Oxford Cambridge and RSA

A Level Chemistry B (Salters)

H433/01 Fundamentals of chemistry

Polymers and Life

Question Set 7

Multiple Choice Questions

1 Which statement about DNA is **not** true?

A DNA is a condensation polymer.

B Adenine and uracil join by 2 hydrogen bonds in DNA.

C Guanine and cytosine join by 3 hydrogen bonds in DNA.

D The backbone of DNA is made of phosphate and deoxyribose.

Your answer ☐

[1]

2 Which statement describes the secondary structure of a protein?

A the types of amino acids present

B the sequence of the amino acids

C attractions between groups causing folding of the protein helix

D hydrogen bonds causing a helix or sheet

Your answer ☐

[1]

3 What is correct for reactions involving enzymes?

A The enzyme works best at high temperature.

B The rate is zero order with respect to substrate at low substrate concentration.

C The half-life for the substrate is always constant.

D The rate is zero order with respect to substrate at high substrate concentration.

Your answer ☐

[1]

4 Which pair will **not** react together?

A $(CH_3)_3CCOCl$ and $(CH_3)_3CNH_2$

B CH_3COCl and CH_3OH

C $(CH_3)_3N$ and CH_3COCl

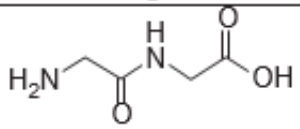
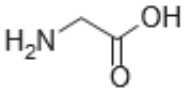
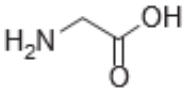
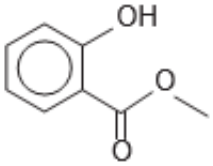
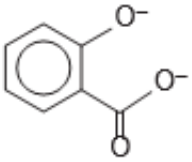
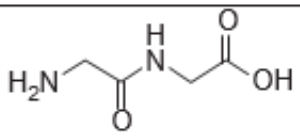
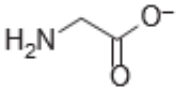
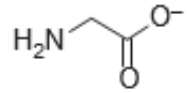
D C_6H_5OH and $(CH_3)_3CCOCl$

Your answer ☐

[1]

5 Some organic reagents are hydrolysed under either acidic or alkaline conditions.

Which row(s) show(s) the correct products of the hydrolysis reactions?

	Reagent	Conditions	Product 1	Product 2
1		Acidic		
2		Alkaline		CH_3OH
3		Alkaline		

A 1, 2 and 3

B Only 1 and 2

C Only 2 and 3

D Only 1

Your answer ☐ **[1]**

6 Which statement is **not** correct about amines?

A The lone pair on the nitrogen allows them to act as nucleophiles.

B They react with carboxylic acids to form amides.

C They form hydrogen bonds with water.

D They accept protons from water molecules.

Your answer ☐ **[1]**

7 Which statement/s is/are correct about solutions of amino acids with the general formula $RCH(NH_2)COOH$?

1 They contain zwitterions.

2 They react with sodium hydroxide.

3 They react with hydrochloric acid.

A 1, 2 and 3

B Only 1 and 2

C Only 2 and 3

D Only 1

Your answer ☐ **[1]**

8 Which statement(s) is/are correct about the active site of an enzyme?

1 It is formed by the tertiary structure of a protein.

2 It changes shape at high temperature.

3 It has the same shape as the substrate.

A 1, 2 and 3

B Only 1 and 2

C Only 2 and 3

D Only 1

Your answer ☐ **[1]**

9 Which statement(s) is/are correct about amino acids?

1 They all have a chiral centre.

2 They form buffer solutions in aqueous solution.

3 They form crystalline solids.

A 1, 2 and 3

B Only 1 and 2

C Only 2 and 3

D Only 1

Your answer ☐ **[1]**

Total Marks for Question Set 7: 9