

# 14.7 Carboxylic Acids

## Question Paper

Level	IGCSE
Subject	Chemistry (0620)
Exam Board	Cambridge International Examinations (CIE)
Topic	Organic Chemistry
Sub-Topic	14.7 Carboxylic Acids
Booklet	Question Paper

**Time Allowed:** 12 minutes

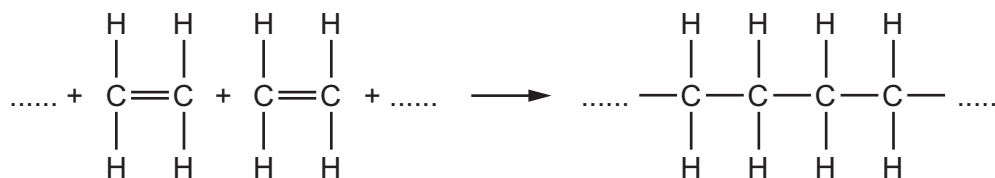
**Score:** /10

**Percentage:** /100

**Grade Boundaries:**

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 Ethene forms an addition polymer as shown.



Which terms describe this polymer?

- A a saturated compound called poly(ethane)
  - B a saturated compound called poly(ethene)
  - C an unsaturated compound called poly(ethane)
  - D an unsaturated compound called poly(ethene)
- 2 Which statement about carboxylic acids is **not** correct?
- A Aqueous ethanoic acid has a pH below pH 7.
  - B They contain the functional group –COOH.
  - C They produce carbon dioxide when reacted with a metal carbonate.
  - D Methyl orange turns yellow in aqueous ethanoic acid.
- 3 What are the properties of a dilute solution of ethanoic acid?

	smell	appearance
A	odourless	colourless
B	odourless	red
C	pungent smell	colourless
D	pungent smell	red

4 Which statements are correct for ethanoic acid?

- 1 It contains a carbon-oxygen double bond.
- 2 It contains two carbon atoms.
- 3 It decolourises bromine water.
- 4 It contains an –OH group.

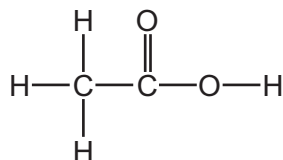
**A** 1 and 2 only

**B** 1 and 3

**C** 1, 2 and 4

**D** 2, 3 and 4

5 The structure of a compound, Y, is shown.



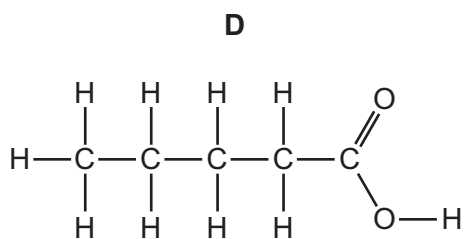
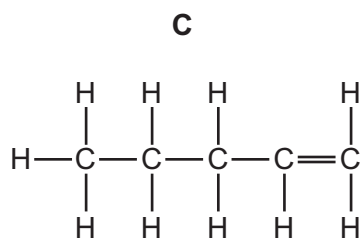
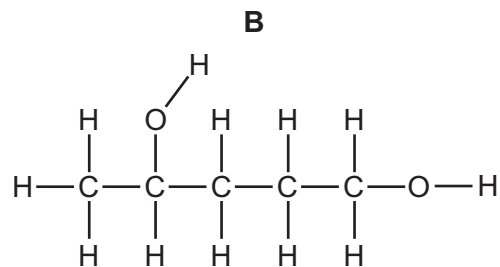
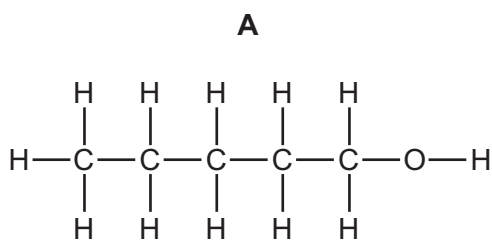
Which row describes some of the physical properties of Y?

	colourless	characteristic smell	dissolves in water
<b>A</b>	no	no	no
<b>B</b>	no	no	yes
<b>C</b>	yes	yes	no
<b>D</b>	yes	yes	yes

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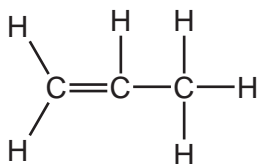
6 Which diagram shows the structure of pentanoic acid?



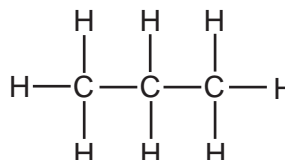
7 Three types of organic compound are alkanes, alkenes and alcohols.

Which structure does **not** belong to any of these three types of compound?

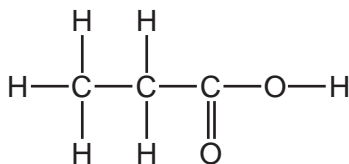
**A**



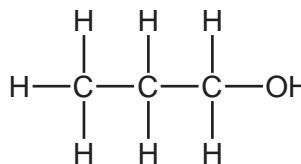
**B**



**C**

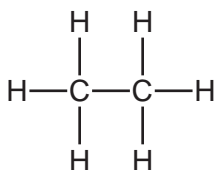


**D**

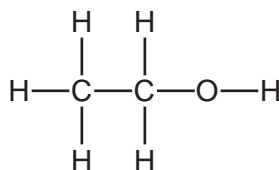


8 Which structure shows a carboxylic acid?

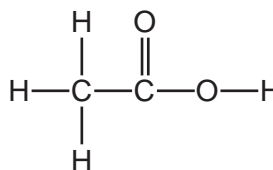
**A**



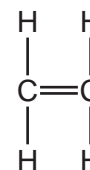
**B**



**C**



**D**



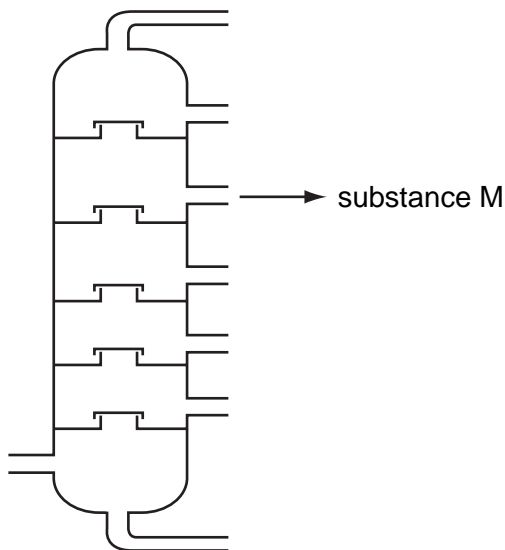
9 The table shows bonds that are present and bonds that are not present in compound X.

bond	
C–C	✓
C=C	x
C–H	✓
C–O	✓
C=O	✓
O–H	✓

What type of compound is X?

- A a carboxylic acid
- B an alcohol
- C an alkane
- D an alkene

10 The diagram shows an industrial process. Substance M is one of the substances produced by this process and is used as aircraft fuel.



What is this process and what is substance M?

	process	substance M
A	fractional distillation	paraffin
B	fractional distillation	petrol
C	thermal decomposition	paraffin
D	thermal decomposition	petrol