14.7 Carboxylic acids

01. 0620_m21_qp_22 Q: 38

The formula of an ester is $CH_3CH_2CH_2COOCH_2CH_2CH_3$.

Which acid and alcohol react together to make the ester?

	acid	alcohol
A	butanoic acid	butanol
B	butanoic acid	propanol
C	propanoic acid	butanol
D	propanoic acid	propanol

---

02. 0620_s21_qp_21 Q: 34

Compound Z contains carbon, hydrogen and oxygen.

Molecules of compound Z have four hydrogen atoms and two carbon atoms.

Compound Z can be made by oxidation of an alcohol.

What is compound Z?

A ethene

B ethanol

C ethanoic acid

D methyl methanoate

AceIGCSE
Paper Perfection, Crafted With Passion

---

03. 0620_s21_qp_22 Q: 34

Which statement about ethanol is **not** correct?

A Ethanol can be made by fermentation.

B Ethanol is oxidised to make ethanoic acid.

C Ethanol reacts with oxygen exothermically, making it a good fuel.

D Ethanol reacts with propanoic acid to make propyl ethanoate.

---

04. 0620_s21_qp_22 Q: 37

37 Which statements about ethanoic acid are correct?

1 It is a strong acid.

2 It reacts with ethanol to form an ester.

3 It has the formula CH_3COOH.

A 1 and 2 only **B** 1 and 3 only **C** 2 and 3 only **D** 1, 2 and 3

---

05. 0620_s21_qp_23 Q: 34

Ethanol is reacted with acidified potassium manganate(VII).

Which row describes the type of reaction and the type of organic compound formed?

	type of reaction	organic compound
A	oxidation	carboxylic acid
B	oxidation	alkene
C	dehydration	carboxylic acid
D	dehydration	alkene

AceIGCSE
Super Perfection,Crafted With Passion

06. 0620_w21_qp_21 Q: 39

Which statement about aqueous ethanoic acid is correct?

A It reacts with magnesium to produce a salt and hydrogen.

B It reacts with sodium hydroxide to produce a salt and hydrogen.

C It reacts with ammonium salts to produce ammonia.

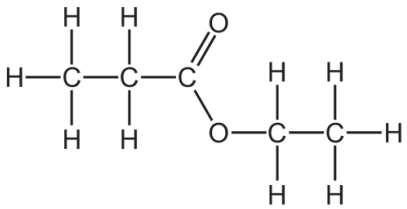
D It turns red litmus blue.

AceIGCSE
Paper Perfection,Crafted With Passion

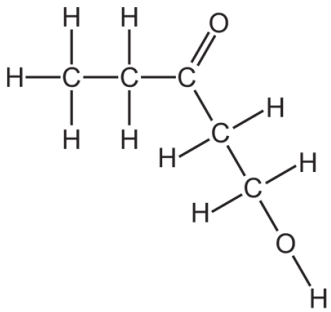
07. 0620_w21_qp_22 Q: 33

What is the structure of the ester formed from ethanoic acid and propanol?

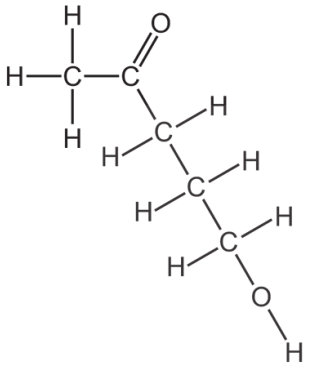
A



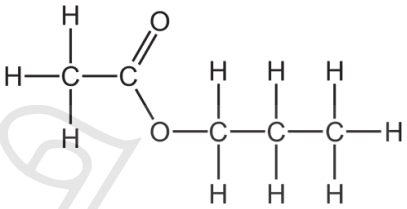
B



C



D



---

08. 0620_m20_qp_22 Q: 38

Ethanoic acid is a typical carboxylic acid.

Which statement about ethanoic acid is correct?

A It can be oxidised to produce ethanol.

B It is a proton acceptor.

C It is fully dissociated in water.

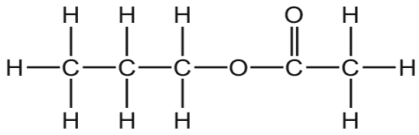
D It reacts with ethanol to produce ethyl ethanoate and water.

AceIGCSE
Paper Perfection,Crafted With Passion

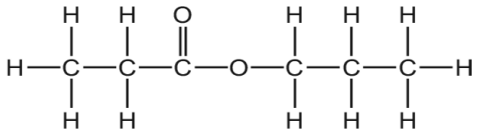
09. 0620_m20_qp_22 Q: 39

Which structure represents the ester made from ethanoic acid and propanol?

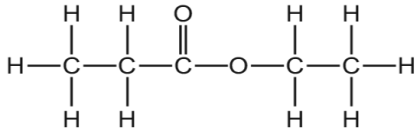
A



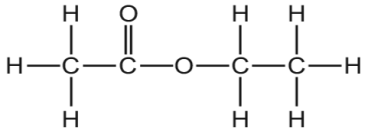
B



C



D

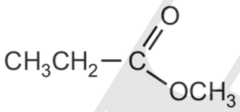


---

10. 0620_p20_qp_20 Q: 39

Esters are made by reacting an alcohol with a carboxylic acid.

Which acid and alcohol react together to form the following ester?



A propanoic acid and ethanol

B propanoic acid and methanol

C ethanoic acid and ethanol

D ethanoic acid and methanol

AceIGCSE
Paper Perfection Crafted With Passion

---

11. 0620_s20_qp_21 Q: 38

Some properties of an organic compound J are listed.

- It is a liquid at room temperature.
- It is soluble in water.
- A solution of J reacts with calcium carbonate to form carbon dioxide.
- A solution of J has a pH of 3.

In which homologous series does J belong?

A alkane

B alkene

C alcohol

D carboxylic acid

---

12. 0620_s20_qp_22 Q: 38

An organic compound, P, reacts with zinc to produce a gas, Q.

What are P and Q?

	P	Q
A	ethanoic acid	carbon dioxide
B	ethanoic acid	hydrogen
C	ethanol	carbon dioxide
D	ethanol	hydrogen

---

13. 0620_s20_qp_23 Q: 38

A small quantity of a solid chemical is added to a large excess of aqueous ethanoic acid.

No bubbles of gas are seen and the solid dissolves to give a colourless solution.

What was the solid chemical?

A calcium hydroxide

B copper(II) oxide

C magnesium

D sodium carbonate

---

14. 0620_w20_qp_21 Q: 39

Which statements about aqueous ethanoic acid are correct?

1 It is an alkane.

2 It reacts with sodium carbonate to form carbon dioxide.

3 It changes the colour of litmus solution from blue to red.

4 It is a hydrocarbon.

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

AceIGCSE
Paper Perfection Crafted With Passion

15. 0620_w20_qp_23 Q: 37

Propanol is oxidised by acidified potassium manganate(VII) in a similar way to ethanol.

Which compound is produced by the oxidation of propanol with acidified potassium manganate(VII)?

A CH_3CH_2OH

B $CH_3CH_2CH_2OH$

C CH_3COOH

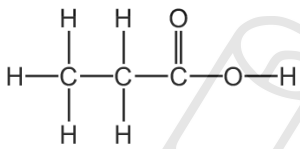
D CH_3CH_2COOH

---

16. 0620_m19_qp_22 Q: 39

The structure of a compound, G, is shown.

G is in the same homologous series as ethanoic acid.



Which row describes some of the properties of an aqueous solution of G?

	produces a gas with magnesium	turns methyl orange yellow
A	no	yes
B	no	no
C	yes	no
D	yes	yes

AceIGCSE
Paper Perfection,Crafted With Passion

---

17. 0620_s19_qp_21 Q: 38

Which statements about aqueous ethanoic acid are correct?

1 Ethanoic acid contains the functional group –COOH.

2 Ethanoic acid reacts with carbonates to produce hydrogen.

3 Ethanoic acid turns Universal Indicator paper blue.

4 Ethanoic acid has a pH lower than pH 7.

A 1 and 2 **B** 1 and 3 **C** 1 and 4 **D** 2 and 4

---

18. 0620_s19_qp_22 Q: 38

What are the properties of aqueous ethanoic acid?

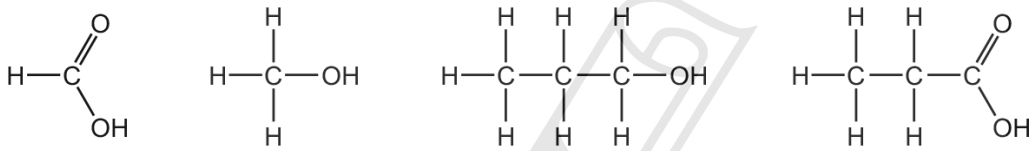
	decolourises bromine water	reacts with calcium carbonate to make carbon dioxide	turns damp red litmus blue
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

---

19. 0620_s19_qp_22 Q: 39

The structures of four molecules are shown.

1 2 3 4



Which molecules react together to form the ester propyl methanoate?

A 1 and 2 **B** 1 and 3 **C** 2 and 4 **D** 3 and 4

---

20. 0620_s19_qp_23 Q: 38

Which statement about aqueous ethanoic acid is correct?

A It reacts with metal carbonates to form salts, hydrogen and water.

B It reacts with metal oxides to form salts and oxygen.

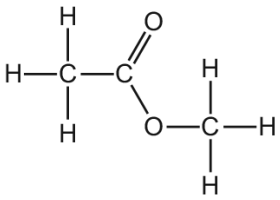
C It reacts with reactive metals to form salts and hydrogen.

D It turns damp red litmus paper blue.

AceIGCSE Paper 1 Questions Crafted With Passion

21. 0620_s19_qp_23 Q: 39

The structure of ester W is shown.



Which row gives the names of ester W and the carboxylic acid and alcohol from which it is made?

	name of ester W	carboxylic acid	alcohol
A	ethyl methanoate	ethanoic acid	methanol
B	ethyl methanoate	methanoic acid	ethanol
C	methyl ethanoate	ethanoic acid	methanol
D	methyl ethanoate	methanoic acid	ethanol

---

22. 0620_m18_qp_22 Q: 39

Which substances react together to form ethyl propanoate?

A ethanoic acid and propanol

B ethanol and propene

C ethene and propanol

D propanoic acid and ethanol

AceIGCSE
Paper Perfection, Crafted With Passion

23. 0620_s18_qp_22 Q: 39

What is the name of the organic product of the reaction shown?

$$CH_3COOH + CH_3CH_2OH \rightarrow$$

A ethyl ethanoate

B ethyl methanoate

C methyl ethanoate

D methyl propanoate

---

24. 0620_s18_qp_23 Q: 39

Which esters have the molecular formula $C_5H_{10}O_2$?

1 ethyl propanoate

2 propyl ethanoate

3 butyl methanoate

4 methyl butanoate

A 1, 2, 3 and 4

B 1, 2 and 3 only

C 1 and 2 only

D 3 and 4 only

---

25. 0620_w18_qp_21 Q: 36

Which two compounds are molecules which both contain a double bond?

A ethane and ethanoic acid

B ethane and ethanol

C ethene and ethanoic acid

D ethene and ethanol

---

26. 0620_w18_qp_21 Q: 38

When the alcohol $CH_3CH_2CH_2OH$ reacts with the carboxylic acid $CH_3CH_2CH_2COOH$ an ester is formed.

What is the name and structural formula of this ester?

	name	structural formula
A	butyl propanoate	$CH_3CH_2COOCH_2CH_2CH_2CH_3$
B	butyl propanoate	$CH_3CH_2CH_2COOCH_2CH_2CH_3$
C	propyl butanoate	$CH_3CH_2COOCH_2CH_2CH_2CH_3$
D	propyl butanoate	$CH_3CH_2CH_2COOCH_2CH_2CH_3$

AceIGCSE
Paper Perfection, Crafted With Passion

27. 0620_w18_qp_21 Q: 39

A solution of ethanol and water is left to stand in an open beaker in a warm room for three weeks.

Which statement explains what happens to the ethanol in the solution?

A The ethanol is dehydrated to ethene.

B The ethanol is hydrolysed to ethene.

C The ethanol is oxidised to ethanoic acid.

D The ethanol is reduced to ethanoic acid.

---

28. 0620_w18_qp_22 Q: 39

Which reaction can be used to make ethanoic acid?

A oxidation of ethanol

B oxidation of ethene

C reduction of ethanol

D reduction of ethene

---

29. 0620_w18_qp_23 Q: 39

Which statement about ethanoic acid is correct?

A It contains a $-C_2H_5$ group.

B It is a strong acid.

C It is formed by the reduction of ethanol.

D It reacts with alcohols to form esters.

AceIGCSE
Paper Perfection,Crafted With Passion

30. 0620_m17_qp_22 Q: 38

The structural formula of an organic compound is shown.

$$CH_3CH_2COOCH_3$$

What is the name of this compound?

A butanoic acid

B ethyl ethanoate

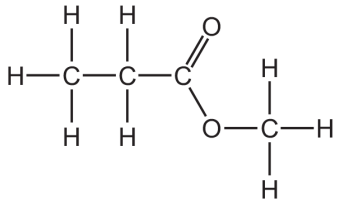
C methyl propanoate

D propyl methanoate

---

31. 0620_s17_qp_21 Q: 39

The structure of an ester is shown.



Which row is correct?

	name of ester	names of the carboxylic acid and the alcohol used to form the ester
A	methyl propanoate	methanoic acid and propanol
B	methyl propanoate	methanol and propanoic acid
C	propyl methanoate	methanoic acid and propanol
D	propyl methanoate	methanol and propanoic acid

---

32. 0620_s17_qp_22 Q: 39

The formula of an ester is $CH_3CH_2CH_2COOCH_2CH_2CH_3$.

Which acid and alcohol react together to make the ester?

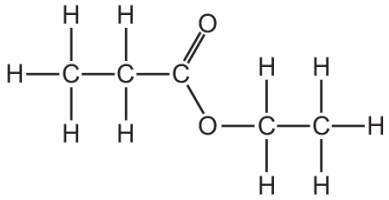
	acid	alcohol
A	butanoic acid	butanol
B	butanoic acid	propanol
C	propanoic acid	butanol
D	propanoic acid	propanol

AceIGCSE
Paper Perfection, Crafted With Passion

---

33. 0620_s17_qp_23 Q: 39

The structure of an ester is shown.



Which alcohol and carboxylic acid produce this ester?

	alcohol	carboxylic acid
A	ethanol	ethanoic acid
B	ethanol	propanoic acid
C	propanol	ethanoic acid
D	propanol	propanoic acid

---

34. 0620_w17_qp_21 Q: 39

Which pair of compounds can be used to prepare $CH_3CH_2COOCH_2CH_3$?

A ethanoic acid and ethanol

B ethanoic acid and propanol

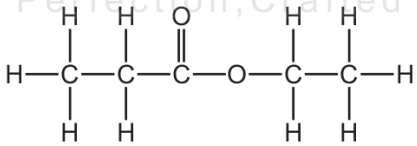
C propanoic acid and ethanol

D propanoic acid and propanol

AceIGCSE
Paper Perfection, Crafted With Passion

35. 0620_w17_qp_22 Q: 39

The structure of an ester is shown.



Which substances react to form this ester?

A ethanol and ethanoic acid

B ethanol and propanoic acid

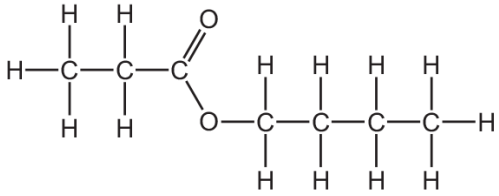
C propanol and ethanoic acid

D propanol and propanoic acid

---

36. 0620_w17_qp_23 Q: 39

The structure of an ester is shown.



Which combination of carboxylic acid and alcohol produces this ester?

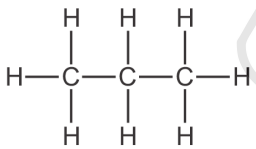
	carboxylic acid	alcohol
A	butanoic acid	ethanol
B	butanoic acid	propanol
C	ethanoic acid	butanol
D	propanoic acid	butanol

---

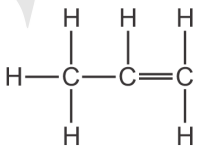
37. 0620_m16_qp_22 Q: 38

Which structure represents a compound that dissolves in water to form an acidic solution?

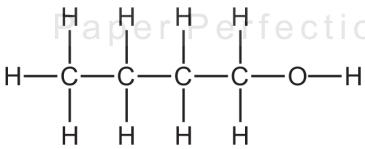
A



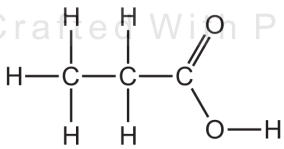
B



C



D

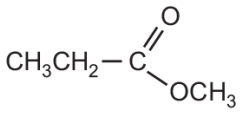


AceIGCSE
Paper Perfection, Crafted With Passion

38. 0620_p16_qp_20 Q: 39

Esters are made by reacting an alcohol with a carboxylic acid.

Which acid and alcohol react together to form the following ester?



A propanoic acid and ethanol

B propanoic acid and methanol

C ethanoic acid and ethanol

D ethanoic acid and methanol

---

39. 0620_s16_qp_21 Q: 37

Which compounds contain the same number of carbon, hydrogen and oxygen atoms?

W	X	Y	Z
ethyl methanoate	methyl ethanoate	methyl methanoate	ethyl ethanoate

A W and X **B** W and Y **C** X and Z **D** Y and Z

---

40. 0620_s16_qp_22 Q: 37

An ester is formed when a carboxylic acid reacts with an alcohol.

Which ester is formed when propanoic acid and ethanol react?

A $CH_3CO_2CH_2CH_3$

B $CH_3CO_2CH_2CH_2CH_3$

C $CH_3CH_2CO_2CH_3$

D $CH_3CH_2CO_2CH_2CH_3$

AceIGCSE
Paper Perfection,Crafted With Passion

SN	Paper	Q. No.	Answer
01	0620_m21_qp_22	38	B
02	0620_s21_qp_21	34	C
03	0620_s21_qp_22	34	D
04	0620_s21_qp_22	37	C
05	0620_s21_qp_23	34	A
06	0620_w21_qp_21	39	A
07	0620_w21_qp_22	33	D
08	0620_m20_qp_22	38	D
09	0620_m20_qp_22	39	A
10	0620_p20_qp_20	39	B
11	0620_s20_qp_21	38	D
12	0620_s20_qp_22	38	B
13	0620_s20_qp_23	38	A
14	0620_w20_qp_21	39	C
15	0620_w20_qp_23	37	D
16	0620_m19_qp_22	39	C
17	0620_s19_qp_21	38	C
18	0620_s19_qp_22	38	B
19	0620_s19_qp_22	39	C
20	0620_s19_qp_23	38	C
21	0620_s19_qp_23	39	C
22	0620_m18_qp_22	39	D
23	0620_s18_qp_22	39	A
24	0620_s18_qp_23	39	A
25	0620_w18_qp_21	36	C
26	0620_w18_qp_21	38	D
27	0620_w18_qp_21	39	C
28	0620_w18_qp_22	39	A
29	0620_w18_qp_23	39	D
30	0620_m17_qp_22	38	C
31	0620_s17_qp_21	39	B
32	0620_s17_qp_22	39	B
33	0620_s17_qp_23	39	B
34	0620_w17_qp_21	39	C
35	0620_w17_qp_22	39	B
36	0620_w17_qp_23	39	D
37	0620_m16_qp_22	38	D
38	0620_p16_qp_20	39	B
39	0620_s16_qp_21	37	A
40	0620_s16_qp_22	37	D

AceIGCSE
For Perfection, Crafted With Passion