

Exercise 2_1 Naming



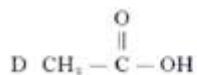
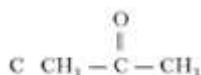
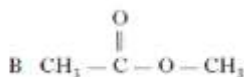
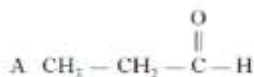
Write the date in the margin of your homework jotter.
Write the title of this Exercise as a heading: Exercise 2_1 Naming



For general revision of this area of the Unit, the [BBC Bitesize website](#) provides the basics and the [Chemguide website](#) will give an in depth understanding – often beyond the scope of the syllabus!

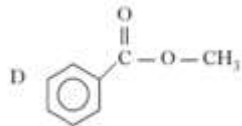
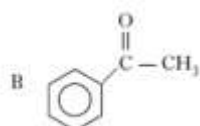
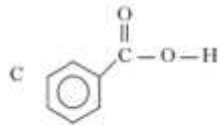
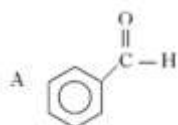
1.

Which of the following compounds is an alkanone?



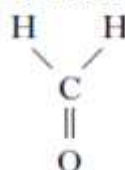
2.

Which of the following is an aldehyde?



6.

The name of this compound is



- A methanol
- B methanal
- C methanoic acid
- D methanone

7.

Which of the following organic compounds is an isomer of hexanal?

A 3-Methylpentan-2-one

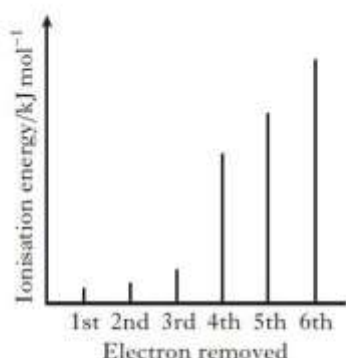
B 2-Methylbutanal

C 2,2-Dimethylbutan-1-ol

D 3-Ethylpentanal

3.

The spike graph shows the variation in successive ionisation energies of an element, Z.



In which group of the Periodic Table is element Z?

- A 1
- B 3
- C 4
- D 6

4.

Which of the following compounds has isomeric forms?

- | | | | |
|---|------------|---|--------------|
| A | C_2H_3Cl | C | C_2HCl |
| B | C_2H_5Cl | D | $C_2H_4Cl_2$ |

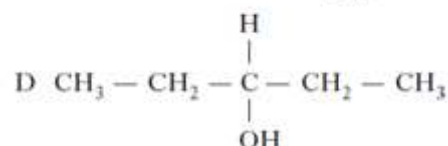
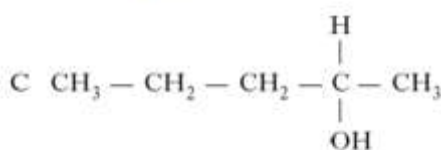
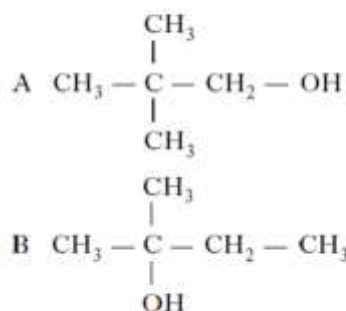
5.

Which line in the table shows the correct functional group for each homologous series?

| | Carboxylic acid | Alcohol | Aldehyde |
|---|---|---|---|
| A | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{H} \end{array}$ | $-\text{OH}$ | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{OH} \end{array}$ |
| B | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{OH} \end{array}$ | $-\text{OH}$ | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{H} \end{array}$ |
| C | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{OH} \end{array}$ | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{H} \end{array}$ | $-\text{OH}$ |
| D | $-\text{OH}$ | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{OH} \end{array}$ | $\begin{array}{c} \text{O} \\ // \\ -\text{C} \\ \backslash \\ \text{H} \end{array}$ |

8.

Which of the following structural formulae represents a tertiary alcohol?



9.

The difference between the covalent radius of sodium and silicon is mainly due to the difference in the

- A number of electrons
- B number of protons
- C number of neutrons
- D mass of each atom.

10.

Which line in the table represents the solid in which only London dispersion forces are overcome when the substance melts?

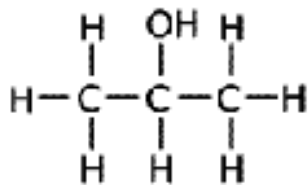
| | Melting point/ $^{\circ}\text{C}$ | Electrical conduction of solid |
|---|-----------------------------------|--------------------------------|
| A | 714 | non-conductor |
| B | 98 | conductor |
| C | 660 | conductor |
| D | 44 | non-conductor |

11.

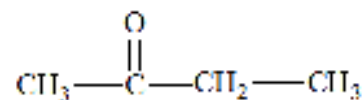
Draw the structures shown below into your jotter.

- Identify the homologous series each of the following molecules belongs to.
- Name the functional group present.
- Name the molecules

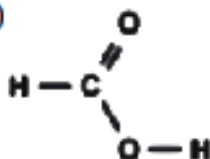
a)



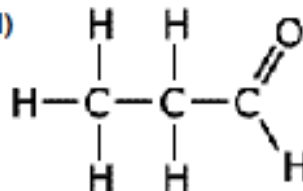
b)



c)



d)



e) $\text{H}_2\text{C}=\text{CH}-\text{CH}=\text{CH}_2$

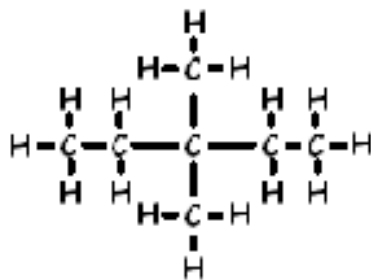
12

Write the structural formulae and names of 3 isomers of pentene.

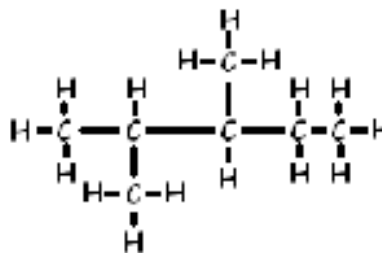
13

Write the systematic names for

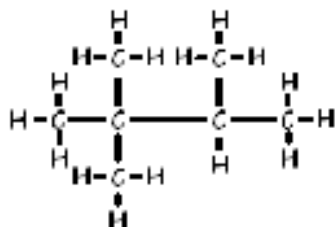
a)



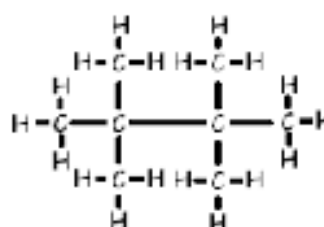
b)



c)



d)

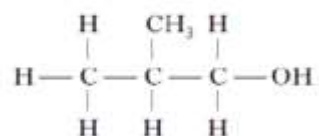


Draw the full structural formulae for each of the following compounds

- a) 2,4-dimethylheptane b) 3-ethyl-2-methylpentane. c) Butan-2-ol
 d) Pentan-1-ol e) Ethanoic acid.

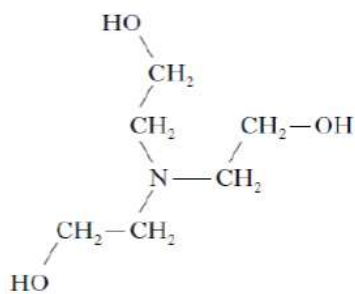
Hairspray is a mixture of chemicals.

- (a) A primary alcohol, 2-methylpropan-1-ol, is added to hairspray to help it dry quickly on the hair.



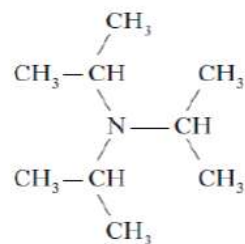
Draw a structural formula for a secondary alcohol that is an isomer of 2-methylpropan-1-ol. (1)

- (b) Triethanol amine and triisopropyl amine are bases used to neutralise acidic compounds in the hairspray to prevent damage to the hair.



triethanol amine

molecular mass 149
 boiling point 335 °C



triisopropyl amine

molecular mass 143
 boiling point 47 °C

In terms of the intermolecular bonding present, explain clearly why triethanol amine has a much higher boiling point than triisopropyl amine. (2)



A marking guide for this Homework is available (password required).