

All the following statements about nucleic acids are true EXCEPT

Nucleotide consists of nucleoside and one nitrogen base .a ☒

Phosphodiester linkages are formed between phosphate of C5 and hydroxyl of C3 of pentose of adjacent nucleotides .b ☐

DNA usually is double strands except in viruses, it may be a single strand .c ☐

Denaturation of tRNA means lose its functional shape .d ☐

الإجابة الصحيحة هي:

Nucleotide consists of nucleoside and one nitrogen base

All the following statements concerning carbohydrates are true EXCEPT

Glucose is the is the main source of energy in the human body .a ☐

The polysaccharide found in exoskeleton of insects is N-acetylglucosamine .b ☒

Lactose consists of glucose and galactose .c ☐

Heteropolysaccharides found in peptidoglycan of bacterial cell wall .d ☐

الإجابة الصحيحة هي:

The polysaccharide found in exoskeleton of insects is N-acetylglucosamine

All the following statements about carbohydrates are true EXCEPT

Amylose is non-branched polymer of α -glucose .a ☐

Heteropolysaccharides found in extracellular matrix of animal tissue .b ☐

Starch is the major structural polysaccharide of plants .c ☒

Fructose is a structural isomer of glucose .d ☐

الإجابة الصحيحة هي:

Starch is the major structural polysaccharide of plants

**Which one of the following statements about
?protein structure is correct**

The stability of quaternary structure .a ☐
in proteins is mainly a result of
covalent bonds among the subunits

The primary structure of a protein .b ☒
refers to the number and sequence
of amino acids

Primary, secondary and tertiary .c ☐
structures can be stabilized by
hydrogen bonds

The α -helix can be composed of .d ☐
more than one polypeptide chain

الإجابة الصحيحة هي:

The primary structure of a protein refers to
the number and sequence of amino acids

Which of the following concerning protein is false

Denaturation of protein results in destruction of ionic bonds .a ☐

Tertiary structure can be stabilized by S-S bonds .b ☐

Hydrogen bond can be formed between R groups of threonine and leucine .c ☒

Hemoglobin has quaternary structure .d ☐

الإجابة الصحيحة هي:

Hydrogen bond can be formed between R groups of threonine and leucine

All of the following statements are true about lipids EXCEPT

The components of a phospholipid molecule are bonded by ester bonds .a ☐

Hydrolysis of one molecule of a triglyceride to glycerol and fatty acids needs three molecules of water .b ☐

Triglycerides store energy in plant and animal tissues .c ☐

Triglyceride is amphipathic molecule .d ☒

الإجابة الصحيحة هي:

Triglyceride is amphipathic molecule

Which of the following statements about carbohydrates is false?

Glycogen is branched polymer of α -glucose .a ☐

Deoxyribose has two chiral centers .b ☐

Fructose has hydroxyl group attached to C_3 on the right side of Fischer projection .c ☒

Glucose and fructose are hexoses .d ☐

الإجابة الصحيحة هي:

Fructose has hydroxyl group attached to C_3 on the right side of Fischer projection

Where would you expect to find serine and alanine in a globular protein in aqueous solution

- a ☐ Both serine and alanine would be on the surface of the globular protein
- b ☒ Alanine would be in the inside, and serine would be on the surface of globular protein.
- c ☐ Serine would be in the inside, and alanine would be on the surface of the globular protein.
- d ☐ Both serine and alanine would be in the inside of the globular protein

الإجابة الصحيحة هي:

Alanine would be in the inside, and serine would be on the surface of globular protein.

Which of the following statements concerning nucleic acids is not correct?

- a ☐ RNA usually single strand
- b ☒ If one strand of a DNA molecule has the sequence of bases 5'-ATTGCA-3', the other strand would have the sequence 5'-TAACGT-3'
- c ☐ In nucleotide, the C-1 carbon of pentose binds to the N-1 nitrogen of pyrimidine base
- d ☐ In nucleotide, the C-5 of the pentose is in ester linkage with the phosphate group

الإجابة الصحيحة هي:

If one strand of a DNA molecule has the sequence of bases 5'-ATTGCA-3', the other strand would have the sequence 5'-TAACGT-3'

**Which of the following statements is false
?about fats**

Trans-fats are more solid than cis-fats at room temperature .a ☐

During hydrogenation, oil can be transformed into fat .b ☐

The conformation of fatty acid with cis double bonds is fully extended .c ☒

Saturated fatty acids close together tightly .d ☐

الإجابة الصحيحة هي:

The conformation of fatty acid with cis double bonds is fully extended

Which of the following about protein is not true?

The peptide bonds (C-N bonds) cannot rotate .a ☐

Peptide bond usually found in a .trans conformation .b ☐

Hydrophilic amino acids residues found the interior of a water-soluble globular protein .c ☒

The ability of peptide bonds to form intrachain hydrogen bonds is important to secondary structure .d ☐

The difference between an essential and non-essential amino acids is

- a ☒ An essential amino acid must be provided in the diet
- b ☐ Non-essential amino acid must be provided in the diet
- c ☐ An essential amino acid is synthesized by an organism
- d ☐ Non-essential amino acid is not necessary for our body

الإجابة الصحيحة هي:

An essential amino acid must be provided in the diet

Denaturation of a protein

- can only occur in a protein with quaternary structure .a ☐
- disrupts the secondary, tertiary, or quaternary structure of a protein .b ☒
- changes the primary structure of a protein .c ☐
- hydrolyzes peptide bonds .d ☐

الإجابة الصحيحة هي:

disrupts the secondary, tertiary, or quaternary structure of a protein

Ionic bonds can be formed between the side chains of

glutamine and phenylalanine .a ☐

arginine and aspartate .b ☒

alanine and leucine .c ☐

serine and asparagine .d ☐

aspartate and glutamate .e ☐

الإجابة الصحيحة هي:

arginine and aspartate