Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Polymers

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

Common substances used in everyday life often contain organic compounds.

(a) State an everyday use for each of the following compounds.

(i) $CH_3(CH_2)_{17}COO^-\ Na^+$ _____

(1)

(ii) $CH_3(CH_2)_{19}COOCH_3$ _____

(1)

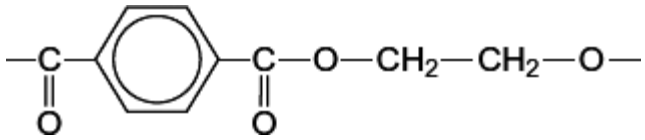
(iii) $[C_{16}H_{33}N(CH_3)_3]^+\ Br^-$ _____

(1)

(b) The following structures are the repeating units of two different condensation polymers.

For each example, name the type of condensation polymer. Give a common name for a polymer of this type.

(i)

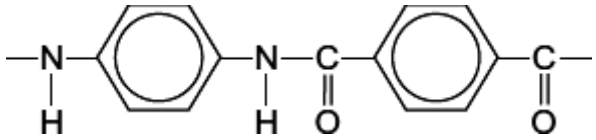


Type of condensation polymer _____

Common name _____

(2)

(ii)



Type of condensation polymer _____

Common name _____

(2)

(iii) Explain why the polymer in part (b)(ii) has a higher melting point than the polymer in part (b)(i).

_____

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_____

_____

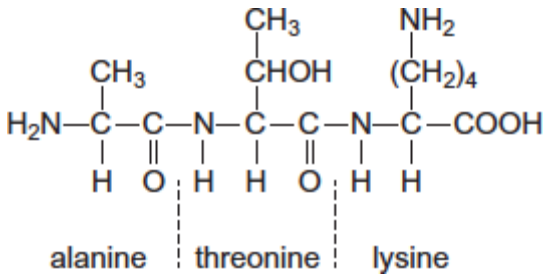
(2)

(Total 9 marks)

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Q2.

(a) The tripeptide shown is formed from the amino acids alanine, threonine and lysine.



(i) Draw a separate circle around **each** of the asymmetric carbon atoms in the tripeptide.

(1)

(ii) Draw the zwitterion of alanine.

(1)

(iii) Give the IUPAC name of threonine.

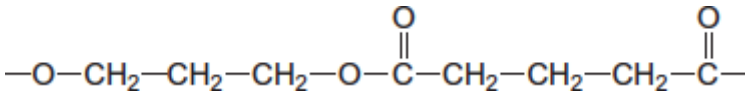
_____

(1)

(iv) Draw the species formed by lysine at low pH.

(1)

(b) The repeating unit shown represents a polyester.



(i) Name this type of polymer.

_____

(1)

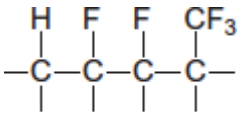
(ii) Give the IUPAC name for the alcohol used to prepare this polyester.

_____

(1)

(c) The repeating unit shown represents a polyalkene co-polymer. This co-polymer is made from two different alkene monomers.

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(i) Name the type of polymerisation occurring in the formation of this co-polymer.

_____

(1)

(ii) Draw the structure of each alkene monomer.

Alkene monomer 1 Alkene monomer 2

(2)

(d) One of the three compounds shown in parts (a), (b) and (c) cannot be broken down by hydrolysis.

Write the letter **(a)**, **(b)** or **(c)** to identify this compound and explain why hydrolysis of this compound does **not** occur.

Compound _____

Explanation _____

_____

_____

(2)

(Total 11 marks)

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