

**MINISTRY OF EDUCATION**  
**SECONDARY ENGAGEMENT PROGRAMME**

**GRADE 11**  
**CHEMISTRY**

**WEEK 5**

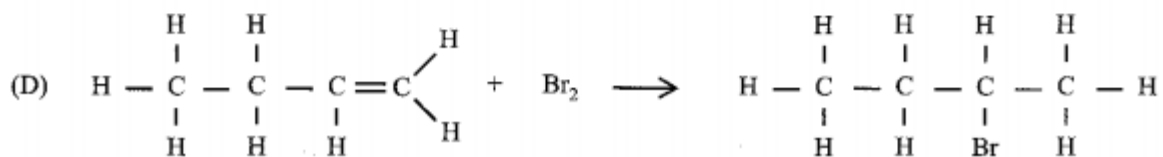
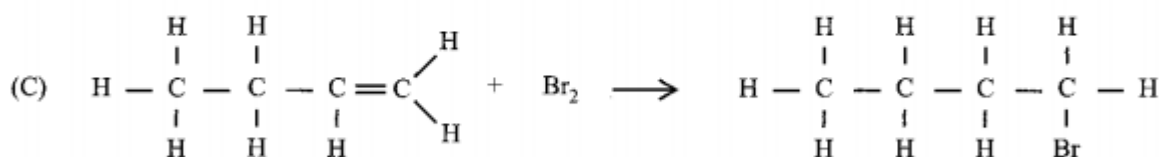
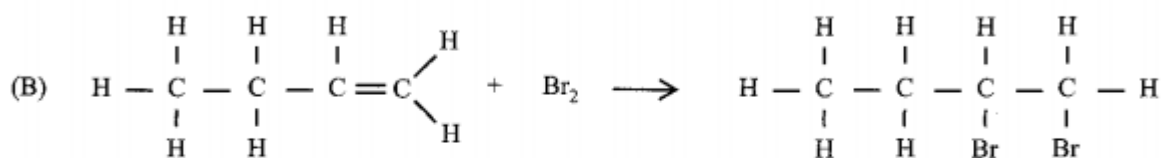
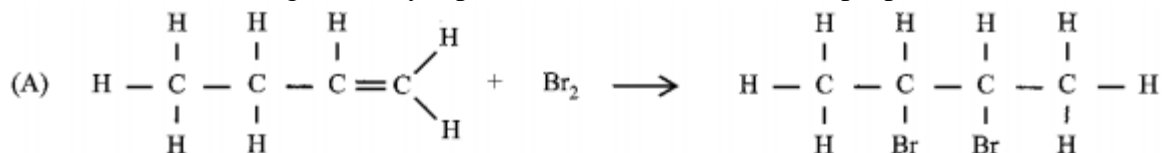
**LESSON 1 - WORKSHEET**

Circle the correct answers for items 1-6.

- Which of the following statements is/are true of alkenes?  
I they undergo substitution reactions  
II they undergo addition reactions  
III they undergo combustion reactions  
A. I and III  
B. I and II  
C. III only  
D. II and III
- $C_2H_4(g) + Cl_2(g) \rightarrow C_2H_4Cl_2$   
The above represents a type of reaction which is classified as  
A. Substitution  
B. Polymerization  
C. Addition  
D. Neutralization
- The compound ethene is described as unsaturated. This means that  
A. Carbon atoms in ethene are linked by single bonds  
B. The molecule has insufficient hydrogen atoms  
C. Carbon atoms in the molecule are very reactive.  
D. The molecule contains at least one double bond.
- When ethene reacts with steam, the ethene is  
A. Oxidized to carbon dioxide  
B. Converted to an ester  
C. Converted to ethanol  
D. Decomposed to carbon
- With which of the following would ethene show an addition reaction?  
I bromine  
II oxygen  
III hydrogen  
IV water

- A. I and III only
- B. I and IV only
- C. II and III only
- D. I, III and IV only

6. Which of the following correctly represents the reaction between propene and Br(l)?



7. What is hydration?

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8. State the name of the product formed when ethene is hydrated.

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9. List the conditions needed for the hydrogenation of ethene

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10. Write a balanced molecular equation for the combustion of ethene.

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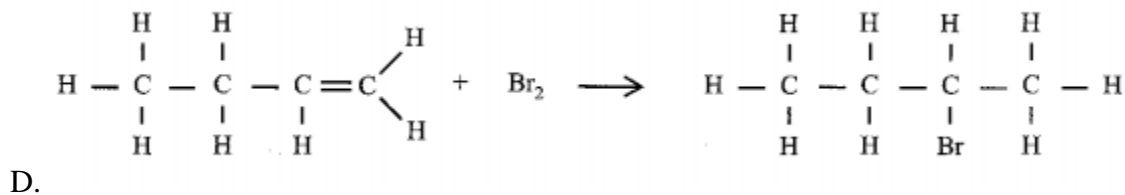
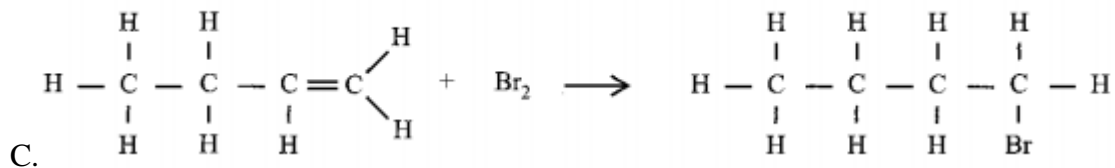
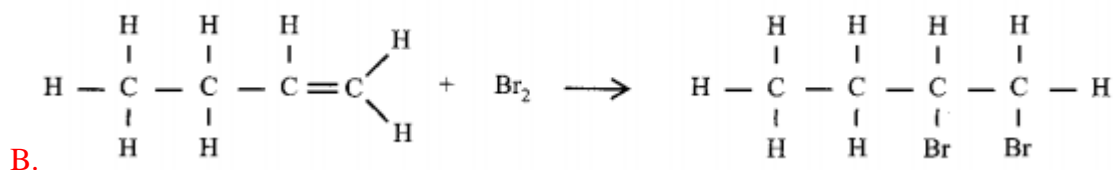
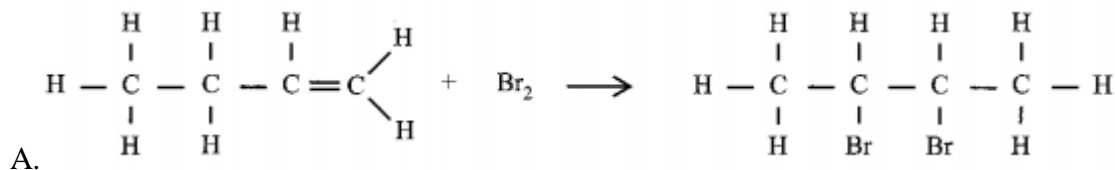
**WORKSHEET - ANSWERS**

- Which of the following statements is/are true of alkenes?
  - they undergo substitution reactions
  - they undergo addition reactions
  - they undergo combustion reactions

E. I and III  
F. I and II  
G. III only  
**H. II and III**
- $\text{C}_2\text{H}_4(\text{g}) + \text{Cl}_2(\text{g}) \rightarrow \text{C}_2\text{H}_4\text{Cl}_2$   
The above represents a type of reaction which is classified as  
E. Substitution  
F. Polymerization  
**G. Addition**  
H. Neutralization
- The compound ethene is described as unsaturated. This means that  
E. Carbon atoms in ethene are linked by single bonds  
F. The molecule has insufficient hydrogen atoms  
G. Carbon atoms in the molecule are very reactive.  
**H. The molecule contains at least one double bond.**
- When ethene reacts with steam, the ethene is  
E. Oxidized to carbon dioxide  
F. Converted to an ester  
**G. Converted to ethanol**  
H. Decomposed to carbon
- With which of the following would ethene show an addition reaction?
  - bromine
  - oxygen
  - hydrogen
  - water

- E. I and III only
- F. I and IV only
- G. II and III only
- H. I, III and IV only

6. Which of the following correctly represents the reaction between propene and Br(l)?



7. What is hydration?

This is the addition of water to a compound

8. State the name of the product formed when ethene is hydrated.

ethanol

9. List the conditions needed for the hydrogenation of ethene

Ni catalyst, 5 atm, 150°C

10. Write a balanced molecular equation for the combustion of ethene.

