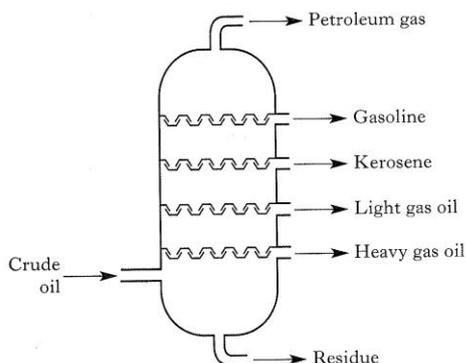


FUELS M/C Questions

Question 1 & 2 refer to the following information.

The fractional distillation of crude oil produces a number of different fractions.



- Which properties apply to a fraction which has a high boiling point?
 - High viscosity and low flammability
 - Low viscosity and low flammability
 - High viscosity and high flammability
 - Low viscosity and low flammability
- Which molecule is likely to be present in kerosene?
 - C_5H_{12}
 - $C_{12}H_{26}$
 - $C_{19}H_{40}$
 - $C_{26}H_{54}$

- A compound burns in air. The only products of the reaction are carbon dioxide, sulfur dioxide and water vapour.

The compound must contain:

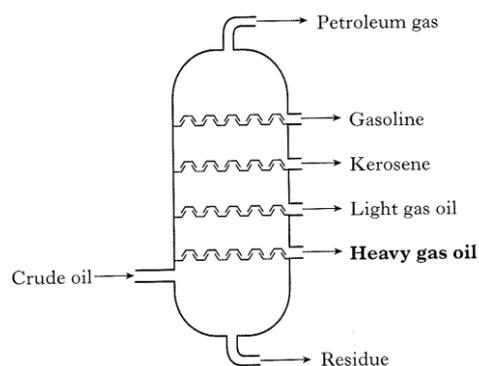
- carbon and hydrogen only
- carbon and sulfur only
- carbon, hydrogen and sulfur only
- sulfur and hydrogen.

- The fractional distillation of crude oil depends on the fact that different hydrocarbons have different
 - densities
 - solubilities
 - boiling points
 - ignition temperatures.

- Catalytic convertors speed up the conversion of harmful gases to less harmful gases. Which of the following reactions is most likely to occur in a catalytic convertor?

- carbon dioxide reacting to form carbon monoxide
- carbon monoxide reacting to form carbon dioxide
- nitrogen reacting to form nitrogen dioxide
- oxygen reacting to form hydrogen oxide.

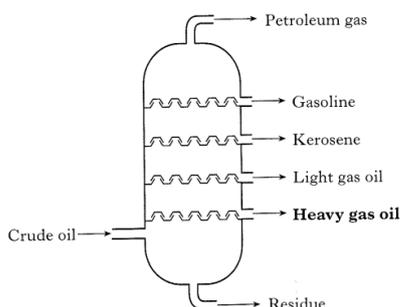
- Heavy gas oil produced by fractional distillation of crude oil has a high viscosity.



Which of the following properties does it also have?

- Low boiling point and high flammability
- High boiling point and low flammability
- Low boiling point and low flammability
- High boiling point and high flammability

7. Gasoline produced by fractional distillation of crude oil has a low viscosity.



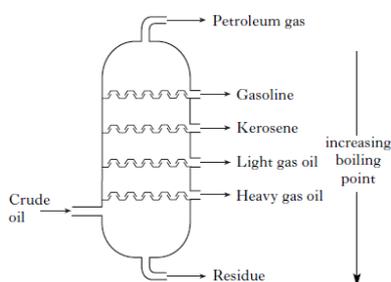
Which of the following properties does it also have?

- A. Low boiling point and high flammability
- B. High boiling point and low flammability
- C. Low boiling point and low flammability
- D. High boiling point and high flammability

8. When methane burns in a plentiful supply of air, the products are

- A. carbon monoxide and water vapour
- B. carbon and water vapour
- C. carbon dioxide and hydrogen
- D. carbon dioxide and water vapour.

9. The fractional distillation of crude oil produces a number of different fractions.



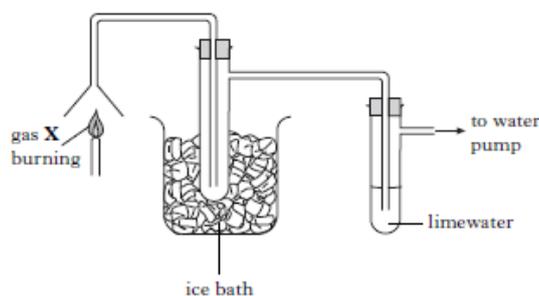
Compared with the gasoline fraction, the heavy gas oil fraction is

- A. less viscous and evaporates more readily
- B. more viscous and evaporates more readily
- C. less viscous and evaporates less readily
- D. more viscous and evaporates less readily

10. Which of the following exhaust emissions is likely to come from the incomplete combustion of diesel?

- A. Water vapour
- B. Soot particles
- C. Carbon dioxide
- D. Nitrogen dioxide

11. The apparatus shown can be used to identify what is produced when a gas is burned.



When gas X was burned, a colourless liquid collected in the cooled test tube but there was no change in the limewater.

Gas X could be

- A. methane
- B. carbon monoxide
- C. hydrogen
- D. ethene

12. 1 mole of a hydrocarbon burns completely in oxygen to produce 2 moles of carbon dioxide and 2 moles of water.

The formula for the hydrocarbon is

- A. C_2H_4
- B. C_2H_6
- C. C_4H_8
- D. C_4H_{10}