamic acid
iii) PAL converts phenylalanine to p-coumaric acid
iv) p-coumaroyl-CoA is converted to chalcones by CHS

Which one of the following combination of the above statements is true?

- i) and iii)
- ii) and iv)
- i) and ii)
- ii) and iii)

73 of 100

237 PU_2016_368_M
The most variable stage of cell cycle is:-

- S
- G0
- G2
- G1

74 of 100

240 PU_2016_368_M
Which one of the following statement describes the process of phloem loading?

- Triose phosphate is transported from the chloroplast to cytosol

- Sugars are transported into the sieve elements and companion cells
- Solutes are transported from roots to the shoots
- Sugars are transported from producing cells in the mesophyll to cells in the vicinity of the sieve elements

75 of 100

245 PU_2016_368_M

Fluoride inhibits _____ and arrests glycolysis.

- Aconitase
- Enolase
- Glyceraldehyde-3-phosphate dehydrogenase
- Succinate dehydrogenase

76 of 100

224 PU_2016_368_M

The CO_2 acceptor in c4 plant is:

- ribulose-bis-phosphate
- 3-phosphoglyceric acid
- Outer membrane of chloroplast
- Phosphorenol pyruvate

77 of 100

225 PU_2016_368_M

The Z- DNA helix:-

- Is the most conformation of DNA
- Has fewer base pair turn than B-DNA
- Tends to found at 3'ends of genes
- Is favored by alternate GC base pairs

78 of 100

249 PU_2016_368_M

For glycogenesis, Glucose should be converted to:-

- Sorbitol
- Glucuronic acid
- UDP glucose
- Pyruvic acid

79 of 100

220 PU_2016_368_M

A transition mutation:-

- Results from insertion of one or two bases or base analogs into the DNA chain
- Results from the substitution of one purine for another or of one pyrimidine for another
- Occurs when a purine is substituted for a pyrimidine or vice versa
- Decreases in frequency in the presence of base analogous into the DNA chain

80 of 100

232 PU_2016_368_M

Cyclins and cyclin dependent kinases are proteins involved in regulation of:-

- cell-cycle
- synthesis of cAMP
- circadian rhythms
- membrane circulation via exocytosis and endocytosis

81 of 100

265 PU_2016_368_D

Bronze diabetes is associated with following mineral deposition?

- iron
- selenium
- copper
- magnesium

82 of 100

289 PU_2016_368_D

A nucleoside consists of:-

- Purine or pyrimidine base + sugar
- Purine or pyrimidine base + phosphorous
- Purine + pyrimidine base + sugar + phosphorous
- Nitrogenous base

83 of 100

288 PU_2016_368_D

A cup of strong coffee would be expected to:-

- Decrease the effect of glucagon
- Enhance the effect of epinephrine
- Provide the vitamin nicotinic acid
- Interfere with the synthesis of prostaglandins

84 of 100

272 PU_2016_368_D

Mumps is a disease caused by virus that affects:-

- Parotid glands
- submaxillary lansd
- Sublingual glands
- submandibular glands

85 of 100
293 PU_2016_368_D
The smallest RNA among the following is:-

- rRNA
- tRNA
- hnRNA
- mRNA

86 of 100
296 PU_2016_368_D
Dideoxynucleoside triphosphates ddNTPs) are used in sequencing DNA because:-

- ddNTPs are incorporated very efficiently into DNA by DNA polymerase.
- ddNTPs cannot be incorporated into DNA by DNA polymerase.
- ddNTPs are fluorescent.
- ddNTPs prevent further DNA synthesis once they are incorporated into the DNA sequence.

87 of 100
280 PU_2016_368_D
A cell undergoing meiosis produces four daughter cells, two of which are anuploids, while other two are haploids. This can occur due to:-

- non-disjunction during both first and second meiotic divisions
- non-disjunction during first meiotic division only
- non-disjunction during either first or second meiotic divisions
- non-disjunction during second meiotic division only

88 of 100
264 PU_2016_368_D
Which of the following is natural un-coupler?

- dopamine
- insulin
- thyroxine
- short chain fatty acid

89 of 100
297 PU_2016_368_D

Which of the following microscopy techniques relies on the specimen interfering with the wavelength of light to produce a high contrast image without the need for dyes?

- Fluorescence microscopy
- Phase contrast microscopy
- Conventional bright field light microscopy
- Electron microscopy

90 of 100

286 PU_2016_368_D

Glycogen synthetase activity is depressed by

- Insulin
- Fructokinase
- Glucose
- Cyclic AMP

91 of 100

269 PU_2016_368_D

The radius of the following helix types in proteins follows the order:-

- 3_{10} helix > pi helix > alpha helix.
- alpha helix > 3_{10} helix > pi helix.
- pi helix > alpha helix > 3_{10} helix.
- 3_{10} helix > alpha helix > pi helix.

92 of 100

277 PU_2016_368_D

Light signals for flowering is received by:-

- Apical bud
- Flower bud
- Leaves
- Flower bract

93 of 100

292 PU_2016_368_D

Initiation of protein synthesis begins with binding of:-

- Charging of tRNA with specific amino acid
- 60S ribosomal unit
- 40S ribosomal unit on mRNA
- Attachment of aminoacyl tRNA on mRNA

94 of 100

276 PU_2016_368_D
Which of the following is a typical feature of viruses?

- The ability to replicate independently.
- The ability to synthesize ATP.
- 3000-4000 genes.
- A genome that may be single or double-stranded DNA or RNA.

95 of 100

260 PU_2016_368_D
Holoandric inheritance is shown by:-

- Allosomes
- Autosomes
- X-chromosomes
- Y-chromosomes

96 of 100

261 PU_2016_368_D
The k_m of enzyme is-

- Substrate concentration that gives half-maximum velocity
- One half of the V max
- A dissociation constant
- Substrate concentration that gives max velocity

97 of 100

273 PU_2016_368_D
Barbara McClintock received Nobel prize in 1983 for discovering

- mobile genetic elements or jumping genes
- Reverse transcriptases
- Monoclonal antibodies
- PCR technique

98 of 100

268 PU_2016_368_D
The alpha helix can be called a 3.6_{13} helix. The numbers refer to: -

- the number of turns and diameter of the helix
- the number of residues and the pitch of the helix.
- the number of residues and number of atoms in the helix.
- the number of residues in a turn of the helix and the number of atoms in the hydrogen bond ring.

99 of 100

284 PU_2016_368_D
Excessive intake of ethanol increases the ratio of:-

- $FADH_2$: FAD
- FAD : $FADH_2$
- NADH : NAD^+
- NAD^+ : NADH

100 of 100

281 PU_2016_368_D
Which of the following is NOT an adaptive modification in a xerophytic plant?

- Strongly developed sclerenchyma
- Sparse stomata
- Presence of lacunar tissues
- Sunken stomata

Sr No.	MSc Biochemistry and Molecular Biology
1	Find the missing term in the following series: 3,10,29,66,127…?
Alt1	164
Alt2	187
Alt3	216
Alt4	218

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Flower : Butterfly :: Dirt :?
Alt1	Rats
Alt2	Fly
Alt3	Bugs
Alt4	Sweeper

3	Tiff is to Battle as Frugal is to …….?.....
Alt1	Sprint
Alt2	Vague
Alt3	Miserly
Alt4	Vital

4	Select the lettered pair that has the same relationship as the original pair of words: Expend: Replenish
Alt1	Exhort: Encourage
Alt2	Formant: Rebellion
Alt3	Defect: Rejoin
Alt4	Encroachment: Occupy

5	Choose the set that has the same relationship as in the original: Bone : Skeleton : Nerve
Alt1	House: Door: Window
Alt2	Spoke: Wheel: Handle
Alt3	Retina: Eye: Pupil
Alt4	Snow: Cloud: Ice

6	Spot the defective segment from the following:
Alt1	Only with your help
Alt2	I passed the test
Alt3	though you helped me
Alt4	at the last minute

7	The government proposes to ------- hanging.
Alt1	cancel
Alt2	nullify
Alt3	invalidate

Alt4	abolish

8	The burglar was hit ---------.
Alt1	on head
Alt2	on his head
Alt3	on the head
Alt4	in the head

9	Choose the option closest in meaning to the given word: COGENT
Alt1	consistent
Alt2	acceptable
Alt3	convincing
Alt4	weak

10	Choose the antonymous option you consider the best: PROVIDENT
Alt1	careful
Alt2	worldly
Alt3	prodigal
Alt4	frugal

11	Ravi's brother is 3 years senior to him. His father was 28 years of age when his sister was born while his mother was 26 years of age when he was born. If his sister was 4 years of age when his brother was born, what was the age of Ravi's father and mother respectively when his brother was born ?
Alt1	32 years, 23 years
Alt2	32 years, 29 years
Alt3	35 years, 29 years
Alt4	35 years, 33 years

12	In each of the following questions some statements are followed by two conclusions (i) and (ii). Read the statements carefully and then decide which of the conclsions follow beyond a reasonable doubt. Mark your answer as Statement: All my films are copies. I am happy to inform of the source when I copy – a producer Conclusions: (i) The producer does not make even a single film based on his own idea (ii) The producer copies domestic and foreign films
Alt1	If only conclusion (i) follows
Alt2	If only conclusion (ii) follows
Alt3	If neither conclusion (i) nor (ii) follows
Alt4	If both the conclusions follow

13	3. What value should come in place of question mark (?) in the following number series? 14, 28, 46, ?, 94, 124
Alt1	64
Alt2	68
Alt3	72
Alt4	76

14	In a certain code ADVENTURES is written as TDRESAUVEN. How is SURPRISINGwritten in that code ?
Alt1	IUIPGSRSNR
Alt2	IUINGSSRRP
Alt3	IUIPGSSRNR
Alt4	IRIPGSSNRR

15	Wax is related to Grease in the same way as Milk is related to
Alt1	Drink
Alt2	Ghee
Alt3	Curd
Alt4	Protein

16	The following information is given: Six persons A, B, C, D, E and F are sitting in two rows, three in each. E is not at the end of any row. D is second to the left of F. C, the neighbour of E, is sitting diagonally opposite to D. B is the neighbour of F. After interchanging seat with E, who will be the neighbours of D in the new position ?
Alt1	C and A
Alt2	F and B
Alt3	Only B
Alt4	Only A

17	If 30 students occupy 2/3 of the seats in a classroom, how many students would occupy 4/5 of the seats in the classroom?
Alt1	36
Alt2	32
Alt3	40
Alt4	48

18	Mean of the first 10 odd numbers is
Alt1	10
Alt2	13
Alt3	15
Alt4	9

19	Two numbers are in the ratio 2:3, If 4 be subtracted from each, they are in the ratio 3:5, Find the numbers.

Alt1	16,24
Alt2	20,30
Alt3	0.341666667
Alt4	None

20	It takes 30 seconds to cut the woodlock into 3 pieces.How much time does it takes to cut the same block into 4 pieces?
Alt1	40secs
Alt2	45secs
Alt3	50secs
Alt4	60secs

21	In enzyme kinetics Vmax reflects:-
Alt1	Enzyme substrate complex
Alt2	Substrate concentration
Alt3	Half the substrate concentration
Alt4	The amount of an active enzyme

22	The expression a2 + b2 is equivalent to:-
Alt1	(a - b)(a - b) + 2ab
Alt2	(a + b)(a + b)
Alt3	(a + b)(a - b) - 2ab
Alt4	(a + b)(a - b)

23	Which is true about gap junction?
Alt1	Allows the movement of large molecules across the cell
Alt2	Made up of two subunit of connexones
Alt3	Made up of connexin protein
Alt4	They are occurring inside the cell

24	Production of excessive amount of corticotropin (ACTH) occurs in:-
Alt1	Alport's syndrome
Alt2	Grieg's syndrome
Alt3	Grave's syndrome
Alt4	Cushing's syndrome

25	Which one of the following interaction plays a major role in stabilizing the B-form DNA?
Alt1	Van der Waals's interaction
Alt2	Hydrogen bond
Alt3	Hydrophobic interaction
Alt4	Ionic interaction

26	Megaloblastic anemia is caused by the deficiency of:-
Alt1	Riboflavin
Alt2	Deoxy adenosyl cobalamin
Alt3	Oxycholesterol
Alt4	Carboxy hemoglobin

27	The phenomenon of interchange of functions between related genes are called:-
Alt1	Genetic redundancy
Alt2	Complementation
Alt3	Non-redundancy
Alt4	Genetic interaction

28	he most commonly used molecular tool for phylogenetic analysis involves sequencing of:-
Alt1	Nuclear DNA
Alt2	Ribosomal RNA
Alt3	Mitochondrial RNA
Alt4	Mitochondrial DNA

29	Mullerian Inhibiting Substance (MIS):-
Alt1	inhibit Mullerian duct differentiation
Alt2	Wollfian duct degeneration
Alt3	inhibit mullerian duct and promote wollfian duct growth
Alt4	promote Wollfian duct growth

30	A ribozyme is:-
Alt1	a particle composed of RNA and protein that is involved in the synthesis of proteins.
Alt2	a class of RNA molecule that can catalyse chemical reactions.
Alt3	a protein enzyme that catalyses the synthesis of RNA.
Alt4	a monomeric subunit of RNA.

31	The distinct foci within the cytoplasm of the eukaryotic cells involved in mRNA turnover is called as:-
Alt1	Autophagic bodies
Alt2	Lysosome
Alt3	Multivesicular bodies
Alt4	Processing bodies

32	The pollutants released by the jet planes are:-
Alt1	Aerosols
Alt2	Fogs
Alt3	Smog
Alt4	Colloids

33	Oncogenes are the cancer causing genes in the cell but they do not express usually. This is because of the presence of:-
Alt1	Tumor suppressor gene
Alt2	Protooncogene
Alt3	Tumor promoter gene
Alt4	Jumping gene

34	Acrosome of sperm cell is a modified:-
Alt1	Lysosome

Alt2	Peroxisome
Alt3	Endosome
Alt4	Golgi

35	Synthesis of Glucose from amino acids is termed as:-
Alt1	Glycolysis
Alt2	Gluconeogenesis
Alt3	Lipogenesis
Alt4	Glycogenesis

36	Which one of the following statements concerning glucose metabolism is correct?
Alt1	Glucose enters most cells by a mechanism where Na+ and glucose are cotransported
Alt2	The conversion of Glucose to lactate occurs only in the R.B.C
Alt3	Pyruvate kinase catalyses an irreversible reaction
Alt4	Elevated level of insulin reduces level of fructose 2, 6-bisphosphate in hepatocyte

37	Choose the amino acid having maximum number of codons:-
Alt1	Alanine
Alt2	Leucine
Alt3	Tryptophan
Alt4	Valine

38	The genomic DNA sequences similar to normal genes but non-functional are called:-
Alt1	Introns
Alt2	Untranslated region
Alt3	Pseudogenes
Alt4	Transposons

39	The unfolding of regular secondary structure causes:-
Alt1	no change in the entropy of the protein.
Alt2	large increase in the entropy of the protein
Alt3	large decrease in the entropy of the protein
Alt4	little increase in the entropy of protein

40	Golden rice is very rich in:-
Alt1	Vitamin B12 & iron
Alt2	Vitamin B1 & copper
Alt3	Carotinoids & iron
Alt4	Vitamin B complex & vitamin C

41	Lipopolysaccharide in gram negative bacteria is found in:-
Alt1	Periplasmic space
Alt2	Cell wall
Alt3	Plasma membrane
Alt4	Outer membrane

42	Blood group type A antigen is a complex oligosaccharide which differs from H antigen present in type O individual by the presence of terminal:-
Alt1	glucose
Alt2	galactose
Alt3	N-acetylgalactosamine
Alt4	fucose

43	As one proceeds with the purification of an enzyme, with every subsequent step, the enzyme activity:-
Alt1	Decreases
Alt2	Changes randomly
Alt3	Increases
Alt4	Remains the same

44	The study of cancer is referred to as:-
Alt1	Herpetology
Alt2	Ornithology
Alt3	Dermatology
Alt4	Oncology

45	Mono-oxygenase important for the detoxification of many drugs is:-
Alt1	Lipoxygenase
Alt2	Cyclooxygenase
Alt3	Heme oxygenase
Alt4	Cytochromes P450

46	On the molar scale which of the following interactions in a non-polar environment provides highest contribution to the biomolecules
Alt1	hydrophobic interaction
Alt2	salt bridge.
Alt3	hydrogen bonding
Alt4	vander waals interaction

47	Mycobacterium is an intra-cellular parasite. It prefers to infect:-
Alt1	neutrophils
Alt2	B-cells
Alt3	macrophages
Alt4	T-cells

48	The amount of disorder in a system can be expressed as:-
Alt1	Thermodynamics
Alt2	Entropy
Alt3	Enthalpy
Alt4	Energy

49	Glycogenin is:-
Alt1	Uncoupler of oxidative phosphorylation

Alt2	Polymer of glycogen molecules
Alt3	Intermediate in glycogen breakdown
Alt4	Protein primer for glycogen synthesis

50	Which of the following aminoacid does not have optical isomers?
Alt1	glycine
Alt2	valine
Alt3	Leucine
Alt4	threonine

51	Cataract is a disease caused by
Alt1	Conjunctiva become thickened
Alt2	A clouding or loss of transparency of the eye lens due to tissue breakdown and protein clumping
Alt3	Nerves supplying the eyes getting weak
Alt4	Damage to Retinal pigments in the eye

52	Marasmus is characterized by:-
Alt1	moderate calorie deficit,
Alt2	severe protein deficit
Alt3	severe protein and calorie deficit
Alt4	infection

53	A pair of genes controlling a pair of contrasting characters is called:-
Alt1	Recessive
Alt2	Heterozygous
Alt3	Homozygous
Alt4	Allele

54	The allowed region in the Ramachandran Plot for three residues alanine, glycine and proline) decreases in the order:-
Alt1	Ala > Pro > Gly.
Alt2	Gly > Ala > Pro.
Alt3	Gly > Pro = Ala
Alt4	Pro > Gly > Ala.

55	Number of base pairs per complete turn in Z-DNA?
Alt1	10
Alt2	12
Alt3	9
Alt4	11

56	HMP shunt is unique in generating two important products:-
Alt1	pentoses& NADH
Alt2	hexoses& NADH
Alt3	Pentoses& NADPH
Alt4	Hexoses & NADPH

57	The microorganism that is mainly used is an indicator of fecal pollution in water is:
Alt1	Closteridium tetani
Alt2	Cyanobacteria
Alt3	Closteridium botulinum
Alt4	Escherichia coli

58	AIDS is not transmitted by:-
Alt1	mosquito bite
Alt2	sharing unsterilized needles
Alt3	unprotected sex
Alt4	transfusion of infected blood

59	An antihemorrhagic agent is a substance that promotes hemostasis or stops bleeding. Which of the following vitamin can be considered as an agent:-
Alt1	vitamin C.
Alt2	vitamin K.
Alt3	vitamin D.
Alt4	vitamin A.

60	The plant hormone auxin causes:-
Alt1	Splitting of internode
Alt2	Cell expansion
Alt3	Shoot growth and shoot initiation
Alt4	Internodal elongation

61	Ethanol decreases gluconeogenesis by:-
Alt1	Inhibiting glucose-6-phosphatase
Alt2	Converting NAD+ into NADH and decreasing the availability of pyruvate
Alt3	Converting NAD+ into NADH and decreasing the availability of lactate
Alt4	Inhibiting PEP carboxykinase

62	Cyclic AMP is formed from ATP by the enzyme adenylate cyclase which is activated by the hormone:-
Alt1	Epinephrine
Alt2	Progesterone
Alt3	Testosterone
Alt4	Insulin

63	Most common type of phospholipids in the cell membrane of nerve cells is:-
Alt1	phosphatidylinositol
Alt2	phosphatidylcholine
Alt3	phosphatidylserine
Alt4	sphingomyelin

64	Sucrose consists of:-
Alt1	Glucose + fructose
Alt2	Glucose + galactose

Alt3	Glucose + mannose
Alt4	Glucose + glucose

65	Fatty acid biosynthesis requires _____ for the transport of acetyl co A from the mitochondria.
Alt1	Alpha keto glutarate
Alt2	Arginine
Alt3	Citrate
Alt4	Ornithine

66	The chemical, typically released by the body in an allergic response is:-
Alt1	histamine
Alt2	perforins
Alt3	allergens
Alt4	antihistamines

67	Mosquitoes act as vector for the disorder:-
Alt1	Leishmaniasis
Alt2	African trypanosomiasis
Alt3	Bancroftian filariasis
Alt4	Onchocerciasis

68	The technique for purification of proteins that can be made specific for a given protein is:-
Alt1	Gel filtration chromatography
Alt2	Electrophoresis
Alt3	Affinity chromatography
Alt4	Ion exchange chromatography

69	Carcinomas are tumors arising from:-
Alt1	Epithelial tissue
Alt2	Muscle
Alt3	Connective tissue
Alt4	Bone

70	Bacteria protect themselves from viruses that infect them by fragmenting viral DNA with the help of:-
Alt1	Restriction Endonucleases
Alt2	Exonucleases
Alt3	DNAses
Alt4	RNAses

71	Liquid food drinking is:-
Alt1	pinocytosis
Alt2	diffusion
Alt3	imbibition
Alt4	phagocytosis

72	All of the following statements about the enzymic complex that carries out the synthesis of ATP during oxidative phosphorylation are correct except:-
Alt1	It is inhibited by oligomycin
Alt2	It is located on the matrix side of the inner mitochondrial membrane
Alt3	It can exhibit ATPase activity
Alt4	It can bind molecular O2

73	Mammalian promoter sequence is located:-
Alt1	At about 20 bp upstream of translational start site
Alt2	Within coding sequence
Alt3	At about 20 bp upstream of transcriptional start site
Alt4	Downstream of coding sequence

74	Nitrification is conversion of :-
Alt1	NO3- into N2
Alt2	N2 to NH3
Alt3	Organic nitrogen into NH4+
Alt4	NH4+ into NO3-

75	Phosphatidyl serine an important component of biological membrane is located in:-
Alt1	both leaflets
Alt2	the outer leaflet but flipflops into inner leaflet under specific conditions
Alt3	the inner leaflet but flipflops to outer leaflet under specific conditions
Alt4	the middle of the bilayer

76	Which one of the following would be expected in pyruvate kinase deficiency?
Alt1	Increased levels of lactate in the R.B.C
Alt2	Hemolytic anemia
Alt3	Increased phosphorylation of Glucose to Glucose-6-phosphate
Alt4	Decreased ratio of ADP to ATP in R.B.C

77	In fluid mosaic model :-
Alt1	proteins are embedded at places in phospholipid bilayer
Alt2	phospholipid monolayer is present on the top of a protein layer
Alt3	phospholipid monolayer is sandwiched between two protein layers
Alt4	phospholipid bilayer if present on the top of a protein layer

78	One of the following statements is correct:-
Alt1	Insulin converts glycogen synthase b to a
Alt2	Glycogen synthase 'a' is the phosphorylated
Alt3	UDP glucose molecules interact and grow into a Glycogen tree
Alt4	CAMP converts glycogen synthase b to 'a'

79	The size of red blood cells (RBC) in venous blood is greater than that of arterial blood. This increased size of red blood cell in the venous blood is due to:-
Alt1	the dissociation of cytoskeletal proteins in RBC
Alt2	the increased osmotic pressure in plasma

Alt3	the increased permeability of red blood cell (RBC) membrane
Alt4	the decreased osmotic pressure in plasma

80	Which eukaryotic cellular organelles are believed to have from symbiotic bacteria?
Alt1	endoplasmic reticulum and the Golgi apparatus.
Alt2	peroxisomes
Alt3	mitochondria and chloroplasts
Alt4	lysosome

81	What is the advantage of having two lipid bilayers around mitochondria?
Alt1	They prevent the entry of chemicals into mitochondria.
Alt2	They act as a store of phospholipids.
Alt3	They maintain a proton gradient
Alt4	They protect the cell from free radicals

82	The KDEL sequence, found on luminal proteins of the ER, is responsible for:-
Alt1	quality control in the ER.
Alt2	insertion of proteins into the membrane of the ER.
Alt3	retrieval of ER luminal proteins from the Golgi
Alt4	translocation of proteins into the ER lumen.

83	The immunoglobulins are classified on the basis of:-
Alt1	Carbohydrate content
Alt2	Light chains
Alt3	Electrophoretic mobility
Alt4	Heavy chains

84	In the immune system the mononuclear phagocyte system comprises of :-
Alt1	Endothelial cells and Erythrocytes
Alt2	Mast cells and Eosinophils
Alt3	Neutrophils and Basophils
Alt4	Blood monocytes, Liver Kupffer cells, Kidney mesangial cells etc

85	Reduced glutathione functions in R.B.Cs to:-
Alt1	Reduce methemoglobin to hemoglobin
Alt2	Produce NADH
Alt3	Reduce oxidizing agents such as H2O2
Alt4	Produce NADPH

86	Viruses that possess reverse transcriptase enzyme and capable of synthesizing DNA from RNA are termed as
Alt1	Riboviruses
Alt2	Rota viruses
Alt3	Retro viruses
Alt4	Rhabdoviruses

87	Which one of the following microbes is linked with Lyme disease?

Alt1	Heliobacter pylori
Alt2	Listeria monocytogenes
Alt3	Borellia burgdorferi
Alt4	Streptococcuc pyegenes

88	Which pathway is correct for catabolism of purines to form uric acid?
Alt1	guanylate→adenylate→xanthine→hypoxanthine→uric acid.
Alt2	adenylate→inosinate→xanthine→ hypoxanthine→Uric acid.
Alt3	adenylate→inosinate→hypoxanthine→ xanthine→uric acid.
Alt4	guanylate→inosinate→xanthine→hypoxanthine→uric acid.

89	In the dark, rods show a large inward 'dark' current which is suppressed by a flash of light. Which one of the following statements, explaining the effect of light, is true?
Alt1	sodium channel in the inner segment of rods are closed
Alt2	transducing dissociate from beta arrestin
Alt3	sodium channel in the outer segment of rods are closed
Alt4	cytoplasmic cGMP concentration increases

90	Which of the following best explains why the plasma membranes of all cells exhibit a negative resting potential?
Alt1	The membrane is mostly permeable to K+, and the Na+ gradient favors its diffusion out of the cell.
Alt2	The membrane is mostly permeable to K+, and the K+ gradient favors its diffusion into the cell.
Alt3	The membrane is mostly permeable to K+, and the K+ gradient favors its diffusion out of the cell.
Alt4	The membrane is mostly permeable to Cl-, and the Cl- gradient favors its diffusion out of the cell.

91	Which of the following replacement causes sickle cell anemia?
Alt1	Gln α6→Val
Alt2	Glu α6→Val
Alt3	Glu β6→Val
Alt4	Gln β6→Val

92	How many times longer is the DNA in a human chromosome than the length of the chromosome?
Alt1	10X
Alt2	100X
Alt3	10000X
Alt4	1000X

93	In contrast to eukaryotic mRNA, prokaryotic mRNA:-
Alt1	Has a poly A tail
Alt2	Can only be monocistronic
Alt3	Is synthesized with introns
Alt4	Can be polycistronic

94	In innate immunity, immune cells recognize invading pathogens based on their specific pathogen associated molecular patterns (PAMPs) through:-
Alt1	Glycoproteins
Alt2	LPS

Alt3	Clathrin like molecules.
Alt4	Pattern recognition receptors (PRR)

95	Degeneracy of genetic code implies that:-
Alt1	No anticodon on tRNA molecule
Alt2	Specific codon decodes many amino acids
Alt3	Codons do not code for specific amino acid
Alt4	Multiple codons must decode the same amino acids

96	Isoelectric point of lysozyme is 9.2. When the enzyme solution at this pH in water was titrated with HCl to give a pH of 5, it was observed that six ionized glutamic acid side chains got 9 protonateThe net charge on the enzyme at pH 6 would therefore be:-
Alt1	-5
Alt2	6
Alt3	5
Alt4	-6

97	Which of the following inhibitor uncouples electron transport and oxidative phosphorylation?
Alt1	Oligomycin
Alt2	Azide
Alt3	Dinitrophenol
Alt4	Rotenone

98	In contrast to chemical induced mutations, mutations induced by transposons are more likely to
Alt1	be dominant
Alt2	be stable
Alt3	revert to wild type
Alt4	be lethal

99	What is the natural function of restriction enzymes?
Alt1	Protecting bacteria by cleaving their own DNA
Alt2	Protecting bacteria by cleaving the DNA of infecting viruses.
Alt3	Protecting bacteria by methylating their own DNA.
Alt4	Protecting bacteria by methylating the DNA of infecting viruses.

100	"Bouquet stage" in meiosis is seen at:-
Alt1	Pachytene
Alt2	Zygotene
Alt3	Leptotene
Alt4	Diplotene

Examination: **M.Sc. Biochemistry and Molecular Biology**

Section 1 - Section 1

Question No.1 4.00

Bookmark

Study the following information carefully and answer the question below it:

Aasha, Bhuvnesh,Charan, Danesh, Ekta, Farhan, Ganesh and Himesh are sitting around a circle, facing the centre. Aasha sits fourth to the right of Himesh while second to the left of Farhan. Charan is not the neighbour of Farhan and Bhuvnesh. Danesh sits third to the right of Charan. Himesh never sits next to Ganesh.

Which is the position of Farhan with respect to Ekta?

- Third to the left
- Fourth to the right
- Second to the right
- Sixth to the left

Question No.2 4.00

Bookmark

Electrical impulses are generated in which part of the heart

- Purkinje fibres
- Sinoatrial node
- Atrioventricular node
- Left ventricle

Question No.3 4.00

Bookmark

Fill in the blank with the correct form of the verb.
The International Women's Day _____ with great enthusiasm by our university last month.

- celebrated
- was celebrated
- is celebrated
- has celebrated

Question No.4 4.00

Bookmark

If 9 men working 6 hours a day can do a work in 88 days. Then 6 men working 8 hours a day can do it in how many days?

- 89
- 99
- 97
- 95

Question No.5 4.00

Bookmark

If the molar amount of G in a DNA is 20%, what is the molar amount of T in the sample?

- 20%
- 30%
- 60%
- 40%

Question No.6 4.00

Bookmark

Corpus luteum secretes which hormone

- Oestrogen
- Progesterone
- Follicle stimulating hormone
- Luteinizing hormone

Question No.7 4.00

Bookmark

Which is the largest protein in human body

- Sodium potassium transport kinase
- Titin
- myosin
- Insulin

Question No.8 4.00

Bookmark

There were five massive extinctions in the history of earth. In which extinction non-avian dinosaurs went extinct

- Triassic
- Ordovician
- Cretaceous
- Permian

Question No.9 4.00

Bookmark

A good producer of citric acid is:

- Aspergillus
- Clostridium
- Pseudomonas
- Saccharomyces

Question No.10 4.00

Bookmark

Based on the information given answer the following question.
1. In a family of six persons, there are people from three generations. Each has separate professions and they like different colours. There are two couples.
2. Shyam is an Engineer and his wife is not a doctor and she does not like Red colour.
3. Chartered Accountant likes green colour and his wife is a teacher.
4. Manisha is the mother-in-law of Sunita and she likes orange colour.
5. Vimal is the grand father of Tarun and tarun is the Principal and likes black colour.
6. Nyna is the grand daughter of Manisha and she likes blue colour. Nyna's Mother likes white colour.

Which Colour is liked by the Sunita?

- Cannot be determined
- Black
- Green
- White

Question No.11 4.00

Bookmark ☐

Clover leaf structure precisely describes which biomolecule in the following

- Si-RNA
- t-RNA
- Ribosomes
- Ti- plasmid

Question No.12 4.00

Bookmark ☐

Which is called the ripening hormone

- cytokinins
- Gibberellins
- Ethylene
- Auxins

Question No.13 4.00

Bookmark ☐

Which theory aptly describes the existence of chloroplast and mitochondria.

- Endosymbiosis theory
- Knudsons hypothesis.
- Evolution theory
- Cell theory

Question No.14 4.00

Bookmark ☐

Bacterial cell wall components are recognized by

- TLR4
- CLR's
- TLR3
- NLR's

Question No.15 4.00

Bookmark ☑

Which of the following subunits of the bacterial RNA polymerase is responsible for promoter recognition?

- B
- B'
- alpha
- sigma

Question No.16 4.00

Bookmark ☐

Choose the synonym of the italicized word.
Some people are extremely *fastidious* in their choice of dress.

- discriminating
- pompous
- careless
- fussy

Question No.17 4.00

Bookmark

Proteins tagged with mannose-6-phosphate are transported to:

- Lysosomes
- Golgi apparatus
- Plasma membrane
- Mitochondria

Question No.18 4.00

Bookmark

Number of steps present in PCR are

- 3
- 4
- 2
- 6

Question No.19 4.00

Bookmark

Which of the metabolite is common to respiration mediated breakdown of fats, carbohydrates and proteins?

- Pyruvic acid
- α–Keto-glutarate
- Oxaloacetic acid
- Acetyl-CoA

Question No.20 4.00

Bookmark

Choose the most appropriate preposition to fill the blank:
The mathematics exam will be held between 2____4pm.

- from
- at
- and
- to

Question No.21 4.00

Bookmark

Which of the following cofactors is involved in amino group transfer?

- Biotin
- CoA
- NAD
- Pyridoxal Phosphate

Question No.22 4.00

Bookmark

The method of mining silver varies from place to place, _____?

- is it?
- doesn't it?
- does it?
- isn't it?

Question No.23 4.00

Bookmark ☐

Study the following information carefully and answer the question below it

In a family, Isha is the granddaughter of Asha. Deepa is the mother of Hansa. Charan is the son of Anand. Radha is the mother ofIsha. Deepa is the sister of Vinod and Charan. Nagesh has two children, Gita and Hansa. Emesh is the only grandson in the family. Charan is not married. Radha is the daughter-in-law of Anand.

Who is married to Radha?

- Nagesh
- Charan
- Vinod
- Anand

Question No.24 4.00

Bookmark ☐

Which peptide in the following peptides will be hydrolyzed by trypsin?

- Gly-Met-Arg
- Phe-Met-Pro
- Pro-Arg-Met
- Ala-Phe-Gly

Question No.25 4.00

Bookmark ☑

Which of the following subunits of the bacterial RNA polymerase is responsible for promoter recognition?

- alpha
- B'
- Sigma
- B

Question No.26 4.00

Bookmark ☐

EDTA is chelating agent which chelates

- Divalent anions
- Monovalent anions
- Monovalent cations
- Divalent cations

Question No.27 4.00

Bookmark ☐

Leventhal's paradox represents concept of

- Enzyme kinetics
- Pharmacodynamics
- Drug kinetics
- Protein folding

Question No.28 4.00

Bookmark ☐

Cadherin's are adhesion molecules involved in tight junctions of the cells. They form the tight junction through strand switching method. List the necessary criteria needed tight junction formation by cadherins

- Availability of Ca^{2+} ions in micro molar concentration with conserved Ala2 residue.
- Availability of Mg^{2+} ions ions in micro molar concentration with conserved Trp2 residue
- Availability of Ca^{2+} ions in micro molar concentration with conserved Trp2 residue
- Availability of Mg^{2+} ions ions in micro molar concentration with conserved Ala2 residue

Question No.29 4.00

Bookmark ☑

1, 4, 27, 16, ?, 36, 343

- 72
- 25
- 132
- 125

Question No.30 4.00

Bookmark ☐

Which form is amino nitrogen excreted from the body of birds and reptiles?

- Ammonia
- Urea
- All of them
- Uric acid

Question No.31 4.00

Bookmark ☐

Which metal is used in galvanization process

- Zinc
- Aluminium
- Vanadium
- Ni-Chrome

Question No.32 4.00

Bookmark ☐

A researcher came upon a young herbaceous plant which was very brittle. He found it to be abnormal. Mostly, all young herbaceous plants have a flexible stem. He speculated some hypothesis for the brittle stem. Help the researcher to find the correct hypothesis.

- Lignification of Aerenchyma
- Gain of function mutation in Chlorenchymal cells
- Deletion mutation of Collenchyma
- Striation of Parenchymal cells

Question No.33 4.00

Bookmark ☐

Repressor molecules bind to the:

- Promoter
- Enhancer
- Operator
- Hormone response element

Question No.34 4.00

Bookmark

In an in vitro protein translation-translocation system, the following components are present besides all protein synthesis machinery: SRP and SRP-receptor but no microsomes. What will be your observation?

- No polypeptide will be formed
- Complete polypeptide without signal peptide will be formed
- Polypeptide with elongation blocked at 70-100 amino acids will be formed
- Complete polypeptide with signal peptide will be formed

Question No.35 4.00

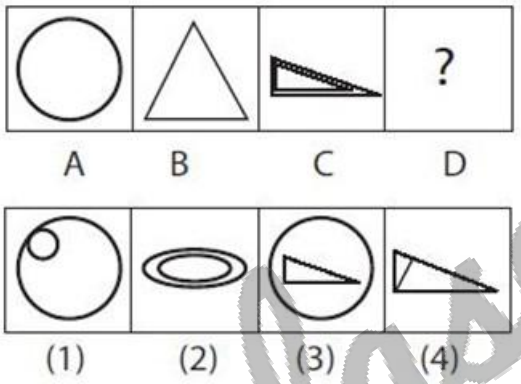
Bookmark

A 40 year old alcoholic comes in with severe pain in his big toe. You decide to administer Allopurinol to inhibit which of the following enzyme:

- Adenosine deaminase
- Thymidine kinase
- Adenine phosphoribosyl transferase
- Xanthine oxidase

Question No.36 4.00

Bookmark



- 4
- 3
- 2
- 1

Question No.37 4.00

Bookmark

The enzyme responsible for continuing DNA replication in prokaryotes, once it is initiated is:

- DNA polymerase I
- polymerase delta
- DNA polymerase II
- polymerase beta

Question No.38 4.00

Bookmark

Which one among the following amino acids acts as neurotransmitter?

- Glutamic acid
- Alanine
- Aspartic acid
- Tyrosine

Question No.39 4.00

Bookmark

In a certain enzyme catalyzed reaction performed with X amount of enzyme, the Km was determined to be 2 nM. The reaction was repeated under the same conditions with 2X amount of enzyme such that the substrate condition is still not limiting. What would you expect the Km to be?

- Cannot be calculated
- 1 nM
- 2 nM
- 4 nM

Question No.40 4.00

Bookmark

Statements: Buses are cars. Cycles are cars
Conclusion:
I. Cars are buses
II. Buses are Cycles

- If only conclusion I follows
- If either I or II follows
- If neither I nor II follows
- If only conclusion II follows

Question No.41 4.00

Bookmark

Study the following information carefully and answer the question below it (i) There is a group of five persons- A, B, C, D and E (ii) One of them is manual scavenger, one is sweeper, one is watchman, one is human scarecrow and one is grave-digger (iii) Three of them – A, C and grave-digger prefer tea to coffee and two of them – B and the watchman prefer coffee to tea (iv) The human scarecrow and D and A are friends to one another but two of these prefer coffee to tea. (v) The manual scavenger is C's brother Which of the following groups includes a person who likes tea but is not a grave-digger?

- BD
- DE
- BCE
- None of the above

Question No.42 4.00

Bookmark

The enzyme used in disruption of bacterial cell wall is:

- Lactase
- Hemicellulase
- Lysozyme
- Lipase

Question No.43 4.00

Bookmark

The human liver cannot produce

- Ketone bodies from fatty acids
- glucose from fatty acids
- Glucose from amino acids
- Fatty acids from glucose

Question No.44 4.00

Bookmark ☐

In the complement system, which pathway uses Factor B and D for activation of C3 convertase

- Classical
- Lectin
- Alternate
- A & B

Question No.45 4.00

Bookmark ☐

Which of the following proteins is called docking proteins?

- Antibodies
- SRP-receptors
- Insulin receptors
- Carrier proteins

Question No.46 4.00

Bookmark ☑

Two important functions of peroxisomes in plants are

- 1. Secondary metabolite production.
  2. Maintain turgor pressure.
- 1. Protein synthesis in chloroplast.
  2. Colouring of flowers
- 1. Conversion of stored fatty acids to carbohydrates in seeds.
  2. Photorespiration in leaves
- 1. Acts as ion channels
  2. Helps in stomatal movement

Question No.47 4.00

Bookmark ☐

Tiny air sacs of the lungs which allow for rapid gaseous exchange are

- Parietal cells
- Microglia
- Epiglottis
- Alveolus

Question No.48 4.00

Bookmark ☐

Statement: Be humble even after being victorious.
Assumptions:
I. Many people are humble after being victorious
II. Generally People are not humble

- If only assumption II is implicit
- If only assumption I is implicit
- If both I and II are implicit
- If neither I nor II is implicit

Question No.49 4.00

Bookmark ☐

N-Ethylmaleimide will react with which of the following functional group of the protein:

- Carboxyl group
- Sulfhydryl group
- Amino group
- Imidazole group

Question No.50 4.00

Bookmark ☐

The most abundant protein in the biosphere is

- Rubisco
- Collagen
- IgG
- Albumin

Question No.51 4.00

Bookmark ☐

You wouldn't tell them what happened, _____

- wouldn't you?
- would you?
- isn't it?
- won't you?

Question No.52 4.00

Bookmark ☑

Cystic fibrosis transmembrane conductance regulator (CFTR), mutation in this gene is responsible for cystic fibrosis. Identify the normal function of this gene

- Functions as a cAMP- and ATP-regulated Na+ channel
- Functions as a cAMP- and ATP-regulated Cl- channel
- Functions as a JAK STAT kinase regulated Cl- channel
- Functions as a endocrine regulated Cl- channel

Question No.53 4.00

Bookmark ☐

Substrate level phosphorylation is catalyzed by

- Succinate dehydrogenase
- Hexokinase
- Phosphoglycerate kinase
- Phosphofructokinase

Question No.54 4.00

Bookmark ☐

Which protein is majorly used as carrier protein in conjugate vaccines

- Flagellin
- Diphtheria Toxin CRM197
- Collagenase.
- HPV capsule protein

Question No.55 4.00

Bookmark ☐

Antibiotics such as Ciprofloxacin and Fluoroquinolones work by inhibiting a specific enzyme. This enzyme is normally necessary to relieve torsional strain that is caused by the unwinding of the helix. What is the name of this enzyme?

- Primase
- Single-stranded binding protein
- Topoisomerase (DNA Gyrase)
- DNA ligase

Question No.56 4.00

Bookmark ☐

Which is the major building block of agrochemical and pharmaceautical products

- Furan
- Pyrrole
- Thiophenes
- Pyridines

Question No.57 4.00

Bookmark ☐

For passive vaccination, which antibody type will be most appropriate:

- Single chain antibody
- Monoclonal antibody
- Both Polyclonal and monoclonal
- Polyclonal antibody

Question No.58 4.00

Bookmark ☐

UDP-Gal/UMP or GDP-Mannose/GDP antiport is present in the membrane of:

- Lysosome
- Mitochondria
- Golgi Apparatus
- ER

Question No.59 4.00

Bookmark ☐

Sunil likes chocolates very much, _____?

- does he
- isn't it?
- is it?
- doesn't he?

Question No.60 4.00

Bookmark ☑

Which is known as artificial cell/membrane?

- Virosome
- Glyoxisome
- Nanosome
- Liposome

Question No.61 4.00

Bookmark ☐

In the following question, the first two words (given in italics) have a definite relationship. Choose one word out of the given four alternatives which will fill the blank space and showthe same relationship with the third word as between the first two.

Latex is to *Rubber* as *Flax* is to ……?…….

- Cotton
- Silk
- Linen
- Jute

Question No.62 4.00

Bookmark ☐

Semi conservative replication was proposed by

- Meselson & Stahl
- Jacques Monod & Joshua Lederberg
- Watson & Crick
- Khorana & Nirenberg

Question No.63 4.00

Bookmark ☐

In which phase of the cell cycle, the cell irreversibly commits itself to the cycle

- M checkpoint
- G2
- G1
- S

Question No.64 4.00

Bookmark ☐

An eukaryotic organism lacks the importin gene, which is responsible for protein import through the nuclear membrane. There is microbial infection in the organism, triggering one of the major nuclear inducible gene cascade. What will be the outcome

- The downstream signalling pathway will not be activated.
- The downstream signalling will be activated but the protein is not imported in to nuclear membrane.
- The downstream signalling will not be activated but the protein is imported into the nuclear membrane
- The downstream signalling will be activated and protein is imported through passive transport

Question No.65 4.00

Bookmark ☑

Trypsin specifically recognizes

- C terminal end of Arginine and lysine
- N terminal end of Arginine and lysine
- N terminal end of Arginine and leucine
- C terminal end of Arginine and leucine

Question No.66 4.00

Bookmark ☐

Which of the following drugs causes the dissolution of the Golgi apparatus with ER.

- puromycin
- Brefeldin A
- chloroquine
- flycomycin

Question No.67 4.00

Bookmark

Which subunit of prokaryotic DNA Pol III is responsible for proof reading mechanism

- Beta
- Epsilon
- Alpha
- Delta

Question No.68 4.00

Bookmark

Which of the following organelles has membrane which is unusually permeable to inorganic ions and low molecular wt. substrate?

- ER
- Lysosomes
- Peroxisomes
- Golgi apparatus

Question No.69 4.00

Bookmark

Pulmonary vein is major blood vessel which carries

- deoxygenated blood from the lungs to the heart
- oxygenated blood from the lungs to the heart
- oxygenated blood from the heart to the lungs
- deoxygenated blood from the heart to the lungs

Question No.70 4.00

Bookmark

Which of the following does not have introns?

- Non-processed pseudo genes
- Primary RNA transcript
- Processed mRNA
- DNA

Question No.71 4.00

Bookmark

Which is the rate limiting enzyme in glycolysis

- Aldolase
- Pyruvate kinase
- Phosphofructokinase
- Hexokinase

Question No.72 4.00

Bookmark

The site for synthesis for plasmalogens is

- ER
- Golgi apparatus
- Peroxisome
- Mitochondria

Question No.73 4.00

Bookmark

Which metal is coated to the specimen before using in SEM.

- Zirconium
- Gallium
- Gadolinium
- Gold

Question No.74 4.00

Bookmark

Serine proteases have 3 prominent amino acids in its active site, they are

- Valine, serine, Histidine
- Serine. Histidine, Aspartic acid
- Serine, cysteine, aspartic acid.
- Serine, leucine, lysine

Question No.75 4.00

Bookmark

Choose the best antonym of the italicized word.
The principal *deprecated* the attitude of some student-leaders.

- tolerated
- derided
- ignored
- appreciated

Question No.76 4.00

Bookmark

SDS-PAGE seperates proteins on the basis of

- Secondary Structure
- Charge
- Zwitter ions
- Molecular weight

Question No.77 4.00

Bookmark

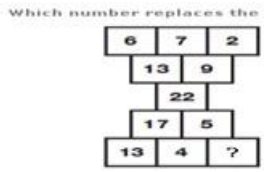
Which among the immune cell majorly acts as antigen presenting cell

- IL-6
- TNF-α cells
- Macrophages
- Spleenocytes

Question No.78 4.00

Bookmark ☐

Which number replaces the question mark?



- 3
- 2
- 1
- 4

Question No.79 4.00

Bookmark ☐

Which is the infamous X-linked inheritence disease wich runs in the British Royal Family.

- Haemophilia
- Huntington's chorea
- Down syndrome
- Multiple Sclerosis

Question No.80 4.00

Bookmark ☐

Perfectly folded protein has

- Less entropy and less enthalpy
- Less entropy and high enthalpy
- High entropy and less enthalpy
- High entropy and high enthalpy

Question No.81 4.00

Bookmark ☐

The cell-mediated immunity inside the human body is carried out by:

- Thrombocytes
- Erythrocytes
- B-Lymphocytes
- T-Lymphocytes

Question No.82 4.00

Bookmark ☐

Choose the correct meaning of the italicized idiom.
The police *cordoned off* the area after the explosion.

- filled the whole area
- checked everyone in the area
- did not allow anyone to leave the area
- isolated the area

Question No.83 4.00

Bookmark ☑

Which of the following amino acids is synthesized directly from TCA cycle intermediate?

- serine
- aspartic acid
- alanine
- cysteine

Question No.84 4.00

Bookmark

Lactose consists of

- Glucose + Glucose
- Mannose + Glucose
- Galactose + Glucose
- Glucose + Fructose

Question No.85 4.00

Bookmark

Which amino acid from the following amino acid residues would you expect to find on the inside of a typical globular protein molecule in solution at pH 7?

- Val
- Glu
- His
- Asp

Question No.86 4.00

Bookmark

Which the recognition site for ribosomes in prokaryotic mRNA

- Shine dalgarno sequence
- Poly A site
- TATA box
- CpG site

Question No.87 4.00

Bookmark

DNA damage in the cell can be analyzed using

- Comet assay
- Bradford assay
- Nanodrop
- RAPD

Question No.88 4.00

Bookmark

Muscle cells differ from nerve cells because they

- use different genetic codes
- express different genes
- contain different genes
- have unique ribosomes

Question No.89 4.00

Bookmark

Which of the following graphical plots would provide you the number of ligand binding sites in hemoglobins?

- Scatchard plot
- Hill's plot
- Sigma plot
- Lineweaver-Burk plot

Question No.90 4.00

Bookmark ☐

Rifampicin is a RNA polymerase inihibtor which inibits the

- *rpoB* subunit
- *rpoZ* subunit
- *rpoE* subunit
- *rpoD* subunit

Question No.91 4.00

Bookmark ☐

Which form of DNA is observed during transcription

- rDNA
- B - DNA
- Z - DNA
- A - DNA

Question No.92 4.00

Bookmark ☐

If black is called white, white is called red, red is called pink, pink is called green, green is called blue, what would be the colour of human blood?

- Blue
- Pink
- White
- Green

Question No.93 4.00

Bookmark ☐

Which cell is exclusively responsible for the formation of myelin sheath in Peripheral Nervous system (PNS)

- Microglia
- Astrocytes
- Schwann cells
- Oligodendrocytes

Question No.94 4.00

Bookmark ☐

The precursor of all N-linked oligosaccharide contains:

- Three glucose, eight mannose and three N-acetylglucosamine
- Two glucose, nine mannose and three N-acetylglucosamine
- Three glucose, nine mannose and two N-acetylglucosamine
- Two glucose, eight mannose and four N-acetylglucosamine

Question No.95 4.00

Bookmark ☑

Which of the following cofactors is involved in carboxyl transfer?

- Biotin
- Pyridoxal phosphate
- TPP
- FAD

Question No.96 4.00

Bookmark ☐

A toxin which has been treated with formalin is called:

- Exotoxin
- Toxoid
- Antitoxin
- Enterotoxin

Question No.97 4.00

Bookmark ☑

Streptomycin inhibits the protein biosynthesis in

- fungal cells
- Eukaryotic cells
- prokaryotic cells
- plant cells

Question No.98 4.00

Bookmark ☐

Tunicamycin inhibits the biosynthesis of:

- Mucopolysaccharide
- Glycolipids
- Polysaccharides
- Glycoproteins

Question No.99 4.00

Bookmark ☐

Which amino acids are popularly termed as helix breakers

- Tyrosine and Tryptophan
- Lysine and methionine
- Valine and leucine
- Proline and Glycine

Question No.100 4.00

Bookmark ☐

When isotopic glycine $^{15}NH_2$-CH_2-COOH was administered in rats which nitrogen atom in purine will be labeled with ^{15}N?

- N-9
- N-7
- N-3
- N-1