

**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?

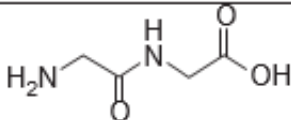
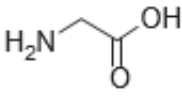
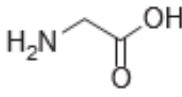
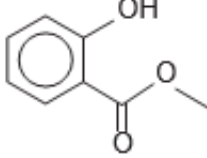
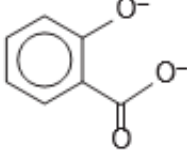
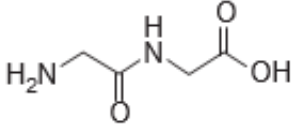
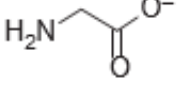
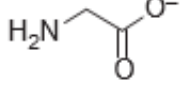
- A  $(\text{CH}_3)_3\text{CCOCl}$  and  $(\text{CH}_3)_3\text{CNH}_2$
- B  $\text{CH}_3\text{COCl}$  and  $\text{CH}_3\text{OH}$
- C  $(\text{CH}_3)_3\text{N}$  and  $\text{CH}_3\text{COCl}$
- D  $\text{C}_6\text{H}_5\text{OH}$  and  $(\text{CH}_3)_3\text{CCOCl}$

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 <sub>3</sub> OH
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**

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