Polymers – A2 2022 Chemistry P2&P3

1. June/2022/Paper_7405/2/No.3

0 3 This question is about 2-methylbut-1-ene.

0 3 . 1 Name the mechanism for the reaction of 2-methylbut-1-ene with concentrated sulfuric acid.

Outline the mechanism for this reaction to form the major product.

[5 marks]

Name of mechanism _____

Outline of mechanism to form major product

0 3 . 2 Draw the structure of the minor product formed in the reaction in Question **03.1**

Explain why this is the minor product.

[3 marks]

Structure of minor product

Explanation _____

_____

_____

_____

0 3 . 3 Draw the skeletal formula of a functional group isomer of 2-methylbut-1-ene.

[1 mark]

0 3 . 4 2-methylbut-1-ene can form a polymer.

State the type of polymerisation.

Draw the repeating unit for the polymer formed.

[2 marks]

Type of polymerisation _____

Repeating unit

2. June/2022/Paper_7405/3/No.27

Suberoyl chloride, $ClOC(CH_2)_6COCl$, is commonly used in the manufacture of polymers.

Which compound can form a polymer with suberoyl chloride?

[1 mark]

A $H_2NCH_2CH_2NH_2$ ⬭

B $ClOCCH_2COCl$ ⬭

C $CH_3CH_2CONH_2$ ⬭

D $HOOCCH_2COOH$ ⬭

3. June/2022/Paper_7405/3/No.28

Which polymer is **not** hydrolysed when heated with aqueous alkali?

[1 mark]

A Kevlar ⬭

B Nylon 6,6 ⬭

C Poly(propene) ⬭

D Terylene ⬭

4. June/2022/Paper_7405/3/No.32

Which type of interaction between polypeptide chains is mainly responsible for maintaining the secondary structure of a protein in the form of an alpha helix?

[1 mark]

A covalent bonds ⬭

B hydrogen bonds ⬭

C ionic interactions ⬭

D van der Waals forces ⬭