

IB · SL · Chemistry

🕒 6 mins    ❓ 6 questions

Multiple Choice Questions

# Counting Particles by Mass: The Mole

The Mole Unit / Molar Mass / Empirical Formula / Molar Concentration / Avogadro's Law

Scan here for your answers  
or visit [savemyexams.com](https://www.savemyexams.com)

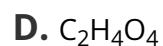
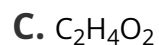
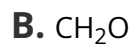


---

Total Marks

/6

1 A compound of molar mass  $92 \text{ g mol}^{-1}$  contains 12 g of carbon, 2 g of hydrogen and 32 g of oxygen. What is the molecular formula of the compound?



(1 mark)

2 Ethanoic acid has the formula  $\text{CH}_3\text{COOH}$ . How many carbon atoms are present in 0.1 mol of ethanoic acid?

A.  $6.0 \times 10^{22}$

B.  $1.2 \times 10^{23}$

C.  $6.0 \times 10^{23}$

D.  $1.2 \times 10^{24}$

(1 mark)

- 3 A compound contains carbon and hydrogen only. The amount of carbon is 80% by mass. What is the empirical formula of the compound?

(RAMs, H = 1.01, C = 12.01)

- A. CH
- B. CH<sub>2</sub>
- C. CH<sub>3</sub>
- D. CH<sub>4</sub>

(1 mark)

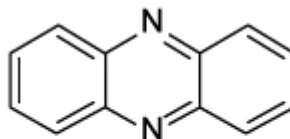
- 4 A hydrated carbonate of an unknown Group 1 metal has the formula X<sub>2</sub>CO<sub>3</sub>·10H<sub>2</sub>O and is found to have a relative formula mass of 286.19

What is the Group 1 metal?

- A. Rb
- B. K
- C. Na
- D. Li

(1 mark)

5 The diagram below shows the skeletal formula of phenazine.



Phenazine

What is the empirical formula of phenazine?

- A.  $C_6H_6N$
- B.  $C_{12}H_8N_2$
- C.  $C_6H_4N$
- D.  $C_{12}H_{12}N_2$

(1 mark)

6 A coin contains 5.869% nickel by mass. If the coin weighs 10.00g, how many nickel atoms are in the coin?

- A.  $4.30 \times 10^{22}$
- B.  $3.01 \times 10^{23}$
- C.  $6.02 \times 10^{25}$
- D.  $6.02 \times 10^{21}$

(1 mark)