SCIENCE QUIZ, OCT- 2021

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1. What are the two observations when ferrous sulphate is heated in a dry test tube.
   (A) light green colour changes to reddish brown colour
   (B) sulphur dioxide gas and sulphur trioxide gas are evolved
   (C) brown colour of ferric oxide is obtained
   (D) all of the above
2. What are the products formed when 1 ml of dilute HCl is added to 1 gram of sodium metal?
   (A) sodium chloride and hydrogen gas
   (B) sodium hydroxide and chlorine gas
   (C) sodium chloride and chlorine gas
   (D) sodium hydroxide and hydrogen gas
3. The elements whose oxides can turn blue litmus solution red are –
   (A) lithium and sodium (B) copper and potassium
   (C) carbon and hydrogen (D) phosphorus and sulphur
4. Zinc oxide is a metal oxide. Which of the following term best describe the nature of zinc oxide?
   (A) acidic oxide (B) basic oxide
   (C) an amphoteric oxide (D) a neutral oxide
5. A metal less reactive and another metal more reactive than hydrogen are-----
   (A) ammonium and lead (B) iron and magnesium
   (C) copper and tin (D) copper and mercury
6. Which of the following pair of reactants can undergo a displacement reaction under appropriate conditions?
   (A) $MgSO_4$ + Fe (B) $ZnSO_4$ + Fe
   (C) $MgSO_4$ + Pb (D) $CuSO_4$ + Fe

7. Marble statues are corroded or stain when they repeatedly come into contact with polluted rain water. Identify the main reason.
   (A) decomposition of calcium carbonate to calcium oxide
   (B) polluted water is basic in nature hence it reacts with calcium carbonate
   (C) polluted water is acidic in nature hence it reacts with calcium carbonate
   (D) calcium carbonate dissolves in water to give calcium hydroxide.
8. Calcium oxide can be reduced to calcium, by heating with sodium metal. Which compound would act as an oxidizing agent in the above process?
   (A) sodium (B) sodium oxide (C) calcium (D) calcium oxide.
9. Chlorine gas reacts with ------- to form bleaching powder.
   (A) dry calcium hydroxide
   (B) dilute solution of calcium hydroxide
   (C) concentrated solution of calcium hydroxide
   (D) dry calcium oxide
10. Although nitrogen is the most abundant gas in the atmosphere, it does not take part in combustion. Identify the correct reason for this statement.
   (A) nitrogen is a reactive gas
   (B) nitrogen is an inert gas
   (C) nitrogen is an explosive gas
   (D) only hydrocarbon can take part in combustion
11. Identify the types of chemical reaction occurring during the combustion of fuel.
   (A) oxidation and endothermic reaction
   (B) decomposition and exothermic reaction

(C) oxidation and exothermic reaction

(D) combination and endothermic reaction

12. On the basis of evolution /absorption of energy, which of the following processes are similar to combustion of fuel? (i) photosynthesis in plants (ii) respiration in the human body (iii) decomposition of vegetable matter (iv) decomposition of ferrous sulphate.

(A) (ii) & (iii) (B) (i) & (ii) (C) (iii) & (iv) (D) (ii) & (i)

13. Which of the following statement is correct for the water with detergents dissolved in it?

(A) low concentration of hydroxide ion (OH^-) and high concentration of hydronium ion (H_3O^+)

(B) high concentration of hydroxide ion (OH^-) and low concentration of hydronium ion (H_3O^+)

(C) high concentration of hydroxide ion (OH^-) as well as hydronium ion (H_3O^+)

(D) equal concentration of both Hydroxide ion and hydronium ion (H_3O^+)

14. High content of phosphate ion in river Jamuna may lead to – --

(A) decrease level of dissolved Oxygen and increased growth of algae

(B)decreased level of dissolved oxygen and no effect of growth of algae

(C) increased level of dissolved oxygen and increased growth of algae

(D) decreased level of dissolved Oxygen and decreased growth of algae

15. If a sample of water containing detergents is provided to you, which of the following methods will you adopt to neutralize it?

(A) treating the water with baking soda

(B) treating the water with vinegar
(C) treating the water with caustic soda
(D) treating the water with washing soda

16. The elements whose oxides can turn phenolphthalein solution pink are -----
(A) sodium and potassium (B) potassium and carbon
(C) sodium and sulphur (D) potassium and phosphorus

17. Metal A burns in air, on heating, to form an oxide A_2O_3 whereas another metal B burns in air only on strong heating to form an oxide BO. The two oxides A_2O_3 and BO can react with hydrochloric acid as well as sodium hydroxide solution to form the corresponding salts and water. What are the nature of oxides A_2O_3 and BO?
(A) amphoteric oxide and acidic oxide
(B) amphoteric oxide and basic oxide
(C) both are amphoteric oxides
(D) both are neutral oxide

18. A zinc plate was kept in a glass container having copper sulphate solution. On examining it was found that the blue colour of the solution is getting lighter and lighter. After a few days, when the zinc plate was taken out of the solution, a number of small holes were noticed in it. State the reason.
(A) zinc metal is more reactive than copper
(B) dissolving of zinc metal forms tiny holes in zinc plate
(C) blue colour of copper sulphate solution gets lighter and lighter due to the formation of colourless zinc sulphate solution.
(D) all the above

19. Element X reacts with element Y to form a compound Z. During the formation of compound Z, atoms of X lose one electron each whereas atoms of Y gain one electron each. Which of the

following property is not shown by a compound Z?

(A) high melting point

(B) low melting point

(C) occurrence as solid

(D) conduction of electricity in molten state

20. The rechargeable battery used in mobile phones handset is usually -----

(A) lead ion battery (B) sodium ion battery

(C) hydrogen ion battery (D) lithium ion battery

ANSWERS

1. (D) 2. (A) 3. (D) 4. (C) 5. (C) 6. (D) 7. (C)
8. (D) 9. (A) 10. (B) 11. (C) 12. (A) 13. (B) 14. (A)
15. (B) 16. (A) 17. (C) 18. (D) 19. (B) 20. (D)

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