

GCSE Chemistry: Crude Oil

Priority Learning

Worksheet

Name: _____ Date: _____

Question:	1	2	3	4	5	6	7	Total
Marks:	4	1	5	2	12	3	6	33
Score:								

Aims of this worksheet:

- Practicing explain questions.
- Consolidating crude oil knowledge.

1. Explain how crude oil formed. (4 marks)

Solution: Animals and plants that lived in the sea that died millions of years ago sank to the bottom, (1 mark) sediment formed on top of them. (1 mark) Shells and skeletons formed limestone. Soft tissue changed to crude oil (1 mark) due to the heat (of the ocean floor) and high pressure of the sea on top. (1 mark)

2. What are the only atoms in crude oil. (1 mark)

Solution: Hydrocarbons (accept hydrogen and oxygen).

3. State 4 properties that change as the molecules in crude oil become bigger. Explain your answer. (5 marks)

Solution:

1. Boiling point increases.
2. The more viscous the hydrocarbon chains become.
3. Volatility decreases/they evaporate slower at room temperature.
4. Darken in colour.
5. Intermolecular forces are stronger.

4. Why are longer chain hydrocarbons not used as fuels? (2 marks)

Solution: Boiling point is too high so they are hard to combust.

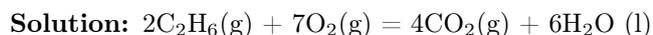
5. State the 6 products of passing crude oil through a fractional distillation column, list one use for each. (12 marks)

Solution: Bitumen, fuel oil, diesel oil, kerosene, gasoline, refinery gases.

6. Draw a fully labelled fractional distillation column. State the temperatures at the top and bottom of the column.

Solution: 400 and 40 at the bottom and top respectively. Products listed in same order above.

7. (a) Write the full chemical equation for the complete combustion of ethane. (3 marks)



- (b) Write the full chemical equation for the incomplete combustion of ethane. (3 marks)



