

CHP-413 Biophysical Chemistry

Item Text	Option Text 1	Option Text 2	Option Text 3	Option Text 4
Which of the following is not true about secondary protein structure?	The hydrophilic/hydrophobic character of amino acid residues is important to secondary structure	The ability of peptide bonds to form intramolecular hydrogen bonds is important to secondary structure	The alpha helix, beta pleated sheet and beta turns are examples of protein secondary structure	The steric influence of amino acid residues is important to secondary structure
Unfolding of a protein can be termed as _____	Renaturation	Denaturation	Oxidation	Reduction
What is the main function of t-RNA?	Proof reading	Inhibits protein synthesis	Identifies amino acids and transport them to ribosomes	improve protein synthesis
What is the composition of nucleotide?	a sugar + a phosphate	a base + a sugar	a base + a phosphate	base + a sugar + phosphate
The polypeptide chains in chymotrypsin are linked by _____	Hydrogen bonds	Ionic bond	Disulfide bond	SH-SH bond
Protein that contains a nucleic acid derivative of riboflavin is called _____	Nucleic acid	Amino acid	Flavoprotein	m-RNA
Ligation enzymes are used for ligating newly synthesized okazaki fragments. What holds true for okazaki fragments?	Okazaki fragments are short fragments of DNA formed on the leading strand	Okazaki fragments are large fragments of DNA formed on the lagging strand	Okazaki fragments are short fragments of DNA formed on the lagging strand	Okazaki fragments are large fragments of DNA formed on the leading strand
Which of the following is true about Michaelis-Menten kinetics?	K_m , the Michaelis constant, is defined as that concentration of substrate at which enzyme is working at maximum velocity	It describes single substrate enzymes	K_m , the Michaelis constant is defined as the dissociation constant of the enzyme-substrate complex	It assumes covalent binding occurs between enzyme and substrate

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The surface of integral membrane proteins that is in contact with the phospholipid tail groups is	Charged	Hydrated	less hydrophobic than the protein core.	more hydrophobic than the protein core.
The major source of energy to perform cellular functions such as exocytosis, endocytosis, movement, and transmission of nerve impulses is	Adenosine Triphosphate (ATP)	Flavin Adenine Dinucleotide (FAD)	Adenosine monophosphate (AMP)	Adenosine diphosphate (ADP)
Hydrolysis of phosphate group in ATP is an	exergonic process	endergonic process	endothermic process	Thermal process
Which of the following options, A – D, are the pyrimidine bases found in DNA?	uracil and thymine	thymine and cytosine	adenine and thymine	cytosine and uracil
According to transition state theory, a decrease in the free energy of activation (ΔG) will result in	a decrease in enzyme binding specificity.	a decrease in reaction rate.	an increase in enzyme binding specificity.	an increase in reaction rate.
If proteins are separated according to their electrophoretic mobility then the type of electrophoresis is:	SDS PAGE	Affinity Electrophoresis	Electro focusing	Free flow electrophoresis
Which is an example of chemical to osmotic energy conversion that occurs in living organisms?	ATP-driven muscle contraction	ATP-dependent photon emission in fireflies	light-induced electron flow in chloroplasts	ATP-driven active transport across a membrane
Given a healthy individual with a normal metabolic rate, which of the following compounds is the most energy rich?	FADH_2	GTP	NADH	ATP
Ionic gradient in which part of the mitochondrion drives the synthesis of ATP?	matrix	outer membrane	inner membrane	DNA
Besides turning enzymes on or off, what other means does a cell use to control enzymatic activity?	cessation of all enzyme formation	compartmentalization of enzymes into defined organelles	exporting enzymes out of the cell	connecting enzymes into large aggregates .

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According to laws of thermodynamics, the energy of the Universe is _____ whereas the entropy _____	constant, increases	constant, decreases	increases, remains constant	decreases, remains constant
Identify the purine base of nucleic acids in the following.	Cytosine	Thymine	Uracil	Adenine