

## 14.5 Alkenes

01. 0620\_m21\_qp\_22 Q: 36

Which statement describes the reaction between ethene and steam?

- A** a cracking reaction which produces ethane and hydrogen gas as products
- B** an addition reaction which produces ethanol as the only product
- C** an oxidation reaction which produces ethanoic acid as the only product
- D** a slow reaction producing ethanol and carbon dioxide

02. 0620\_s21\_qp\_21 Q: 38

P, Q, R and S are four organic compounds.

P is an unsaturated hydrocarbon.

Q burns but otherwise is unreactive.

R contains a C–C single bond and a C=C double bond.

S undergoes addition polymerisation.

Which compounds are alkenes?

- A** P and R only    **B** P, R and S    **C** P, Q and S    **D** Q, R and S
- 

03. 0620\_w21\_qp\_21 Q: 33

An alkane molecule of molecular formula  $C_8H_{18}$  undergoes cracking. The equation for the reaction is shown.



Substance R has two carbon atoms per molecule and decolourises aqueous bromine.

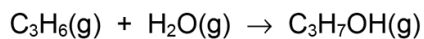
What is substance Q?

- A** butane
  - B** butene
  - C** ethane
  - D** ethene
-

14.5. ALKENES

04. 0620\_w21\_qp\_21 Q: 38

Propene reacts with steam to form propanol.



Which type of reaction takes place?

- A addition
  - B condensation
  - C oxidation
  - D substitution
- 

05. 0620\_w21\_qp\_22 Q: 36

Which statement about ethene is correct?

- A It has the chemical formula  $\text{C}_2\text{H}_6$ .
  - B It burns in excess oxygen producing carbon dioxide and water.
  - C It reacts with  $\text{Br}_2$  to produce an orange solution.
  - D It reacts with oxygen to form ethanol.
- 

06. 0620\_w21\_qp\_22 Q: 38

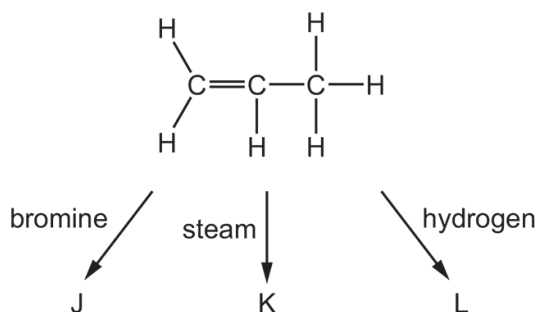
Which statements about unsaturated hydrocarbons are correct?

- 1 They contain both single and double bonds.
  - 2 They turn aqueous bromine from colourless to brown.
  - 3 They can be manufactured by cracking.
- A 1 and 2 only    B 1 and 3 only    C 2 and 3 only    D 1, 2 and 3
-



10. 0620\_w20\_qp\_21 Q: 37

Propene is an alkene that reacts with bromine, steam and hydrogen as shown.



What are the products of these reactions?

	J	K	L
<b>A</b>	bromopropane	propanol	butane
<b>B</b>	dibromopropane	propanoic acid	propane
<b>C</b>	dibromopropane	propanol	propane
<b>D</b>	bromopropane	propanoic acid	butane

11. 0620\_w20\_qp\_22 Q: 37

Which molecule is **not** produced by an addition reaction of ethene?

- A**  $\text{CH}_3\text{CH}_3$       **B**  $\text{CH}_2\text{BrCH}_2\text{Br}$       **C**  $\text{CH}_3\text{CH}_2\text{OH}$       **D**  $\text{CH}_3\text{CH}_2\text{CH}_3$

**AceIGCSE**  
 Paper Perfection, Crafted With Passion

12. 0620\_w20\_qp\_23 Q: 36

Which product is obtained when bromine reacts with propene,  $\text{CH}_3\text{CH}=\text{CH}_2$ ?

- A**  $\text{CH}_3\text{CH}=\text{CHBr}$   
**B**  $\text{CH}_3\text{CBr}=\text{CHBr}$   
**C**  $\text{CH}_3\text{CH}_2\text{CHBr}_2$   
**D**  $\text{CH}_3\text{CHBrCH}_2\text{Br}$

14.5. ALKENES

13. 0620\_w19\_qp\_21 Q: 37

Which products are obtained by the cracking of an alkane?

	alkene	hydrogen	water
<b>A</b>	✓	✓	✓
<b>B</b>	✓	✓	x
<b>C</b>	✓	x	✓
<b>D</b>	x	✓	✓

---

14. 0620\_s18\_qp\_21 Q: 36

Which reaction is **not** a reaction which alkenes undergo?

- A** bromination
- B** hydration
- C** hydrogenation
- D** hydrolysis

---

15. 0620\_s18\_qp\_21 Q: 37

Which substances can be obtained by cracking hydrocarbons?

- A** ethanol and ethene
- B** ethanol and hydrogen
- C** ethene and hydrogen
- D** ethene and poly(ethene)

---

16. 0620\_s18\_qp\_22 Q: 36

Which statement about alkenes is **not** correct?

- A** They decolourise aqueous bromine.
- B** They only contain the elements carbon and hydrogen.
- C** They react with hydrogen to form alkanes.
- D** They react with steam to produce carboxylic acids.

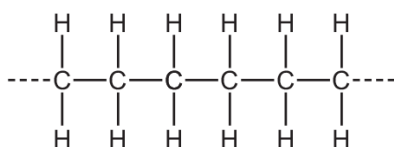
17. 0620\_m17\_qp\_22 Q: 35

Which reaction of ethene is **not** an addition reaction?

- A** reaction with bromine  
**B** reaction with hydrogen  
**C** reaction with oxygen  
**D** reaction with steam

18. 0620\_m17\_qp\_22 Q: 39

The diagram shows the structure of an important product.



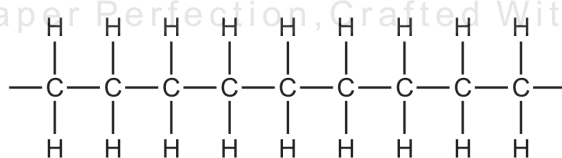
This product is formed by ..... 1 ..... of an ..... 2 .....

Which words complete gaps 1 and 2?

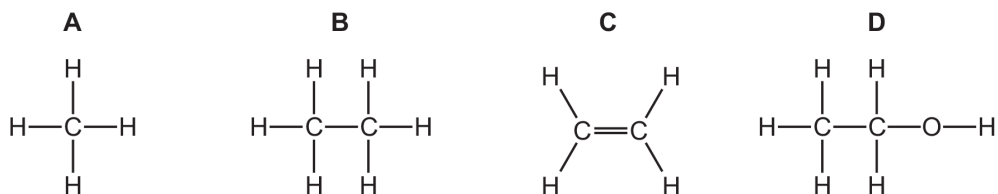
	1	2
<b>A</b>	addition polymerisation	alkane
<b>B</b>	addition polymerisation	alkene
<b>C</b>	cracking	alkane
<b>D</b>	cracking	alkene

19. 0620\_s17\_qp\_21 Q: 37

The diagram shows part of the molecule of a polymer.



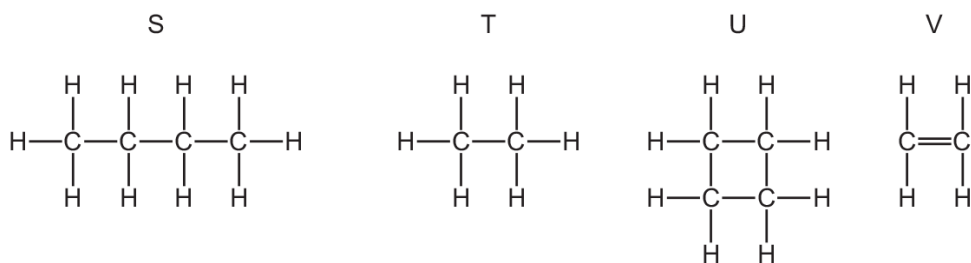
Which diagram shows the monomer from which this polymer could be manufactured?



14.5. ALKENES

20. 0620\_w17\_qp\_22 Q: 35

The structures of four organic compounds are shown.



Which compounds are unsaturated?

- A** S only      **B** T and U      **C** U only      **D** V only

21. 0620\_p16\_qp\_20 Q: 38

Ethane and ethene are both hydrocarbons.

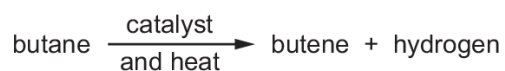
Ethane reacts with chlorine and ethene reacts with bromine.

Which row describes the type of reaction that ethane and ethene undergo?

	ethane	ethene
<b>A</b>	addition	addition
<b>B</b>	addition	substitution
<b>C</b>	substitution	substitution
<b>D</b>	substitution	addition

22. 0620\_w16\_qp\_21 Q: 36

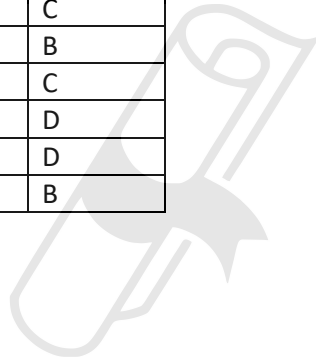
Butane reacts as shown.



What is this type of reaction?

- A** combustion  
**B** cracking  
**C** polymerisation  
**D** reduction

SN	Paper	Q. No.	Answer
01	0620_m21_qp_22	36	B
02	0620_s21_qp_21	38	B
03	0620_w21_qp_21	33	A
04	0620_w21_qp_21	38	A
05	0620_w21_qp_22	36	B
06	0620_w21_qp_22	38	B
07	0620_w21_qp_23	38	A
08	0620_p20_qp_20	38	D
09	0620_s20_qp_21	37	D
10	0620_w20_qp_21	37	C
11	0620_w20_qp_22	37	D
12	0620_w20_qp_23	36	D
13	0620_w19_qp_21	37	B
14	0620_s18_qp_21	36	D
15	0620_s18_qp_21	37	C
16	0620_s18_qp_22	36	D
17	0620_m17_qp_22	35	C
18	0620_m17_qp_22	39	B
19	0620_s17_qp_21	37	C
20	0620_w17_qp_22	35	D
21	0620_p16_qp_20	38	D
22	0620_w16_qp_21	36	B



**Ace | GCSE**  
 Paper Perfection, Crafted With Passion