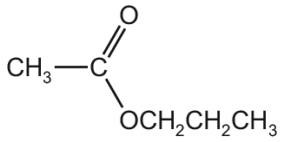
01. 0620_s19_qp_21 Q: 39

The structure of an ester is shown.



What is the name of the ester?

A ethyl propanoate

B methyl propanoate

C propyl ethanoate

D propyl methanoate

---

02. 0620_s18_qp_21 Q: 39

Which structural formula represents methyl propanoate?

A $CH_3CH_2COOCH_3$

B $CH_3COOCH_2CH_2CH_3$

C $CH_3CH_2CH_2COOCH_3$

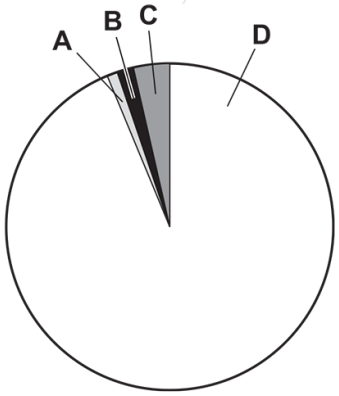
D $HCOOCH_2CH_2CH_3$

14.2 Fuels

03. 0620_m21_qp_22 Q: 35

The pie chart represents the composition of natural gas.

Which sector represents methane?



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04. 0620_w21_qp_23 Q: 35

What is the main constituent of natural gas?

A hydrogen

B carbon monoxide

C methane

D nitrogen

---

05. 0620_m20_qp_22 Q: 35

Petroleum is an important raw material that is separated into useful products.

Which terms describe petroleum and the method used to separate it?

	description	separation method
A	compound	cracking
B	compound	fractional distillation
C	mixture	cracking
D	mixture	fractional distillation

---

06. 0620_p20_qp_20 Q: 36

In an oil refinery, petroleum is separated into useful fractions.

The diagram shows some of these fractions.

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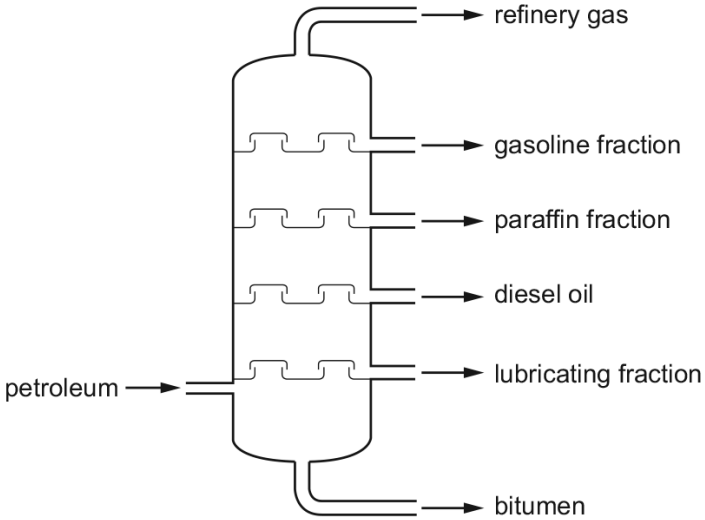
What are fractions X, Y and Z?

	X	Y	Z
A	fuel oil	bitumen	paraffin (kerosene)
B	fuel oil	paraffin (kerosene)	bitumen
C	paraffin (kerosene)	bitumen	fuel oil
D	paraffin (kerosene)	fuel oil	bitumen

---

07. 0620_m19_qp_22 Q: 36

The fractional distillation of petroleum is shown.



Which fraction is the least volatile?

A bitumen

B diesel oil

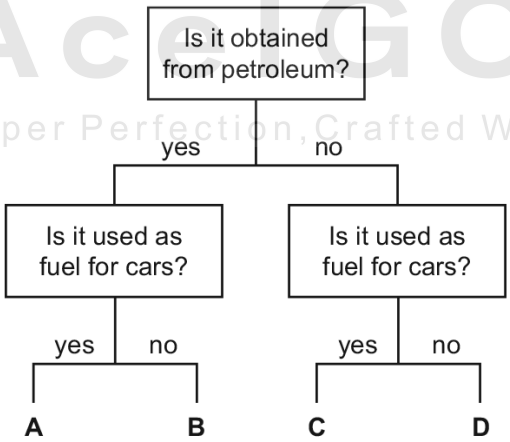
C gasoline fraction

D refinery gas

---

08. 0620_s19_qp_21 Q: 35

Which fuel could be gasoline?



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---

09. 0620_w19_qp_21 Q: 36

Petroleum is separated by fractional distillation.

Which statement about the fractions produced is correct?

A Bottled gas for heating and cooking is obtained from the naphtha fraction.

B Diesel oil is used as a fuel for jet aircraft.

C Substances used to make polishes are obtained from the lubricating fraction.

D The kerosene fraction contains many useful waxes.

---

10. 0620_w19_qp_22 Q: 36

Some fractions obtained from petroleum are listed.

	fraction	use	position collected in the fractionating column
1	gasoline	waxes and polishes	below refinery gas
2	bitumen	making roads	above kerosene
3	kerosene	jet fuel	below gasoline
4	refinery gas	heating and cooking	above gasoline

Which rows are correct?

A 1, 3 and 4

B 2, 3 and 4

C 3 and 4 only

D 4 only

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---

11. 0620_w19_qp_23 Q: 36

Which statement is correct?

A Bitumen is used as a fuel for ships.

B Coal, natural gas and oxygen are all fuels.

C Hydrogen is the main constituent of natural gas.

D Petroleum is separated into useful substances by fractional distillation.

---

12. 0620_s18_qp_21 Q: 35

What is **not** the correct use of the fraction named?

	name of fraction	use
A	fuel oil	making waxes
B	gas oil	fuel in diesel engines
C	kerosene	jet fuel
D	naphtha	making chemicals

---

13. 0620_m17_qp_22 Q: 34

The table shows the composition of four different types of petroleum.

fraction	Arabian Heavy /%	Arabian Light /%	Iranian Heavy /%	North Sea /%
gasoline	18	21	21	23
kerosene	11	15	13	15
diesel oil	18	21	20	24
fuel oil	53	43	46	38

Which type of petroleum is best for the motor vehicle industry?

A Arabian Heavy

B Arabian Light

C Iranian Heavy

D North Sea

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14. 0620_s17_qp_21 Q: 35

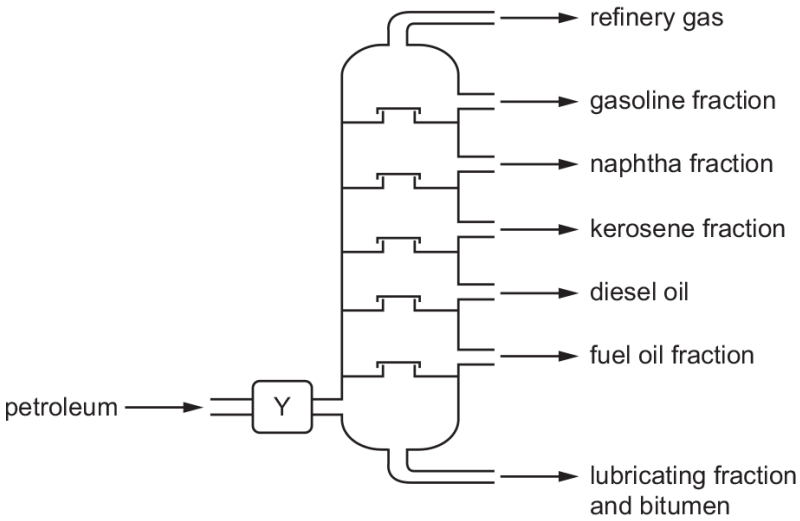
Which fraction of petroleum is **not** matched to its correct use?

	fraction	use
A	bitumen	making roads
B	gasoline	fuel for cars
C	kerosene	fuel for ships
D	naphtha	chemical industry

---

15. 0620_s17_qp_22 Q: 35

The industrial fractional distillation of petroleum is shown.



Which process happens at Y?

A burning

B condensation

C cracking

D evaporation

---

16. 0620_s17_qp_23 Q: 35

Fuel oil, gasoline, kerosene and naphtha are four fractions obtained from the fractional distillation of petroleum.

What is the order of the boiling points of these fractions?

	highest boiling point → lowest boiling point
A	fuel oil → kerosene → gasoline → naphtha
B	fuel oil → kerosene → naphtha → gasoline
C	gasoline → naphtha → kerosene → fuel oil
D	naphtha → gasoline → kerosene → fuel oil

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17. 0620_w17_qp_21 Q: 36

Some of the fractions obtained from the fractional distillation of petroleum are used as fuels for vehicles.

Which two fractions are used as fuels for vehicles?

A bitumen fraction and gasoline fraction

B bitumen fraction and naphtha fraction

C gasoline fraction and kerosene fraction

D kerosene fraction and lubricating fraction

---

18. 0620_w17_qp_22 Q: 36

Which statement is **not** correct?

A Petroleum is a mixture of hydrocarbons.

B The main constituent of natural gas is ethane.

C The naphtha fraction of petroleum is used for making chemicals.

D When natural gas burns in air, carbon dioxide and water are formed.

---

19. 0620_w17_qp_23 Q: 36

Fuel oil and naphtha are two fractions obtained from petroleum.

What are the major uses of these fractions?

	fuel oil	naphtha
A	jet fuel	making chemicals
B	jet fuel	making roads
C	ship fuel	making chemicals
D	ship fuel	making roads

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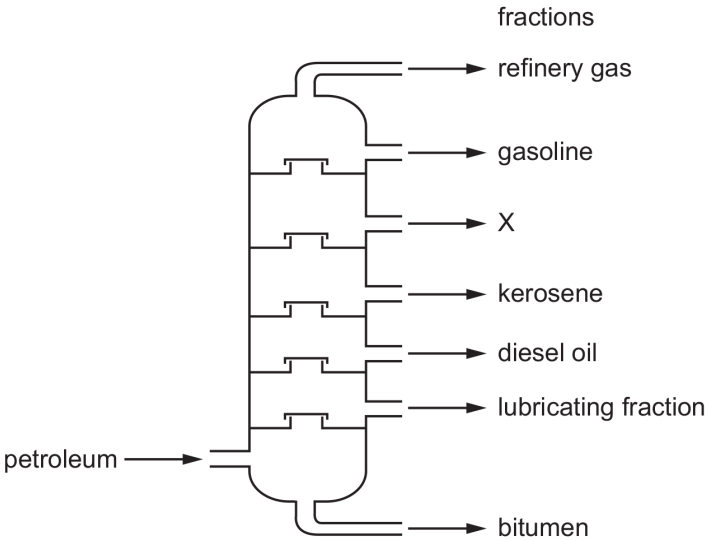
20. 0620_m16_qp_22 Q: 35

What is the name of fraction X?



A alcohol

B fuel oil

C naphtha

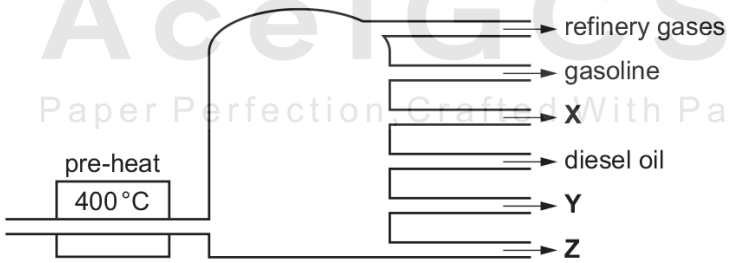
D paraffin

---

21. 0620_p16_qp_20 Q: 36

In an oil refinery, petroleum is separated into useful fractions.

The diagram shows some of these fractions.



What are fractions X, Y and Z?

	X	Y	Z
A	fuel oil	bitumen	paraffin (kerosene)
B	fuel oil	paraffin (kerosene)	bitumen
C	paraffin (kerosene)	bitumen	fuel oil
D	paraffin (kerosene)	fuel oil	bitumen

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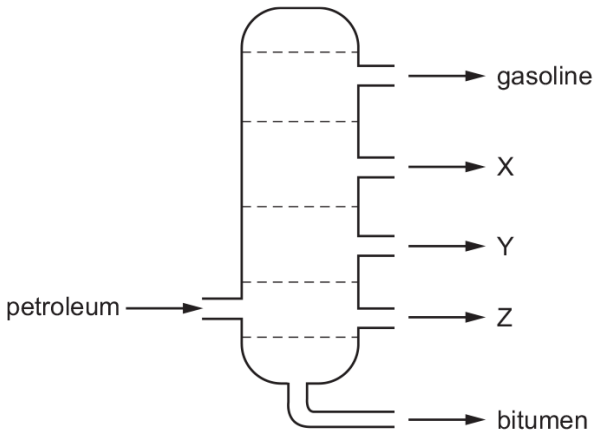
22. 0620_s16_qp_21 Q: 35

The diagram shows the separation of petroleum into fractions.



What could X, Y and Z represent?

	X	Y	Z
A	diesel oil	lubricating fraction	paraffin
B	lubricating fraction	diesel oil	paraffin
C	paraffin	lubricating fraction	diesel oil
D	paraffin	diesel oil	lubricating fraction

---

23. 0620_w16_qp_21 Q: 35

Petroleum is an important fossil fuel.

Which row correctly describes petroleum?

	type of substance	composition
A	compound	mainly hydrocarbons
B	compound	only hydrogen and carbon
C	mixture	mainly hydrocarbons
D	mixture	only hydrogen and carbon

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24. 0620_w16_qp_22 Q: 35

Petroleum is separated into fractions.

Which statement is **not** correct?

A Each fraction contains a mixture of hydrocarbon molecules.

B Fuel oil burns easily and is used as fuel in cars.

C Refinery gas is the fraction containing the smallest molecules.

D The fractions are separated depending on their boiling point range.

---

25. 0620_w16_qp_23 Q: 35

Which list shows the fractions obtained from distilling petroleum, in order of increasing boiling point?

A bitumen → diesel oil → fuel oil → lubricating oil

B diesel oil → gasoline → naphtha → kerosene

C gasoline → naphtha → kerosene → diesel oil

D kerosene → lubricating oil → naphtha → refinery gas

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SN	Paper	Q. No.	Answer
01	0620_s19_qp_21	39	C
02	0620_s18_qp_21	39	A
03	0620_m21_qp_22	35	D
04	0620_w21_qp_23	35	C
05	0620_m20_qp_22	35	D
06	0620_p20_qp_20	36	D
07	0620_m19_qp_22	36	A
08	0620_s19_qp_21	35	A
09	0620_w19_qp_21	36	C
10	0620_w19_qp_22	36	C
11	0620_w19_qp_23	36	D
12	0620_s18_qp_21	35	A
13	0620_m17_qp_22	34	D
14	0620_s17_qp_21	35	C
15	0620_s17_qp_22	35	D
16	0620_s17_qp_23	35	B
17	0620_w17_qp_21	36	C
18	0620_w17_qp_22	36	B
19	0620_w17_qp_23	36	C
20	0620_m16_qp_22	35	C
21	0620_p16_qp_20	36	D
22	0620_s16_qp_21	35	D
23	0620_w16_qp_21	35	C
24	0620_w16_qp_22	35	B
25	0620_w16_qp_23	35	C

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