

YAKEEN NEET 2.0

2026

Some Basic Concept of Chemistry

MPQ Solution - 08

Physical Chemistry

By- Amit Mahajan Sir





Magarmach Practice Questions (MPQ)



QUESTION – (AIPMT 2009)

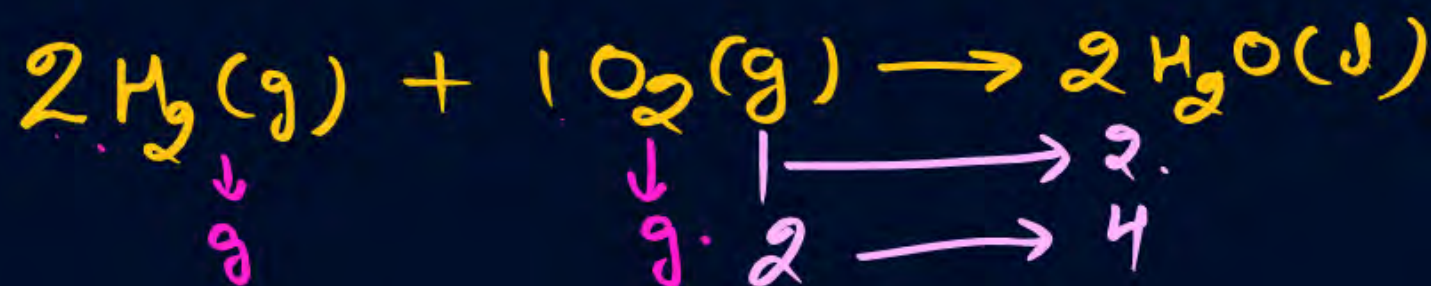
10 g of hydrogen and 64 g of oxygen were filled in a steel vessel and exploded. Amount of water produced in this reaction will be:

A 2 mole

B 3 mole

C 4 mole

D 1 mole



$$\frac{10}{2} = 5$$

$$\frac{64}{32} = 2$$

$$\frac{5}{2} = 2.5$$

$$\frac{2}{1} = 2$$

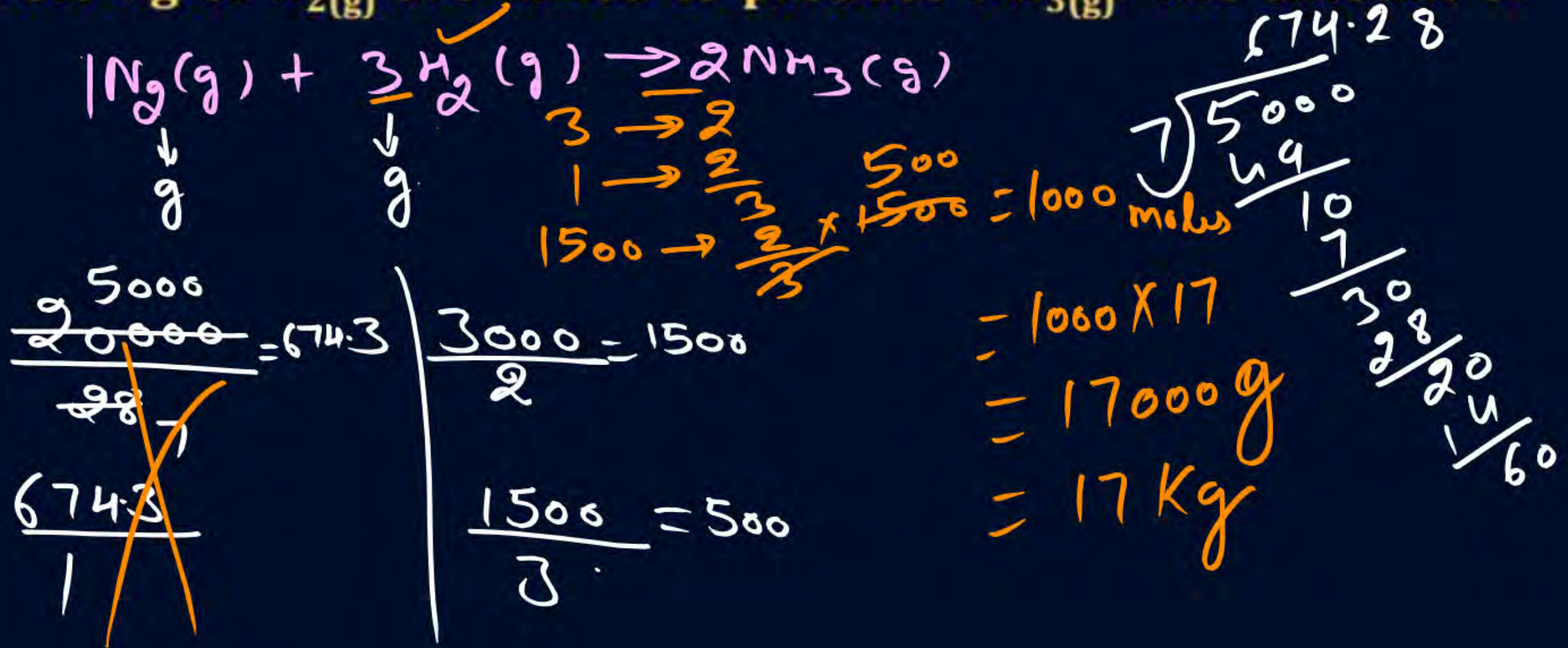
n
L.R.

QUESTION – (Karnataka CET (Med.) 2012)

20.0 kg of $N_{2(g)}$ and 3.0 kg of $H_{2(g)}$ are mixed to produce $NH_{3(g)}$. The amount of $NH_{3(g)}$ formed is:

- ☒ A 17 kg
- ☐ B 34 kg
- ☐ C 20 kg
- ☐ D 3 kg
- ☐ E 23 kg

n
L.R.



For the reaction: $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \longrightarrow 2\text{NH}_3(\text{g})$

Identify dihydrogen (H_2) as a limiting reagent in the following reaction mixtures.

Molar mass of $\text{H}_2 = 2 \text{ g}$ & Molar mass of $\text{N}_2 = 28 \text{ g}$

☒ **A** $\frac{56}{28} \text{ g of N}_2 + \frac{10}{2} \text{ g of H}_2$

$$\text{L.R. N}_2 \\ \frac{2}{1} = 2$$

$$\text{L.R. H}_2 \\ \frac{5}{3} = 1.66$$

☐ **B** 35 g of N_2 + 8 g of H_2

☐ **C** 14 g of N_2 + 4 g of H_2

☐ **D** 28 g of N_2 + 6 g of H_2

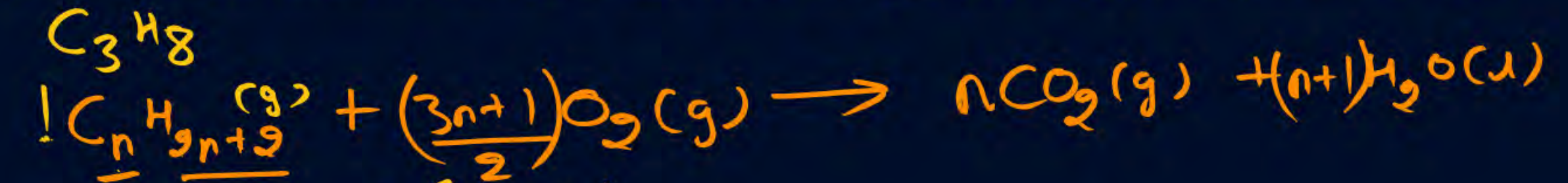
5 L of an alkane requires 25 L of oxygen for its complete combustion. If all volumes are measured at constant temperature and pressure, the alkane is :

A Isobutane

B Ethane

C Butane

D Propane



$$x = n \quad 1L \rightarrow \left(\frac{3n+1}{2}\right)$$

$$y = 2n+2 \quad 5L \rightarrow \cancel{5} \left(\frac{3n+1}{2}\right) = 5$$

$$3n+1 = 2 \times 5 = 10 \Rightarrow 3n = 10 - 1 = 9$$

$$n = \frac{9}{3} = 3$$

$$\frac{n + 2n+2}{4}$$

$$\frac{4n+2n+2}{4} = \frac{6n+2}{4} = \cancel{2} \frac{(3n+1)}{2}$$

$\frac{54}{102}$

When 81.0 g of aluminium is allowed to react with 128.0 g of oxygen gas, the mass of aluminium oxide produced in grams is _____. (Nearest integer)

Given :

Molar mass of Al is 27.0 g mol^{-1}

Molar mass of O is 16.0 g mol^{-1}



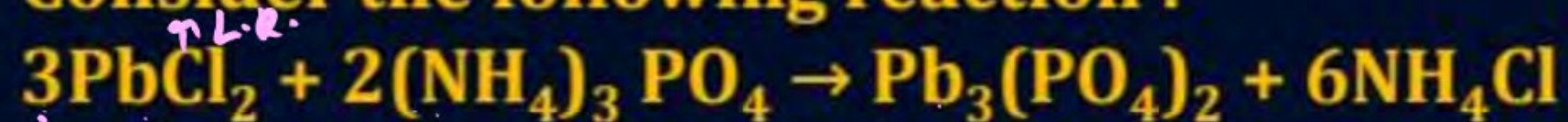
$$\frac{81}{27} = 3 \quad \frac{128}{32} = 4$$

$$\frac{3}{2} \times 102 = 153 \text{ g}$$

L.R $\frac{3}{4}$ ~~$\frac{4}{3}$~~

$$\begin{array}{l} 4 \rightarrow 2 \\ 3 \rightarrow \frac{2 \times 3}{4 \times 2} = \frac{3}{2} \end{array}$$

Consider the following reaction :



If 72 mmol of PbCl_2 is mixed with 50 mmol of $(\text{NH}_4)_3\text{PO}_4$, then the amount of $\text{Pb}_3(\text{PO}_4)_2$ formed is 24 mmol (nearest integer)

$$\text{LR} = \frac{72}{3} = 24 \quad \frac{50}{2} = 25$$

$$3 \longrightarrow 1$$

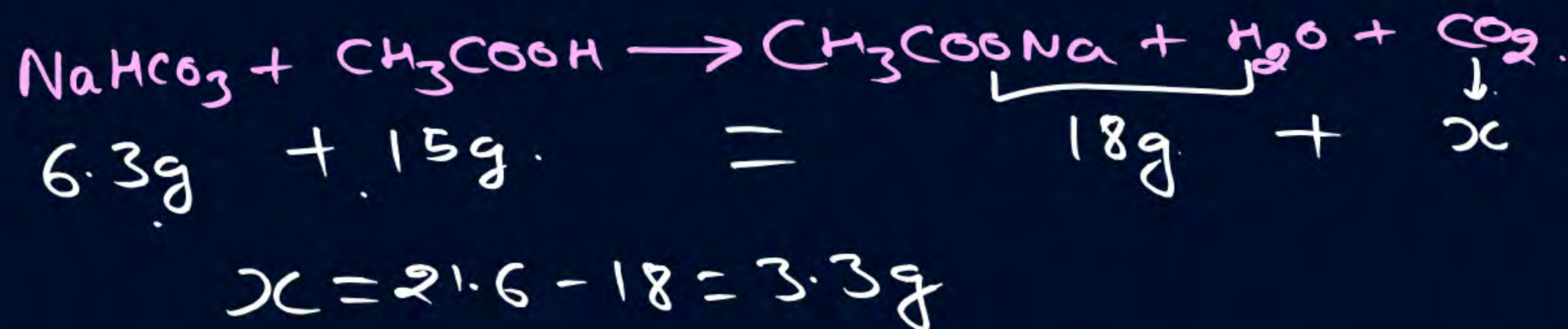
$$1 \longrightarrow \frac{1}{3}$$

$$72 \longrightarrow \frac{1}{3} \times 72 = 24 \text{ mmol}$$


Question



If 6.3 g of NaHCO_3 are added to 15.0 g of CH_3COOH solution, the residue is found to weigh 18.0 g. What is the mass of CO_2 released in the reaction?



Which of the following statements align with the Law of Conservation of Mass?

- (A) In a chemical reaction, atoms can disappear. ✗
- ✓ (B) The total mass of a closed system remains constant. 
- (C) Combustion reactions often lead to increase in system mass.
- ✓ (D) Mass is neither created nor destroyed during chemical reactions.

Why was Lavoisier's conclusion revolutionary for chemistry at the time?

- ☒ (A) It opposed the then-dominant "phlogiston" theory.
- (B) It introduced the idea of atoms for the first time.
- (C) It used qualitative observations only.
- (D) It dismissed the role of oxygen in combustion.

Q1. Assertion & Reason



☒ Assertion (A): A natural and a synthetic sample of cupric carbonate have different elemental compositions by mass.

☒ Reason (R): The source of a compound affects its chemical composition.

Options:

- (A) Both A and R are true, and R is the correct explanation of A.
- (B) Both A and R are true, but R is not the correct explanation of A.
- (C) A is false, but R is true.
- ☒ (D) Both A and R are false.

THANK
YOU