



Resources available from

**kickstart
tutors**

Student number

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Name _____

Date _____

Attempt/Time taken _____

GCSE CHEMISTRY

Topic Paper: 7.2.3 Alcohols & 7.2.4 Carboxylic acids
Part 2

Time allowed: 20 minutes

Materials

For this paper you must have:

- the Periodic Table/Data Sheet, provided as an insert (enclosed)
- a ruler with millimetre measurements
- a calculator, which you are expected to use where appropriate.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- All working must be shown.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

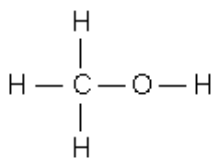
- The Periodic Table/Data Sheet is provided as in insert.
- You are reminded of the need for good English and clear presentation in your answers.
- When answering questions you need to make sure that your answer:
 - is clear, logical, sensibly structured
 - fully meets the requirements of the question
 - shows that each separate point or step supports the overall answer.



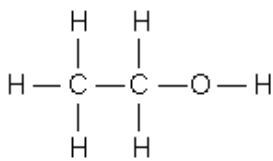
16 Marks



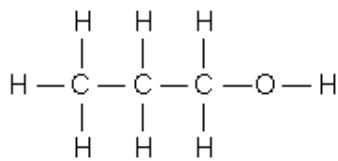
Q4. The structures shown are of the first three members of a homologous series of alcohols.



Methanol

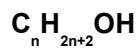
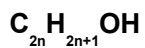
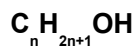


Ethanol



Propanol

(a) (i) Draw a ring around the correct general formula for alcohols.



(1)

(ii) What is the formula of the functional group for alcohols?

(1)

(b) Ethanol is the alcohol used in alcoholic drinks.

(i) When ethanol dissolves in water the solution formed is **not** alkaline.

Tick (✓) the reason why the solution formed is **not** alkaline.

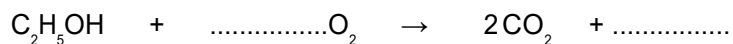
Reason	Tick (✓)
Ethanol can be used as a solvent.	
Ethanol dissolves in water to form hydroxide ions.	
Ethanol has only covalent bonds in its molecule.	

(1)



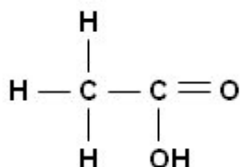
- (ii) Ethanol is used as a fuel because ethanol burns in oxygen.

Complete and balance the chemical equation for this reaction.



(2)

- (c) Ethanol can be oxidised to produce the compound shown.



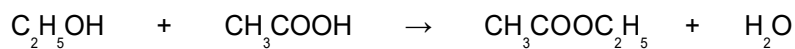
- (i) Draw a ring around the correct answer to complete the sentence.

When this compound dissolves in water, the solution formed is

acidic.
alkaline.
neutral.

(1)

- (ii) Ethanol reacts with this compound to produce the organic compound shown.



Complete the sentence.

The type of organic compound produced is

(1)

(Total 7 marks)

- Q5.** (a) This label has been taken from a bottle of vinegar.

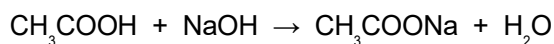




Vinegar is used for seasoning foods. It is a solution of ethanoic acid in water.

In an experiment, it was found that the ethanoic acid present in a 15.000 cm³ sample of vinegar was neutralised by 45.000 cm³ of sodium hydroxide solution, of concentration 0.20 moles per cubic decimetre (moles per litre).

The equation which represents this reaction is



Calculate the concentration of the ethanoic acid in this vinegar:

- (i) in moles per cubic decimetre (moles per litre);

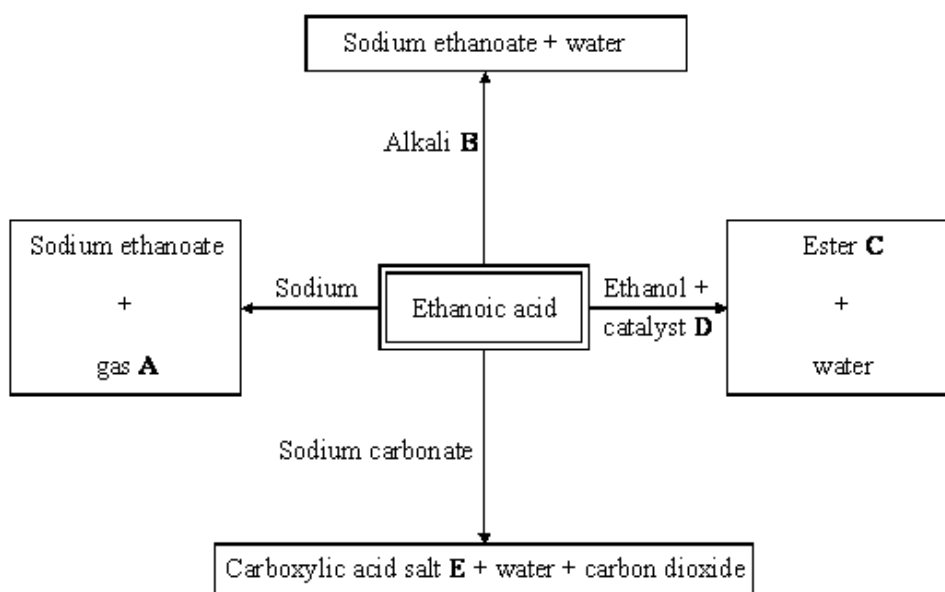
(2)

- (ii) in grams per cubic decimetre (grams per litre).

Relative atomic masses: H = 1; C = 12; O = 16.

(2)

- (b) The flow diagram shows some reactions of ethanoic acid.





Give the name of:

(i) gas **A**,

(1)

(ii) alkali **B**,

(1)

(iii) ester **C**,

(1)

(iv) catalyst **D**,

(1)

(v) carboxylic acid salt **E**.

(1)

(Total 9 marks)