Question 1

The pKa of each amino acid residue in a protein will not be influenced by the adjacent residue.
T/F?
Answer: https://biology-forums.com/index.php?topic=662700

Question 2

Oxidation-reduction reactions, which are the basis of many biochemical reactions and pathways, cannot take place in the absence of oxygen.
T/F?
Answer: https://biology-forums.com/index.php?topic=662666

Question 3

Fetal hemoglobin has a higher affinity for oxygen than does maternal hemoglobin because it has a higher affinity for the allosteric regulator 2,3-bisphosphoglycerate.
T/F?
Answer: https://biology-forums.com/index.php?topic=662826

Question 4

Clathrin is a self-associating protein, which is able to form cage-like structures, which facilitate receptor-mediated endocytosis.
T/F?
Answer: https://biology-forums.com/index.php?topic=663023

Question 5

A thermodynamically unfavorable reaction can become favorable when coupled to a highly endergonic reaction.
T/F?
Answer: https://biology-forums.com/index.php?topic=662728

Question 6

Calculate the amount of energy required to make one mole of hexose from CO2 and water by photosynthesis if the average photon has an energy of 2.77 × 10-19 J and 48 photons are required for each 6C sugar. Assume the efficiency of photosynthesis is ~35%.
Answer: https://biology-forums.com/index.php?topic=662997

Question 7

Glycolysis is regulated primarily by:
A) the availability of glucose-6-phosphate.
B) three strongly endergonic, nonequilibrium reactions.
C) three strongly exergonic, nonequilibrium reactions.
D) allosteric effectors of pyruvate kinase.
E) phosphorylation of phosphofructokinase.
Answer: https://biology-forums.com/index.php?topic=662935

Question 8

Which of the following statements is FALSE?
A) Glucagon increases cAMP levels in the liver in response to the fasting state.
B) Epinephrine causes mobilization of triacylglycerols from adipose tissue in response to stress.
C) Insulin decreases gluconeogenesis in the liver and increases glucose uptake and glycolysis in muscle.
D) Glycogen phosphorylase is an enzyme target of insulin but not of glucagon.
E) Phosphofructokinase-1 is an enzyme target of glucagon.
Answer: https://biology-forums.com/index.php?topic=663064

Question 9

DNA methylation in eukaryotes:
A) is part of the epigenetic process.
B) occurs only on cytosine residues.
C) is maintained by specific DNA methyl transferases.
D) is inhibited by 5'-azacytidine.
E) all of the above.
Answer: https://biology-forums.com/index.php?topic=663278

Question 10

Both myoglobin and hemoglobin exhibit cooperative binding to oxygen.
T/F?
Answer: https://biology-forums.com/index.php?topic=662822

Question 11

_____ chromatography is used to separate proteins based on their surface charge.
Answer: https://biology-forums.com/index.php?topic=662783

Question 12

Which statement is CORRECT?
A) Both phosphodiester and glycosidic bonds in RNA and DNA are hydrolyzed in acid solution.
B) Both RNA and DNA are hydrolyzed in mild alkaline solution.
C) DNA is more unstable when dehydrated than when in solution
D) RNA is not hydrolyzed in mild alkaline solution.
E) Both A and B
Answer: https://biology-forums.com/index.php?topic=662735

Question 13

A Lineweaver-Burk plot can be used to determine KM using initial-rate data for an enzyme-catalyzed reaction.
T/F?
Answer: https://biology-forums.com/index.php?topic=662865

Question 14

Acetyl CoA is a feed forward activator of the enzyme _____ ensuring sufficient oxaloacetate for the citric acid cycle to continue.
Answer: https://biology-forums.com/index.php?topic=662971

Question 15

Both type I or type II topoisomerases carry out their catalytic activity via a covalent phosphodiester intermediate between a phosphate group on the DNA and a tyrosine hydroxyl group on the enzyme.
T/F?
Answer: https://biology-forums.com/index.php?topic=663147

Question 16

Antibiotics that inhibit translation are useful because:
A) the translational machinery of eukaryotes is sufficiently different to that of bacteria.
B) microorganisms can develop resistance to other antibiotics.
C) antibiotic resistance genes are often carried on plasmids rather than the bacterial chromosome.
D) different antibiotics can inhibit different steps of translation.
E) they do not cross the cell membrane in higher animals.
Answer: https://biology-forums.com/index.php?topic=663247