

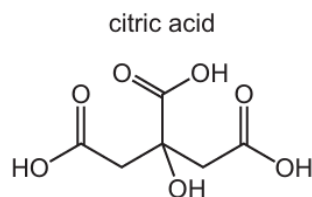
13. An introduction to AS Level organic chemistry

13.1 Formulas, functional groups and the naming of organic compounds

Paper 1

Question Paper

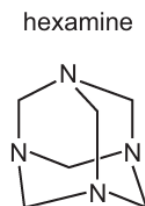
- 1 The diagram shows the skeletal formula of citric acid.



What is the molecular formula of citric acid?

- A** $C_6H_8O_7$ **B** $C_6H_4O_7$ **C** $C_8H_8O_7$ **D** $C_{10}H_8O_7$
- 2 In the general formula of which class of compound is the ratio of hydrogen atoms to carbon atoms the highest?
- A** alcohols
B aldehydes
C carboxylic acids
D halogenoalkanes
- 3 Hexamine is a crystalline solid used as a fuel in portable stoves.

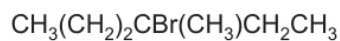
The diagram shows its skeletal structure.



What is the empirical formula of hexamine?

- A** CH_2N **B** $C_3H_6N_2$ **C** $C_4H_8N_4$ **D** $C_6H_{12}N_4$

- 4 Which row shows the correct name and classification of the halogenoalkane shown?



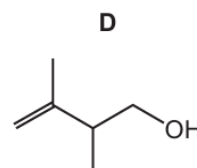
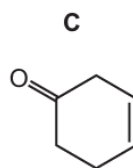
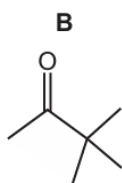
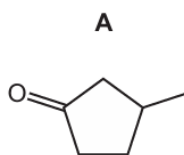
	name	classification of halogenoalkane
A	3-bromo-3-methylhexane	secondary
B	3-bromo-3-methylhexane	tertiary
C	3-bromo-4-methylhexane	tertiary
D	4-bromo-5-methylhexane	secondary

- 5 An organic molecule W contains 3 carbon atoms. It requires 4.5 molecules of oxygen for complete combustion.

What could W be?

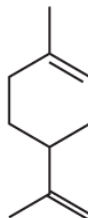
- A** propane
B propanoic acid
C propanone
D propan-1-ol

- 6 Which compound has the molecular formula $\text{C}_6\text{H}_{10}\text{O}$?



- 7 Limonene is a hydrocarbon found in the rind of citrus fruits.

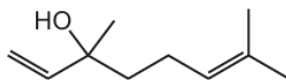
limonene



What is the molecular formula of limonene?

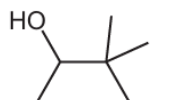
- A $C_{10}H_{12}$ B $C_{10}H_{14}$ C $C_{10}H_{16}$ D $C_{10}H_{18}$
- 8 The skeletal formula of compound X is shown.

compound X



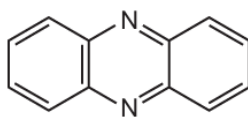
What is the molecular formula of compound X?

- A $C_{10}H_{18}O$ B $C_{10}H_{20}O$ C $C_{11}H_{22}O$ D $C_{11}H_{24}O$
- 9 What is the correct name for the compound shown?



- A 1,2,2-trimethylbutan-3-ol
 B 2-ethyl-2-methylbutan-2-ol
 C 3,3-dimethylpentan-2-ol
 D 4-hydroxy-3,3-dimethylpentane

- 10** The diagram shows the skeletal formula of phenazine.



phenazine

What is the empirical formula of phenazine?

- A** C_6H_4N **B** C_6H_6N **C** $C_{12}H_8N_2$ **D** $C_{12}H_{12}N_2$
- 11** Which compound has the molecular formula $C_6H_{10}O$?

