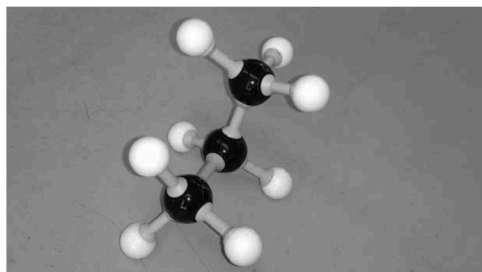


Crude oil, hydrocarbons, and alkanes

Q1. (2018)

Most of the hydrocarbons in crude oil are alkanes.

0	6	.	3
---	---	---	---

Figure 14 represents an alkane molecule.**Figure 14**

Name the alkane.

[1 mark]

Q2. (2018)

0	6	.	4
---	---	---	---

 Methane (CH_4) is an alkane.

What is the general formula for alkanes?

Tick **one** box.

[1 mark]

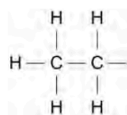
 C_nH_n ☐ C_nH_{2n} ☐ $\text{C}_n\text{H}_{2n-2}$ ☐ $\text{C}_n\text{H}_{2n+2}$ ☐

Q4. (2019)

0	4	.	2
---	---	---	---

 Butane (C_4H_{10}) is an alkane.**Figure 5** shows part of the displayed structural formula of butane.Complete the displayed structural formula of butane in **Figure 5**.

[1 mark]

Figure 5

Q5. (2020)

0 1

Crude oil is a mixture of hydrocarbons.

0 1 . 1

Complete the sentences.

Choose answers from the box.

[2 marks]

air

enzymes

mud

plankton

trees

Crude oil is the remains of _____.

Millions of years ago biomass was buried under _____.

Q6. (2020)

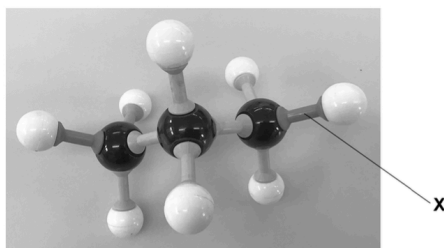
A)

0 1 . 4

Alkanes are hydrocarbons.

Figure 1 represents an alkane.

Figure 1



What is the formula of the alkane in Figure 1?

[1 mark]

C H

B)

0 1 . 5

What does X represent in Figure 1?

[1 mark]

Tick (✓) **one** box.

Covalent bond

☐

Ionic bond

☐

Metallic bond

☐

Q7. (2020)

0 1 . 6

What is the general formula for alkanes?

[1 mark]

Tick (✓) **one** box. C_nH_{2n-2} ☐ C_nH_{2n} ☐ C_nH_{2n+2} ☐

Q8. (2021)

0 7

Crude oil is a resource found in rocks.

Most of the compounds in crude oil are hydrocarbons.

0 7 . 1

Complete the sentence.

[1 mark]

Crude oil is formed by the decomposition of _____.

Q9. (2021)

0 7 . 2

Alkanes are hydrocarbons.

Give the name of the alkane molecule that has three carbon atoms.

[1 mark]

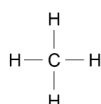
Q10. (2021)

0 7 . 3

Figure 7 shows two alkane molecules.

Figure 7

Methane



Hexane

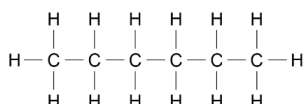


Table 4 shows the melting points and boiling points of methane and hexane.

Table 4

	Melting point in °C	Boiling point in °C
Methane	-183	-162
Hexane	-95	69

Compare the structure and properties of methane and hexane.

[6 marks]

Q11. (2022)

0 2 . 2

How is coal formed after trees die?

[1 mark]

Tick (✓) **one** box.

The trees are burned.

☐

The trees are compressed.

☐

The trees are melted.

☐

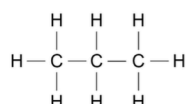
Q12. (2022)

0 5

This question is about hydrocarbons.

Figure 9 shows a hydrocarbon.

Figure 9



A)

0 5 . 1 Complete the formula for the hydrocarbon shown in **Figure 9**.

[1 mark]

C _____ H _____

B)

0 5 . 2 What is the name of the hydrocarbon in **Figure 9**?

[1 mark]

C)

0 5 . 3 Which homologous series does the hydrocarbon in **Figure 9** belong to?

[1 mark]

Q13. (2022)

0 5 . 5 **Table 3** shows boiling points of some hydrocarbons.**Table 3**

Formula of hydrocarbon	Boiling point in °C
C ₂ H ₆	-89
C ₄ H ₁₀	0
C ₆ H ₁₄	69
C ₈ H ₁₈	125
C ₁₀ H ₂₂	174

Describe how the boiling points change as the number of carbon atoms in the hydrocarbon increases.

[1 mark]

Q14. (2023)

0 1 . 2 What is crude oil formed from?

[1 mark]

Tick (✓) **one** box.

Plankton

☐

Volcanoes

☐

Water

☐

Q15. (2023)

0 1 . 3 What type of substance is crude oil?

[1 mark]

Tick (✓) **one** box.

Compound

☐

Element

☐

Mixture

☐

Q16. (2023)

0 1 . 7 5.20 kg of crude oil contains 1.53 kg of LPG (Liquefied Petroleum Gas).

Calculate the percentage (%) of LPG in 5.20 kg of crude oil.

Give your answer to 3 significant figures.

[3 marks]

Percentage (3 significant figures) = _____ %

Q17. (2024)

0 6 . 1 Define the term 'hydrocarbon'.

[1 mark]

Q18. (2024)

0 6 . 2 The general formula for alkanes is C_nH_{2n+2}

Determine the formula of the alkane with 10 carbon atoms.

[1 mark]

Formula = _____