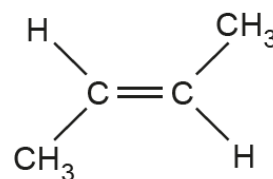


Name:

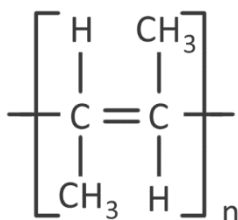
Class:



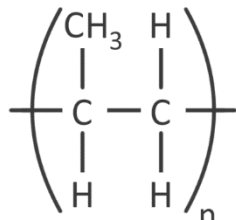
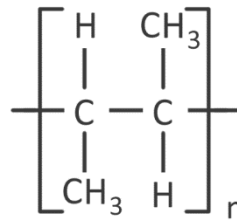
Look at the displayed formula of the monomer butene below.

What is the formula of the **polymer** formed from butene?

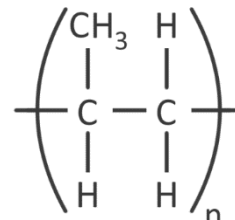
Circle the letter of the correct formula.



A

**B**

C

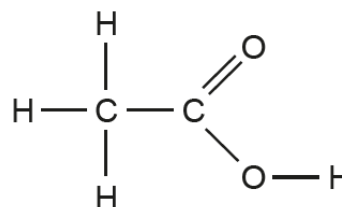


D

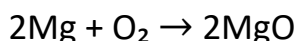
Calcium carbonate contains carbonate ions.
Describe a test to show that carbonate ions are present.

Test: add a few cm³ of acid. Accept any acid.**Positive result:** if there is fizzing, bubble the gas through some limewater. If it turns cloudy carbonate ions were present.

Identify the following compound.

**Ethanoic acid**

Magnesium burns in oxygen to form magnesium oxide.



Calculate the mass of magnesium oxide formed when 6.0 g of magnesium is completely burned. (Relative atomic masses: Mg = 24, O = 16)

Calculate moles of Mg: Moles = 6.0 / 24 = 0.25 mol

Use ratio (2Mg → 2MgO is 1:1): Moles of MgO = 0.25 mol

Calculate mass of MgO (Mr = 40): Mass = 0.25 × 40 = **10 g**Mass of MgO = **10 g**

In terms of bonding, explain why diamond cannot conduct electricity.

An answer to include:

All of the outer shell / valence electrons of each carbon atom are used in bonding (or equivalent).

Acceptable alternatives: Each carbon atom forms four covalent bonds. All four outer electrons are held in covalent bonds.

Therefore, there are no delocalised / free / mobile electrons to move and carry charge.

Give the electronic configuration of a sulfide S²⁻ ion.

2, 8, 8

Give the electronic configuration of a argon atom.

2, 8, 8