

**Q1.** Which of these substances does **not** contribute to the greenhouse effect?

- A Unburned hydrocarbons.
- B Carbon dioxide.
- C Water vapour.
- D Nitrogen.

(Total 1 mark)

**Q2.** Which molecule is **not** produced when ethane reacts with bromine in the presence of ultraviolet light?

- A  $C_2H_4Br_2$
- B HBr
- C  $H_2$
- D  $C_4H_{10}$

(Total 1 mark)

**Q3.** The percentage by mass of carbon is 83.3% in

- A propane.
- B butane.
- C pentane.
- D hexane.

(Total 1 mark)



**Q7.** Which one of the following is least likely to occur in the reaction between methane and chlorine?

- A**  $\text{CH}_4 + \text{Cl}\cdot \rightarrow \text{CH}_3\cdot + \text{HCl}$
- B**  $\text{CH}_3\cdot + \text{HCl} \rightarrow \text{CH}_3\text{Cl} + \text{H}\cdot$
- C**  $\text{CH}_3\cdot + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{Cl}\cdot$
- D**  $\text{CH}_3\text{Cl} + \text{Cl}\cdot \rightarrow \text{CH}_2\text{Cl}\cdot + \text{HCl}$

**(Total 1 mark)**

**Q8.** Which one of the following reactions involves nucleophilic addition?

- A**  $\text{CH}_3\text{CH}=\text{CH}_2 + \text{HBr} \rightarrow \text{CH}_3\text{CHBrCH}_3$
- B**  $\text{CH}_3\text{CH}_2\text{CH}_3 + \text{Cl}_2 \rightarrow \text{CH}_3\text{CHClCH}_3 + \text{HCl}$
- C**  $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br} + \text{NaOH} \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} + \text{NaBr}$
- D**  $\text{CH}_3\text{CH}_2\text{CHO} + \text{HCN} \rightarrow \text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CN}$

**(Total 1 mark)**