

A Level Chemistry B (Salters)
H433/01 Fundamentals of chemistry

The Ozone Story

Question Set 4

Multiple Choice Questions

- 1 Which statement is correct about *electronegativity*?
- A It increases from left to right across a period.
 - B It increases down a group.
 - C It measures the negative charge on an atom.
 - D The smaller the electronegativity difference between two elements, the more likely the bond between them is ionic.

Your answer

[1]

- 2 Which one of these molecules has an overall dipole?

- A CH_2F_2
- B CF_4
- C BF_3
- D SF_6

Your answer

[1]

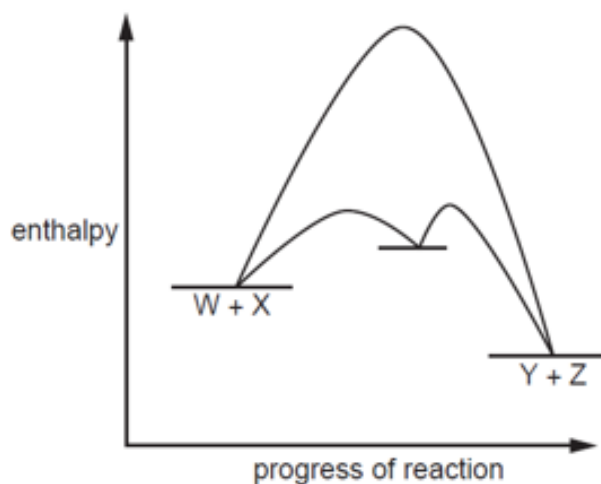
- 3 What describes the first step in the nucleophilic substitution reaction of ammonia with a haloalkane?

- A NH_3 attacks the halogen atom.
- B NH_2^- attacks the carbon atom next to the halogen
- C NH_3 forms a ² bond with its lone pair to the carbon atom next to the halogen.
- D The halogen atom is lost as a radical.

Your answer

[1]

- 4 The enthalpy profiles for the reaction $W + X \rightleftharpoons Y + Z$ are shown below, with and without a catalyst.



Which statement is correct?

- A The catalyst increases the yield of Y.
- B Increasing the temperature shifts the position of equilibrium to the products side.
- C The catalyst does not take part in the reaction.
- D The reverse reaction is speeded up by the catalyst.

Your answer

[1]

- 5 What is **not** correct for the reaction between aqueous OH^- ions and bromoethane?

- A OH^- ions behave as nucleophiles.
- B An alcohol is produced.
- C The reaction is faster if chloroethane is used.
- D The reaction occurs because of a polar C–Br bond.

Your answer

[1]

- 6 The methane concentration in the atmosphere has increased from 0.722 ppm in pre-industrial times to 1.80×10^{-4} % now.

What is the % increase in methane concentration?

- A 40%
- B 60%
- C 67%
- D 150%

Your answer

[1]

- 7 Which observation is correct?

- A A solution of bromine water forms a purple layer when hexane is added.
- B Aqueous silver nitrate forms a yellow precipitate when added to sodium bromide solution.
- C When iodobutane and chlorobutane are separately refluxed with aqueous silver nitrate, a precipitate forms faster with iodobutane.
- D Steamy fumes of hydrogen bromide are formed as the only gas when concentrated sulfuric acid is warmed with sodium bromide.

Your answer

[1]

- 8 The abundance of various gases in the air is shown in the table.

Gas	Abundance (by volume)
N ₂	78%
CO ₂	3.7×10^{-2} %
CH ₄	1.8 ppm

Which statement about the table is correct?

- A There is roughly 200 times as much nitrogen as carbon dioxide.
- B The abundance of nitrogen is 7.8×10^4 ppm.
- C There is roughly 200 times as much CO₂ as CH₄.
- D The abundance of CO₂ is 0.0037%.

Your answer

[1]

9 The relative rates of hydrolysis of chloropropane and iodopropane are compared.

Which statement is correct?

- A Chloropropane hydrolyses faster because the C–Cl bond is more polar than C–I.
- B Chloropropane hydrolyses faster because the C–Cl bond is weaker than C–I.
- C Iodopropane hydrolyses faster because the C–I bond is weaker than C–Cl.
- D Iodopropane hydrolyses faster because the C–I bond is more polar than C–Cl.

Your answer

[1]

10 Which type(s) of radiation can break covalent bonds?

- 1 IR
- 2 UV
- 3 visible

- 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 4: 10

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