

Group of Paper :: BSc Biology

Q. No. 1 0321001	Dephosphorylation of protein is catalysed by which of the following enzyme?
Option A	Kinases
Option B	Phosphatases
Option C	Isomerases
Option D	Lyases
Correct Option	B

Q. No. 2 0321002	Crossing over occurs between _____
Option A	Two sister chromatids of homologous chromosomes
Option B	Two non-sister chromatids of homologous chromosomes
Option C	Two non-homologous chromosomes
Option D	None of the above
Correct Option	B

Q. No. 3 0321003	Which of the following coat proteins are required for receptor mediated endocytosis from plasma membrane?
Option A	Clathrin
Option B	COP-I
Option C	SNARE
Option D	pSMAD
Correct Option	A

Q. No. 4 0321004	Which of the following combination has only stop codons?
Option A	UAG, UAU
Option B	UAU, UGA
Option C	UGA, UAA
Option D	UAA, UAC
Correct Option	C

Q. No. 5 0321005	Which of the following statement is FALSE?
Option A	DNA polymerase III only has endonuclease activity
Option B	DNA polymerase I only has endonuclease activity
Option C	DNA polymerase I has both endonuclease and exonuclease activity
Option D	DNA polymerase III is a highly processive enzyme
Correct Option	B

Q. No. 6 0321006	Telomerase is a _____
Option A	RNA dependent RNA polymerase
Option B	DNA dependent RNA polymerase
Option C	RNA dependent DNA polymerase
Option D	None of the above
Correct Option	C

Q. No. 7 0321007	In N-linked glycosylation, oligosaccharides are attached to _____
Option A	Asparagine of Asn-X-Ser/Thr
Option B	Glycine of Asn-X-Ser/Thr
Option C	Serine of Asn-X-Ser/Thr
Option D	Threonine of Asn-X-Ser/Thr

Correct Option	A
----------------	----------

Q. No. 8 0321008	Mendel's second law is _____
Option A	Independent assortment
Option B	Segregation
Option C	Dominance
Option D	All of these
Correct Option	B

Q. No. 9 0321009	What is the main difference between the paracentric and pericentric inversions?
Option A	Genes number
Option B	Centromeres number
Option C	Centromeres position
Option D	Both A & B
Correct Option	C

Q. No. 10 0321010	In which stage of prophase I of meiosis crossing over occurs?
Option A	Leptotene
Option B	Diplotene
Option C	Pachytene
Option D	None of the above
Correct Option	C

Q. No. 11 0321011	A plant having DdGg genotype will produce which kinds of gamete?
Option A	DG, dg
Option B	Dd, dG, dg, Dg
Option C	DG, Dg, dG, dg
Option D	DD, dd, GG, gg
Correct Option	C

Q. No. 12 0321012	What does kappa () particle indicate?
Option A	Mutations
Option B	Nuclear inheritance
Option C	Cytoplasmic inheritance
Option D	All of the above
Correct Option	C

Q. No. 13 0321013	Which is not a characteristic of virus?
Option A	Integration of viral nucleic acid into the DNA of the host cell
Option B	Destruction of the host cell with accompanying production of viral progeny
Option C	Outside of the cell, the virus exists as a macromolecular package
Option D	A virus has wide range of host
Correct Option	D

Q. No. 14 0321014	Which is a property of Genetic code?
Option A	Degenerate
Option B	Unambiguous
Option C	Universal
Option D	All
Correct Option	D

Q. No. 15 0321015	Three germ layers discovered by _____
Option A	Heinz Christian Pander
Option B	Albert von Kolliker
Option C	Watson and Crick
Option D	Robert Hooke
Correct Option	A

Q. No. 16 0321016	Which cyclin involved in promoting cell progression from G1 to S phase?
Option A	Cyclin D
Option B	Cyclin E
Option C	Cyclin A
Option D	Cyclin B
Correct Option	A

Q. No. 17 0321017	Find the correct statement about parthenogenesis?
Option A	It involves development of male gamete with fertilization
Option B	It is commonly shows by invertebrates and lower plants
Option C	A sexual reproduction
Option D	Parthenogenesis applied in haploid cells exclusively
Correct Option	B

Q. No. 18 0321018	Which the amino acid get phosphorylated in different types of receptors?
Option A	Serine
Option B	Threonine
Option C	Tyrosine
Option D	All
Correct Option	D

Q. No. 19 0321019	Actin filaments are not involved in ____
Option A	Ameboid movement
Option B	Cytoplasmic streaming
Option C	Contraction of smooth muscle
Option D	Flagellar movement in bacteria
Correct Option	D

Q. No. 20 0321020	Which of the following is the part of cytoskeleton?
Option A	The nuclear envelope
Option B	Mitochondria
Option C	Microfilaments
Option D	Nucleoli
Correct Option	C

Q. No. 21 0321021	Xeroderma pigmentosum occurs due to impaired ability of the cell _____
Option A	They cannot replicate DNA
Option B	They cannot undergo mitosis
Option C	They cannot exchange DNA with other cells
Option D	They cannot repair thymine dimers
Correct Option	D

Q. No. 22 0321022	A colourful radish is an example of _____
Option A	A multiple allelic system

Option B	Sex linkage
Option C	Co-dominance
Option D	Epistasis
Correct Option	D

Q. No. 23 0321023	If there are 20 centromeres in a cell at anaphase, how many chromosomes are there in each daughter cell following cytokinesis?
Option A	10
Option B	20
Option C	30
Option D	40
Correct Option	B

Q. No. 24 0321024	Which of the following organelle modifies polysaccharides for secretion?
Option A	Lysosome
Option B	Nucleus
Option C	Mitochondria
Option D	Golgi apparatus
Correct Option	D

Q. No. 25 0321025	Which of the following contain the 9 + 2 arrangement of microtubules?
Option A	Cilia
Option B	Centrioles
Option C	Flagella
Option D	Both A & C
Correct Option	D

Q. No. 26 0321026	Which of the following membrane activities require energy from ATP hydrolysis?
Option A	Facilitated diffusion
Option B	Movement of water into a cell
Option C	Na ⁺ ions moving out of the cell
Option D	Movement of glucose molecules
Correct Option	C

Q. No. 27 0321027	Which of the following statements is true of chromatin?
Option A	Heterochromatin is composed of DNA, whereas euchromatin is made of DNA and RNA
Option B	Both heterochromatin and euchromatin are found in the cytoplasm
Option C	Heterochromatin is highly condensed, whereas euchromatin is less compact
Option D	Euchromatin is not transcribed, whereas heterochromatin is transcribed
Correct Option	C

Q. No. 28 0321028	Which follows the Chargaff's rules?
Option A	A = G
Option B	A + G = C + T
Option C	A + T = G + T
Option D	A = C
Correct Option	B

Q. No. 29 0321029	The mitochondria and nucleus both has dual membrane. In what manner the inner layers are different in these organelles?
Option A	The inner mitochondrial membrane is highly folded
Option B	The two membranes are biochemically very different
Option C	The space between the two layers of the nuclear membrane is larger

Option D	The inner mitochondrial membrane is devoid of nearly all proteins
Correct Option	A

Q. No. 30 0321030	DNA strands are anti-parallel because of -
Option A	Disulfide bond
Option B	Hydrogen bond
Option C	Phosphodiester bond
Option D	None of these
Correct Option	C

Q. No. 31 0321031	Which of the following organelles attached to the endoplasmic reticulum?
Option A	Golgi complex
Option B	Mitochondrion
Option C	Ribosomes
Option D	All of the above
Correct Option	C

Q. No. 32 0321032	Which of the most infectious disease is?
Option A	Hepatitis-B
Option B	AIIDS
Option C	Cough and cold
Option D	Malaria
Correct Option	C

Q. No. 33 0321033	Widal test is used for detecting _____
Option A	Yellow fever
Option B	Malaria
Option C	Typhoid
Option D	Cholera
Correct Option	C

Q. No. 34 0321034	Which of the following is an infectious disease?
Option A	Diphtheria
Option B	Coronary thrombosis
Option C	Diabetes mellitus
Option D	Hypertension
Correct Option	A

Q. No. 35 0321035	What is Vaccine?
Option A	Live oral pathogen
Option B	Inactivated antigen
Option C	Inactivated pathogen
Option D	Complete pathogen
Correct Option	C

Q. No. 36 0321036	Colostrum, the first milk secretion of mammary gland is rich in immunoglobulin
Option A	IgE
Option B	IgM
Option C	IgA
Option D	IgG
Correct Option	C

Q. No. 37 0321037	Follicle stimulating hormone (FSH) acts on _____
Option A	Muscles
Option B	Gonads
Option C	Pituitary gland
Option D	All of the above
Correct Option	B

Q. No. 38 0321038	Life without air would be _____
Option A	Free from oxidative damage
Option B	Anaerobic
Option C	Aerobic
Option D	Reductional
Correct Option	B

Q. No. 39 0321039	Krebs cycle occurs in _____
Option A	Grana
Option B	Cristae
Option C	Ribosome
Option D	Mitochondrial matrix
Correct Option	D

Q. No. 40 0321040	Alkaline mixed food content of intestine is called _____
Option A	Chyle
Option B	Chyme
Option C	Bolus
Option D	None
Correct Option	A

Q. No. 41 0321041	Which of the following animal does not have gallbladder?
Option A	Lion
Option B	Human
Option C	Horse
Option D	Dog
Correct Option	C

Q. No. 42 0321042	Hypersecretion of thyroxine causes _____
Option A	Acromegaly
Option B	Addison's disease
Option C	Tetany
Option D	None of above
Correct Option	D

Q. No. 43 0321043	Emphysema is occurs due to _____
Option A	Narcotics
Option B	Heroine
Option C	Smoking
Option D	Opiates
Correct Option	C

Q. No. 44 0321044	In the liver, alcohol is converted into which toxic substance?
----------------------	--

Option A	Formic acid
Option B	Acetaldehyde
Option C	Nicotine
Option D	Urea
Correct Option	B

Q. No. 45 0321045	Cocaine is derived from which of the following _____
Option A	<i>Erythroxylon coca</i>
Option B	<i>Coffea arabica</i>
Option C	<i>Thea sinensis</i>
Option D	<i>Cannabis sativa</i>
Correct Option	A

Q. No. 46 0321046	Which one of the following is not used in the production of yoghurt?
Option A	<i>Acetobacter aceti</i>
Option B	<i>Streptococcus lactis</i>
Option C	<i>Lactobacillus bulgaricus</i>
Option D	<i>Streptococcus thermophiles</i>
Correct Option	A

Q. No. 47 0321047	Enzyme immobilization can be done by
Option A	Adsorption
Option B	Entrapment
Option C	Direct covalent linking
Option D	All of these
Correct Option	D

Q. No. 48 0321048	T-lymphocytes originate from:
Option A	Liver
Option B	Bone marrow
Option C	Thymus
Option D	Pineal
Correct Option	B

Q. No. 49 0321049	Passive immunity is obtained by injecting:
Option A	Antibodies
Option B	Vaccines
Option C	Antibiotics
Option D	Antigens
Correct Option	A

Q. No. 50 0321050	Cleavage having incomplete division of egg is known as ____
Option A	Holoblastic
Option B	Determinate
Option C	Meroblastic
Option D	Unequal holoblastic
Correct Option	C

Q. No. 51 0321051	Which metal ion is essential for the oxygen-carrying function of hemoglobin and myoglobin?
Option A	Calcium
Option B	Iron

Option C	Copper
Option D	Zinc
Correct Option	B

Q. No. 52 0321052	Which metal is commonly found in vitamin B12, a cofactor for various enzymatic reactions in the body?
Option A	Calcium
Option B	Iron
Option C	Cobalt
Option D	Magnesium
Correct Option	C

Q. No. 53 0321053	Which of the following molecules does not exhibit optical isomerism?
Option A	Lactic acid (2-hydroxypropanoic acid)
Option B	Tartaric acid
Option C	Glucose
Option D	Acetic acid (ethanoic acid)
Correct Option	D

Q. No. 54 0321054	In a molecule with multiple chiral centers, the number of possible stereoisomers can be calculated using which formula?
Option A	2^n , where n is the number of chiral centers
Option B	$n!$, where n is the number of chiral centers
Option C	n^2 , where n is the number of chiral centers
Option D	$2n$, where n is the number of chiral centers
Correct Option	A

Q. No. 55 0321055	Which of the following is an example of a lyophobic colloid?
Option A	Starch in water
Option B	Gelatin in water
Option C	Silver iodide in kerosene
Option D	Mud in water
Correct Option	C

Q. No. 56 0321056	What is the term for a carbohydrate composed of two monosaccharide units linked together by a glycosidic bond?
Option A	Monosaccharide
Option B	Oligosaccharide
Option C	Polysaccharide
Option D	Disaccharide
Correct Option	D

Q. No. 57 0321057	In ribose, the functional group found on the second carbon atom (C2) is a:
Option A	Ketone
Option B	Aldehyde
Option C	Hydroxyl group
Option D	Carboxylic acid group
Correct Option	C

Q. No. 58 0321058	Which part of an amino acid is responsible for the molecule's acidity or basicity?
Option A	Amino group
Option B	Carboxyl group
Option C	Hydrogen atom
Option D	R-group (side chain)

Correct Option	A
----------------	----------

Q. No. 59 0321059	In a peptide sequence, the sequence of amino acids is often denoted from the _____ end to the _____ end.
Option A	C-terminus, N-terminus
Option B	N-terminus, C-terminus
Option C	Alpha-terminus, Beta-terminus
Option D	Left-terminus, Right-terminus
Correct Option	B

Q. No. 60 0321060	Hemoglobin, insulin, and collagen are examples of which class of proteins that serve as structural materials in the body?
Option A	Enzymes
Option B	Transport proteins
Option C	Storage proteins
Option D	Fibrous proteins
Correct Option	D

Q. No. 61 0321061	What is the complementary base pairing rule in DNA?
Option A	A pairs with T, C pairs with G
Option B	A pairs with C, G pairs with T
Option C	A pairs with G, C pairs with T
Option D	A pairs with U, C pairs with G
Correct Option	A

Q. No. 62 0321062	What is the function of RNA in protein synthesis?
Option A	RNA stores genetic information
Option B	RNA catalyzes chemical reactions
Option C	RNA carries the genetic code from DNA to ribosomes
Option D	RNA provides structural support to cells
Correct Option	C

Q. No. 63 0321063	What is the primary difference between fats and oils?
Option A	Fats are of plant origin, while oils are of animal origin.
Option B	Fats are liquid at room temperature, while oils are solid.
Option C	Fats contain saturated fatty acids, while oils contain unsaturated fatty acids.
Option D	Fats are used for cooking, while oils are used for lubrication.
Correct Option	C

Q. No. 64 0321064	Detergents are molecules that possess both hydrophilic and hydrophobic regions. What is the term for such molecules?
Option A	Hydrophobic
Option B	Hydrophilic
Option C	Amphiphilic
Option D	Nonpolar
Correct Option	C

Q. No. 65 0321065	In detergents, which part of the molecule is hydrophilic and interacts with water molecules?
Option A	The hydrocarbon tail
Option B	The carboxylic acid group
Option C	The sulfate or sulfonate group
Option D	The benzene ring
Correct Option	C

Q. No. 66 0321066	Which of the following ligands is considered a bidentate ligand?
Option A	Ammonia (NH_3)
Option B	Chloride ion (Cl^-)
Option C	Ethylenediamine (en)
Option D	Cyanide ion (CN^-)
Correct Option	C

Q. No. 67 0321067	What is the coordination number of the central metal ion in the complex $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$?
Option A	3
Option B	4
Option C	5
Option D	6
Correct Option	D

Q. No. 68 0321068	What is the IUPAC name for the complex $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$?
Option A	Ammine dichloridocobalt(III) chloride
Option B	Tetraammine dichlorocobalt(III) chloride
Option C	Tetraammine dichloridocobalt(III) chloride
Option D	Ammine dichlorocobalt(III) chloride
Correct Option	C

Q. No. 69 0321069	Which of the following coordination compounds exhibits a square planar geometry?
Option A	$[\text{Cu}(\text{NH}_3)_4]^{2+}$
Option B	$[\text{Co}(\text{NH}_3)_6]^{3+}$
Option C	$[\text{PtCl}_4]^{2-}$
Option D	$[\text{Ni}(\text{CO})_4]$
Correct Option	C

Q. No. 70 0321070	The lanthanides are known for their ability to fluoresce. What is the primary reason for their luminescent properties?
Option A	The presence of d electrons in their electron configuration.
Option B	The strong covalent bonds formed with ligands.
Option C	The energy levels of their 4f electrons.
Option D	Their high reactivity with oxygen.
Correct Option	C

Q. No. 71 0321071	Which actinide element is known for its extensive use in nuclear weapons and has the chemical symbol Pu?
Option A	Uranium (U)
Option B	Thorium (Th)
Option C	Plutonium (Pu)
Option D	Neptunium (Np)
Correct Option	A

Q. No. 72 0321072	Actinide elements often form highly stable and colorful coordination complexes. What is the primary reason for their colorful nature?
Option A	Absorption of specific wavelengths of light
Option B	Emission of specific wavelengths of light
Option C	High reactivity with oxygen
Option D	Formation of covalent bonds with ligands
Correct Option	A

Q. No. 73	Which of the following is a Bronsted-Lowry acid but not a Lewis acid?
-----------	---

0321073	
Option A	HCl
Option B	H ₂ O
Option C	AlCl ₃
Option D	NH ₃
Correct Option	B

Q. No. 74 0321074	What is the pH of a solution with a hydrogen ion concentration of 10 ⁻³ M?
Option A	3
Option B	2
Option C	1
Option D	4
Correct Option	A

Q. No. 75 0321075	In UV-Vis spectroscopy, the Beer-Lambert law relates absorbance (A), molar absorptivity ( , path length (l), and concentration (c) of a solution. What is the formula for the Beer-Lambert law?
Option A	
Option B	
Option C	
Option D	
Correct Option	D

Q. No. 76 0321076	Which of the following types of spectroscopy is especially useful for studying the vibrational and rotational transitions of molecules?
Option A	Infrared spectroscopy
Option B	UV-Vis spectroscopy
Option C	Mass spectrometry
Option D	NMR spectroscopy
Correct Option	A

Q. No. 77 0321077	When using absorption spectroscopy, the absorption peak is typically observed at a specific wavelength or frequency. What does the peak position indicate about the sample?
Option A	The concentration of the sample
Option B	The path length of the sample
Option C	The energy difference between electronic or vibrational energy levels
Option D	The refractive index of the sample
Correct Option	C

Q. No. 78 0321078	Which of the following alcohols is considered a tertiary alcohol?
Option A	Ethanol
Option B	Propanol
Option C	Isopropyl alcohol
Option D	Butanol
Correct Option	C

Q. No. 79 0321079	Phenol can undergo electrophilic aromatic substitution reactions. Which position(s) on the phenol ring are most susceptible to electrophilic attack?
Option A	Ortho and para positions
Option B	Meta position
Option C	Only the para position
Option D	All positions equally
Correct Option	C

Q. No. 80 0321080	Which carboxylic acid is commonly found in vinegar and has the chemical formula C ₂ H ₄ O ₂ ?
----------------------	--

Option A	Formic acid
Option B	Acetic acid
Option C	Propionic acid
Option D	Butyric acid
Correct Option	B

Q. No. 81 0321081	What is the systematic name for the ether with the chemical formula $C_4H_{10}O$?
Option A	Diethyl ether
Option B	Methyl propyl ether
Option C	Ethyl isopropyl ether
Option D	Butyl methyl ether
Correct Option	B

Q. No. 82 0321082	In a thermodynamic system, what is the internal energy of a system primarily a measure of?
Option A	The system's kinetic energy
Option B	The system's potential energy
Option C	The system's total energy
Option D	The system's thermal energy
Correct Option	D

Q. No. 83 0321083	The second law of thermodynamics states that:
Option A	Energy cannot be created or destroyed, only converted.
Option B	Energy spontaneously flows from cold objects to hot objects.
Option C	The entropy of an isolated system never decreases.
Option D	The total energy of an isolated system remains constant.
Correct Option	C

Q. No. 84 0321084	Which of the following processes is an example of an adiabatic process?
Option A	Boiling water in an open container
Option B	Heating a closed container of gas at constant pressure
Option C	Compressing a gas rapidly without heat exchange
Option D	Cooling a gas at constant volume
Correct Option	C

Q. No. 85 0321085	The term "Gibbs free energy" (G) is used to determine the spontaneity of a process. What is the relationship between Gibbs free energy and spontaneity?
Option A	 < 0, the process is spontaneous
Option B	 = 0, the process is spontaneous
Option C	 > 0, the process is spontaneous
Option D	 is not related to spontaneity
Correct Option	A

Q. No. 86 0321086	According to the third law of thermodynamics, as the temperature of a system approaches absolute zero (0 K), the entropy of the system approaches:
Option A	Zero
Option B	Infinity
Option C	A constant value
Option D	Negative infinity
Correct Option	A

Q. No. 87 0321087	What is the relationship between the standard cell potential (E° cell) and the Gibbs free energy change () for an electrochemical cell reaction?
Option A	

Option B	
Option C	
Option D	
Correct Option	A

Q. No. 88 0321088	What is the standard electrode potential of a hydrogen electrode at 25°C and 1 atm pressure?
Option A	0 V
Option B	0.1 V
Option C	0.5 V
Option D	1 V
Correct Option	A

Q. No. 89 0321089	What is the primary purpose of a salt bridge in an electrochemical cell?
Option A	To complete the circuit
Option B	To prevent excessive heating
Option C	To maintain electrical neutrality in the half-cells
Option D	To increase the rate of the redox reaction
Correct Option	C

Q. No. 90 0321090	Which type of surfactant forms micelles in solution?
Option A	Anionic surfactant
Option B	Cationic surfactant
Option C	Nonionic surfactant
Option D	Amphoteric surfactant
Correct Option	C

Q. No. 91 0321091	Which term is used to describe two molecules that are non-superimposable mirror images of each other?
Option A	Conformational isomers
Option B	Diastereomers
Option C	Enantiomers
Option D	Structural isomers
Correct Option	C

Q. No. 92 0321092	What is the relationship between the following pair of compounds: (S)-2-chlorobutane and (R)-2-chlorobutane?
Option A	Constitutional isomers
Option B	Enantiomers
Option C	Diastereomers
Option D	Identical compounds
Correct Option	B

Q. No. 93 0321093	Which of the following terms describes a type of colloid where liquid droplets are dispersed in another liquid?
Option A	Sol
Option B	Emulsion
Option C	Gel
Option D	Foam
Correct Option	B

Q. No. 94 0321094	In a lyophobic colloid, the dispersing phase is:
Option A	Repelled by the dispersion medium
Option B	Attracted to the dispersion medium
Option C	Neutral towards the dispersion medium

Option D	Electrically charged
Correct Option	A

Q. No. 95 0321095	What is the coordination number of a central metal ion in a square planar complex?
Option A	4
Option B	5
Option C	6
Option D	8
Correct Option	A

Q. No. 96 0321096	Which ligand can form chelate complexes by donating multiple electron pairs to the central metal ion?
Option A	NH ₃
Option B	H ₂ O
Option C	EDTA
Option D	CO
Correct Option	C

Q. No. 97 0321097	In a redox reaction, which species loses electrons?
Option A	Oxidizing agent
Option B	Reducing agent
Option C	Reactant
Option D	Product
Correct Option	A

Q. No. 98 0321098	What is the oxidation state of hydrogen in the compound H ₂ O ₂ ?
Option A	-1
Option B	0
Option C	+1
Option D	+2
Correct Option	B

Q. No. 99 0321099	In which type of non-aqueous solvent would you expect ionic compounds to be highly soluble?
Option A	Polar protic solvent
Option B	Polar aprotic solvent
Option C	Non-polar solvent
Option D	None of the above
Correct Option	B

Q. No. 100 0321100	In IR spectroscopy, which region of the electromagnetic spectrum is primarily used to study molecular vibrations?
Option A	Ultraviolet (UV) region
Option B	Infrared (IR) region
Option C	Visible (Vis) region
Option D	Microwave region
Correct Option	B