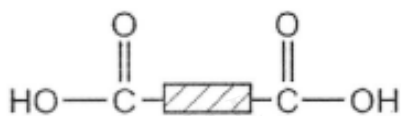


O Level Pure Chemistry MCQs

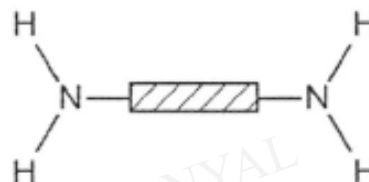
Organic Chemistry Test 6.0

Q1

A polymer X is hydrolysed and the two products are



and



What can be deduced about X?

- A It is held by weak van der Waals forces of attraction.
- B It is made by addition polymerisation.
- C It is made by condensation polymerisation.
- D It is *Terylene*.

Q2

Two compounds are thought to be isomers.

Possible similarities and differences are listed below. Which combination would confirm isomerism?

	similarity	difference
A	molecular mass	molecular structure
B	molecular structure	molecular mass
C	chemical properties	physical properties
D	physical properties	chemical properties

Q3

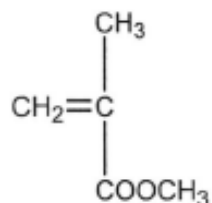
5 g of vegetable oil ($M_r = 800$) reacted completely with 900 cm^3 of hydrogen gas (measured at room temperature and pressure) to form margarine which is a saturated fat. How many C=C bonds are there in one molecule of the oil?

- A 3 B 4 C 5 D 6

Q4

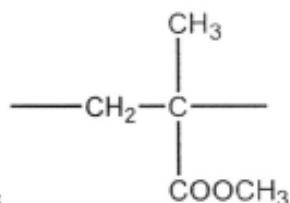
In an artificial hip joint, bone cement is used to attach the poly(ethene) cup for the joint to the pelvic girdle.

Bone cement is formed by the polymerisation of 2-methylpropenoate and the process is highly exothermic.



2-methylpropenoate

Which statements correctly describe this polymerisation?



- I The repeat unit of the polymer is
- II The formation of the cement occurs by addition polymerisation.
- III The amount of energy released during bond making is less than the amount of energy absorbed during bond breaking.

- A I and II only
- B I and III only
- C II and III only
- D I, II and III

Q5

An alcohol, X, was fully oxidised to a carboxylic acid. Neutralisation of the acid with aluminium oxide gives a salt with the formula $(\text{CH}_3\text{CO}_2)_3\text{Al}$.

What was alcohol X?

- A CH_3OH
- B $\text{CH}_3\text{CH}_2\text{OH}$
- C $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
- D $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$

Q6

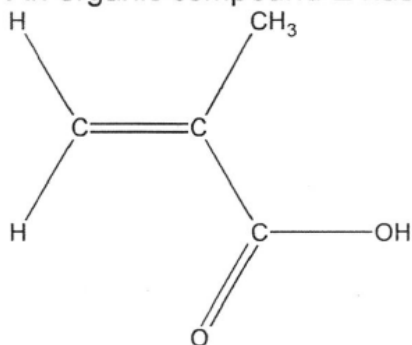
Ethanol can be manufactured from carbohydrates as well as ethene. The table gives statements about the processes involved.

In which row are both statements **incorrect**?

	process using carbohydrates	process using ethene
A	conversion to ethanol gives a low yield	conversion to ethanol gives a high yield
B	conversion to ethanol uses yeast as a catalyst	conversion to ethanol carried out at less than 100 atm.
C	conversion carried out with the reactants in gaseous state	conversion carried out in aqueous state
D	conversion to ethanol carried out at less than 100 atm.	ethene obtained from fractional distillation of hydrocarbons

Q7

An organic compound E has the following structural formula:

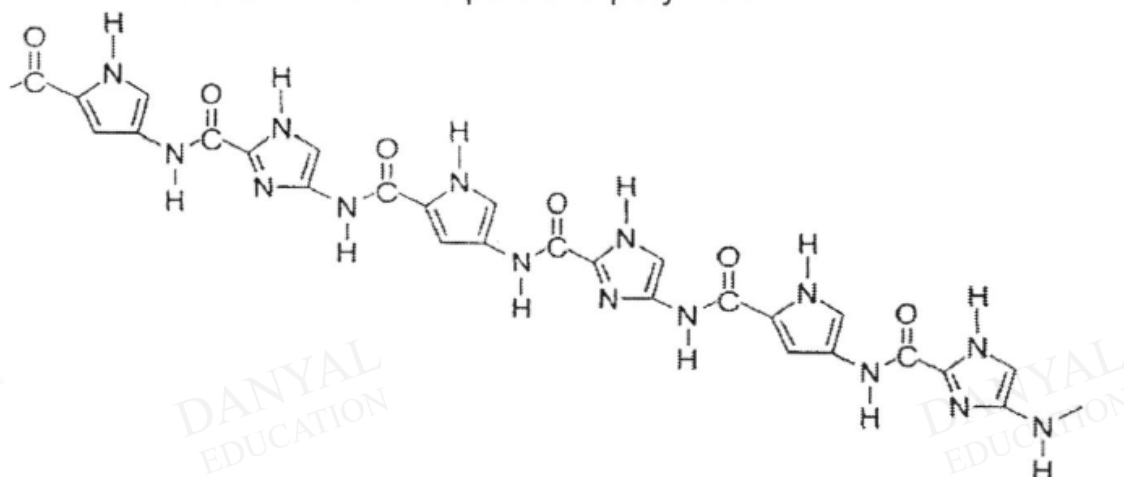


Which of the following statements about compound E is true?

- A** Compound E cannot be polymerised.
- B** No change in the colour of aqueous bromine when it is added to compound E.
- C** An aqueous solution of compound E reacts with copper to give hydrogen gas.
- D** Compound E reacts with ethanol to give a compound with relative molecular mass of 114.

Q8

The structure below shows part of a polymer.



- It is a polyamide.
- It is formed in an addition polymerisation reaction.
- The partial structure is that of nylon.
- It is formed from two different types of monomers.
- Each monomer has two different functional groups.

How many statements are correct?

- A** 2 **B** 3 **C** 4 **D** 5

Q9

The following reactions are carried out.

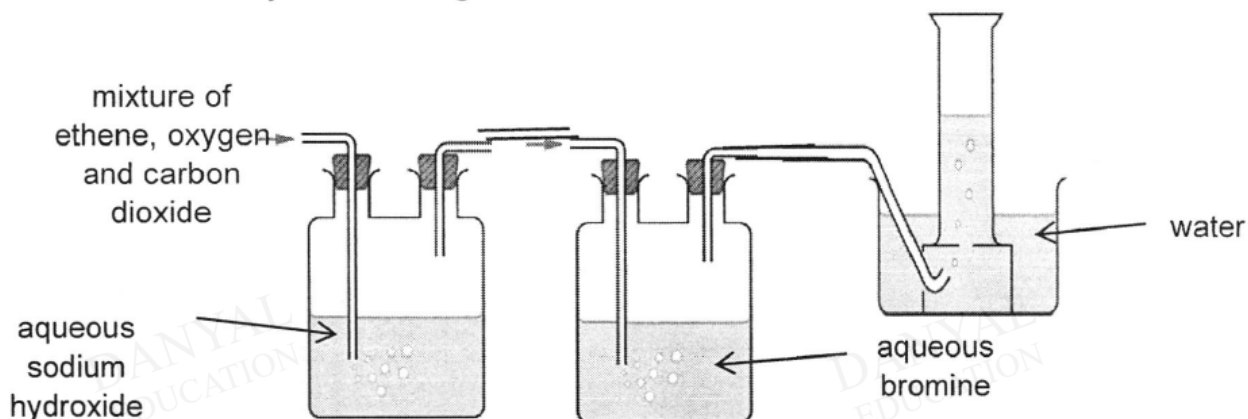
reaction	result
ethanoic acid is added to magnesium	gas X given off
ammonium ethanoate is warmed with aqueous sodium hydroxide	salt Y formed
ethanoic acid is added to aqueous ammonia	salt Z formed

What are X, Y and Z?

	X	Y	Z
A	ammonia	ammonium hydroxide	water
B	ammonia	sodium ethanoate	ammonium ethanoate
C	hydrogen	ammonium hydroxide	water
D	hydrogen	sodium ethanoate	ammonium ethanoate

Q10

A gaseous mixture of ethene, oxygen and carbon dioxide is passed through the apparatus shown. Only one of the gases is collected.



What is a property of the gas collected?

- A gas extinguishes burning splint
- B gas forms a white precipitate when bubbled through limewater
- C gas relights a glowing splint
- D gas turns acidified potassium manganate (VII) solution colourless

Answers

Organic Chemistry Test 6.0

Q1 C

Q2 A

Q3 D

Q4 A

Q5 B

Q6 C

Q7 D

Q8 B

Q9 D

Q10 C

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