Water:

1. Wrong statements :

In Haworth projections the oxygen is on the left *

It's more convenient to represent furanoses by the less strained chair

configuration *

2. For hydrogen bonding.. it's between an electronegative atom and a hydrogen connected to :

a) Iodine

b) Electronegative atom *

c) Carbon

d) Sulfur

Acid base and buffers:

3. $H_2Po_4^-$: HPo_4^{-2} 25:75

Pka:

$H_3Po_4^-$ $\overset{2.14}{\rightleftharpoons}$ $H_2Po_4^-$, $H_2Po_4^-$ $\overset{7.2}{\rightleftharpoons}$ HPo_4^{-2} , HPo_4^{-2} $\overset{12.4}{\rightleftharpoons}$ Po_4^{-3}

pH = pka + log([conjugate base]/ [acid])

pH = 7.2 + log(75/25)

c) 7.7 *

Aminoacids:

1. The group that contains only polar amino acids among the following :
   a) Phe, ser,tyr
   b) Cys, ser,asp *
   c) glu,Met, ala
   d) Pro,leu, trp
2. The amino acid that moves further/faster towards the anode :
   a) Asp or glu (both of them are true but I don't remember which one was among the choices) *

Protein: structure purification & characterization

1. Wrong statement about quaternary structure :
   Contain at least 3 or more polypeptide chains

2. Wrong statements :

In Haworth projections the oxygen is on the left *

It's more convenient to represent furanoses by the less strained chair

configuration *

3. True:

Phosphoproteins contain aminoacids estrified with phosphoric acid *

4. . True:

2ry structure of (proteins ?) .. hydrogen bonding between the backbone

with repeated patterns *

5. True:

a) Tryptophan is the precursor of serotonin*

6. True statement:

E) the type of glycosidic bond in polysaccharides determines their function *

7. Wrong :

Oxytocin have receptors only in the uterus *

Carbohydrates: classification, structure, properties

1. The non-reducing sugar of the following is :

a) Glucose
b) Fructose
c) Lactose
d) Sucrose *
e) Maltose

2. .True statement :

E) the type of glycosidic bond in polysaccharides determines their function *

3. .Wrong statement :

Carbohydrates are connected via non-covalent interaction to protein to form glycoproteins *

4. true :

Polysaccharides are mostly of the homopolysaccharides *

5. Wrong statements about cyclization of sugars :

C1 + C5 give cyclic hemiketal *
C2 + C6 give cyclic hemiacetal *

6. .the true statement :

a) Bacterial cel walls are polymers of NAM mononers
b) Chitin is composed of N-actyl-β-D-glucoseamine *

7. True :
   a) Cellulose .. β-glycosidic linkage *
   b) Cellulose.. extensive intra and intermolecular hydrophobic interaction between chains
   c) Cellulose is digested by some animals by their own
8. Wrong statement :
   Amylopectin can be completely degraded to glucose and maltose by the two amylases *

Lipids:

1. The non-valatile fatty acid of the following is :
   a) CH3(CH2)2COOH * (short-chained (
   b) CH3(CH2)18 COOH
2. True about hydrogenated/halogenated fatty acids :
   a) Lack fat-soluble vitamins (A,D,E, and K * (
   b) Less pleaswnt as cooking fat
   c) More liable to rancidity
3. True :
   a) Waxes are of no nutritional value *
   b) Waxes can be in solid and liquid states
4. One of the following doesn't contain glycerol :
   a) Sphingomyeline *
   b) Cephalins
   c) Cardiolipin

5. All of the following are 18-carbon fatty acids except :
   a) Palmitic *
   b) Oleic
   c) Stearic
   d) Linolenic
   e) Linoec
6. The true statement about cholesterol is :
   a) Cholesterol increase the fluidity of plasma membranes
   b) Vitamen D is the sourse of cholesterol
   c) Cholesterol is synthesized from acetyl-coA *
   d) Cholesterol can be obtained from animals and plants
   e) All tissues of human have cholesterol with nearly same amounts
7. True :
   Snake venum hydrolyses licithins *

8. Something about (thromboplastin)….. clotting of blood
9. Which lipoprotein among the following has the lowest density :
   a) Chylomicrons *

b) LDL
c) HDL

Nucleic acids:

1. Sugarless gum , DNA , ABO blood group determinants：
   They all contain reduced form of sugar
2. The true statement is：
   a) The ribose in RNA makes it more susceptible to hydrolysis *
   b) Both (DNA and RNA) are of multiple types with multiple functions
   c) Thymine is a modified (???)
   d) Both (DNA and RNA) are distributed in the nucleus
3. True：
   a) SiRNA regulates the translation of its mRNA *
   b) SiRNA .. natural (not synthetic (
   c) SiRNA units with proteins to do specific functions
4. Wrong about Denaturation of DNA：
   a) Mainly by heat and renaturation is by slow cooling
   b) It affects the 2ry and the sequence of the amino acids *
   c) Results in hyperchromaticity

5. Wrong：
   a) In α-helix of DNA the H-bonds are parallel to the axis of the helix *
6. True：
   a) Melting point of nucleic acids increase with increasing the A-T content
   b) Melting point(mid point of transition) decrease with decreasing G-C content *

7. The true statement is：
   a) The ribose in RNA makes it more susceptible to hydrolysis *
   b) Both (DNA and RNA) are of multiple types with multiple functions
   c) Thymine is a modified (???)
   d) Both (DNA and RNA) are distributed in the nucleus.

8. Regarding to denaturation of DNA , which of the following statements is not correct：
   a) Is Mainly by heat.. renaturation is by slow cooling
   b) It affects the 2 o structure and the sequence of the nucleic acids *
   c) Results in hyperchromicity

9. True：
   a) Melting point of nucleic acids increase with increasing the A-T content
   b) Melting point(mid point of transition) decrease with decreasing G-C

content *

Enzymes:

1. True :
   a) Cellulose .. β-glycosidic linkage *
   b) Cellulose.. extensive intra and intermolecular hydrophobic interaction between chains
2. Wrong :
   a) Carnosine dipeptide for……. Heavy *
   b) Glutathione, tripeptide, a scavenger for oxidizing agents
   c) Encephalons, pentapeptide, analgesics