



THE SCIENCE
ACADEMY

O-LEVEL CHEMISTRY E-TRIAL

O LEVEL O-LEVEL CHEMISTRY

THE SCIENCE ACADEMY



Mole Concept - 1

A sample of the insecticide, commonly known as DDT, has the formula $C_{14}H_9Cl_5$.
It was found to contain 0.120 g of carbon.

What was the mass of chlorine present in the sample?

- A** 0.127 g
- B** 0.355 g
- C** 0.994 g
- D** 1.01 g



Mole Concept - 2

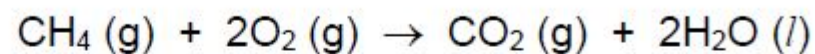
A hydrocarbon was found to contain 85.7% by mass of carbon and 14.3% by mass of hydrogen. The molar mass of the hydrocarbon was found to be 112 g/mol. What is the molecular formula of the hydrocarbon?

- A** CH_2
- B** C_6H_{14}
- C** C_8H_{14}
- D** C_8H_{16}



Mole Concept - 3

In a combustion reaction, 4 cm³ of methane burned completely in 10 cm³ of oxygen.



All volumes were measured at room temperature and pressure.
What volume of gas would be left behind?

- A 4 cm³
- B 6 cm³
- C 8 cm³
- D 15 cm³



Mole Concept - 4

Zinc oxide is produced by heating zinc carbonate.



What is the percentage yield of zinc oxide if 200 g of zinc carbonate produces 90 g of zinc oxide on heating?

(M_r of $\text{ZnCO}_3 = 125$; M_r of $\text{ZnO} = 81$)

A
$$\frac{90 \times 125 \times 100}{200 \times 81}$$

B
$$\frac{90 \times 200 \times 81}{125}$$

C
$$\frac{90 \times 200 \times 81 \times 100}{125}$$

D
$$\frac{90 \times 125}{200 \times 81}$$



Mole Concept - 5

If a 2 g sample of hydrogen gas contains x molecules, how many molecules will a 2 g sample of oxygen gas contain?

A x

B $\frac{x}{2}$

C $\frac{x}{16}$

D $\frac{x}{32}$