

## SAMPLE QUESTIONS

### CHEMICAL REACTIONS

1. Classify following changes as physical or chemical.

breaking of egg	:	cleaning of dishes	:
boiling of egg	:	photosynthesis of plants	:
combustion of coal	:	souring of milk	:
burning of coal	:	grinding stones	:
digestion of food	:	fading leaves	:

2. Write and balance the chemical equations for the following word equations.

- A. potassium bromide → potassium metal + bromine
- B. calcium carbonate → calcium oxide + carbon dioxide gas
- C. zinc metal + oxygen gas → zinc oxide
- D. tricarbon hexahydride + oxygen gas → carbon dioxide + water
- E. iron metal + copper(II) sulfate → iron(II) sulfate + copper metal

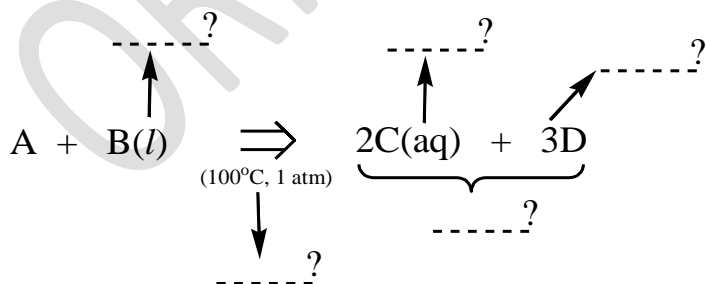
3. Balance the following chemical equations and determine the type of the reactions.

- |   |       |
|---|-------|
| A. $\text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + \text{H}_2\text{O}$                            | Type: |
| B. $\text{C}_4\text{H}_{10} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$                        | Type: |
| C. $\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow \text{BaSO}_4 + \text{AlCl}_3$                     | Type: |
| D. $\text{Si} + \text{S}_8 \rightarrow \text{Si}_2\text{S}_4$   | Type: |
| E. $\text{Ca} + \text{AlCl}_3 \rightarrow \text{CaCl}_2 + \text{Al}$  | Type: |
| F. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \rightarrow \text{Cr}_2\text{O}_3 + \text{N}_2 + \text{H}_2\text{O}$ | Type: |

4. Determine the formula of X in the following balanced equations.

- |  |         |
|--|---------|
| A. $\text{C}_{12}\text{H}_{22}\text{O}_{11} \rightarrow 12\text{C} + 11\text{X}$   | X:..... |
| B. $2\text{NH}_4\text{SCN} + \text{Ba}(\text{OH})_2 \rightarrow 2\text{X} + 2\text{H}_2\text{O} + \text{Ba}(\text{SCN})_2$ | X:..... |
| C. $3\text{P} + 5\text{HNO}_3 + 2\text{H}_2\text{O} \rightarrow 3\text{H}_3\text{PO}_4 + 5\text{X}$                        | X:..... |
| D. $\text{Fe}_2\text{O}_3 + 6\text{X} \rightarrow 2\text{FeCl}_3 + 3\text{H}_2\text{O}$                                    | X:..... |
| E. $3\text{X} + 2\text{H}_3\text{PO}_4 \rightarrow \text{Mg}_3(\text{PO}_4)_2 + 3\text{H}_2\text{O}$                       | X:..... |

5. Write the meaning of signs and symbols in the given chemical equation.



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