

SECTION-01 - BE-01

BASICS OF SCIENCE AND ENGINEERING

PHYSICS

- 1. Units and Measurements**
- 2. Classical Mechanics**
- 3. Electric Current**
- 4. Heat and Thermometry**
- 5. Wave Motion, Optics and Acoustics**

CHEMISTRY

- 6. Chemical Reactions and Equations**
- 7. Acids, Bases and Salts**
- 8. Metals and Non-Metals**

COMPUTER PRACTICE

- 9. Computer Practice**

ENVIRONMENT SCIENCES

- 10. Environmental Sciences**

CHEMISTRY

6. Chemical Reactions and Equations

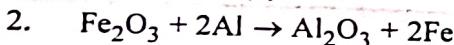
Multiple Choice Questions (MCQs)

1. Which of the statements about the reaction below are incorrect ?



- (a) Lead is getting reduced.
- (b) Carbon dioxide is getting oxidised
- (c) Carbon is getting oxidised
- (d) Lead oxide is getting reduced
- (i) (a) and (b)
- (ii) (a) and (c)
- (iii) (a), (b) and (c)
- (iv) all

Ans. : (i) (a) and (b)



The above reaction is an example of a

- (a) combination reaction
- (b) double displacement reaction
- (c) decomposition reaction
- (d) displacement reaction

Ans. : (d)

3. What happens when dilute hydrochloric acid is added to iron fillings ? Tick the correct answer.

- (a) Hydrogen gas and iron chloride are produced.
- (b) Chlorine gas and iron hydroxide are produced
- (c) No reaction takes place
- (d) Iron salt and water are produced

Ans. : (a)

4. One of the following does not happen during a chemical reaction. This is :

- (a) Breaking of old chemical bonds and formation of new chemical bonds.
- (b) Formation of new substances with entirely different properties.
- (c) Atoms of one element change into those of another element to form new products
- (d) A rearrangement of atoms takes place to form new products.

Ans. : (c)

5. You are given the solution of lead nitrate. In order to obtain a yellow precipitate you should mix with it a solution of :

- (a) Postassium chloride
- (b) Potassium nitride
- (c) Potassium sulphide
- (d) Potassium iodide

Ans. : (d)

6. An acid which can decolourise purple coloured potassium permangante solution is :

- (a) sulphuric acid
- (b) citric acid
- (c) carbonic acid
- (d) hydrochloric acid

Ans. : (c)

7. One of the following is an endothermic reaction. This is :

- (a) combination of carbon and oxygen to form carbon monoxide
- (b) combination of nitrogen and oxygen to form nitrogen monoxide
- (c) combination of glucose and oxygen to form carbon dioxide and water
- (d) combination of zinc and hydrochloride acid to form zinc choride and hydrogen

Ans. : (b)

8. One of the following is an exothermic reaction. This is :

- (a) electrolysis of water
- (b) conversion of limestone into quickline
- (c) process of respiration
- (d) process of photosynthesis

Ans. : (c)

9. The chemical equations are balanced to satisfy one of the following laws in chemical reactions. This law is known as :

- (a) Law of conservation of momentum
- (b) Law of conservation of mass
- (c) Law of conservation of motion
- (d) law of conservation of magnetism

Ans. : (b)

10. Information is not obtained by the balance chemical equation choose correct one.

- Physical states of reactants and products
- Symbols and formulae of all the substances involved in a particular reaction.
- Number of atoms / molecules of the reactants and products formed.
- Whether a particular reaction is actually feasible or not.

Ans. : (d)

11. Following are exothermic reaction choose correct one.

- Evaporation of water
- Dilution of H_2SO_4
- Reaction of water with quick lime
- Sublimation of crystalline camphor

- (i) and (ii)
- (iii) and (iv)
- (i) and (iv)
- (ii) and (iii)

Ans. : (d)

12. Reaction : $4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(g)$ is an example of :

- displacement reaction
- combustion reaction
- redox reaction
- neutralisation reaction

- (i) and (iv)
- (ii) and (iii)
- (iii) and (iv)
- (i) and (ii)

Ans. : (b)

13. Which of the following reaction occurs in white washing of walls ?

- $2Ca + O_2 \rightarrow 2CaO$
- $CaO + H_2O \rightarrow Ca(OH)_2 + \text{heat}$
- $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
- $Ca(OH)_2 \rightarrow CaO + H_2O$

Ans. : (c)

14. Dilute hydrochloric acid is added to test tube containing pieces of zinc. The following observations are recorded. Identify the correct observation.

- The surface of metal becomes lustrous
- The reaction mixture becomes milky
- Odour of pungent smelling gas is experienced
- A colourless and odourless gas is formed

Ans. : (d)

15. Potato chips manufacturers usually flush bags of chips with which inert gas to prevent the chips from getting oxidised ?

- Oxygen
- Hydrogen
- Chlorine
- Nitrogen

Ans. : (d)

16. Following is not a single displacement reaction.

- $CuO + H_2 \rightarrow H_2O + Cu$
- $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
- $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$
- $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

Ans. : (c)

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