

QB365
Model Question Paper - 1
10th Standard CBSE

Science

Reg.No. :

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Time : 02:00:00 Hrs

Total Marks : 100

Section -A

- 1) What happens when dilute hydrochloride acid is added to iron fillings? Tick the correct answer. **1**
- (a) Hydrogen gas and Iron chloride are produced. (b) Chloride gas and Iron hydroxide are produced.
(c) No reaction takes place (d) Iron salt and water are produced
- 2) Which of the following statements about the given reaction are correct? **1**
- $$3\text{Fe(s)} + 4\text{H}_2\text{O(g)} \rightarrow \text{Fe}_3\text{O}_4\text{(s)} + 4\text{H}_2\text{(g)}$$
- (i) Iron metal is getting oxidised
(ii) Water is getting reduced
(iii) Water is acting as reducing agent
(iv) Water is acting as oxidising agent
(a) (i), (ii) and (iii) (b) (iii) and (iv) (c) (i), (ii) and (iv) (d) (ii) and (iv)
- 3) Which among the following is /are double displacement reaction(s) ? **1**
- (i) $\text{Pb} + \text{CuCl}_2 \rightarrow \text{PbCl}_2 + \text{Cu}$
(ii) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
(iii) $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
(iv) $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
(a) (i) and (iv) (b) (ii) only (c) (i) and (ii) (d) (iii) and (iv)
- 4) In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved temperature? **1**
- (a) $2\text{H}_2\text{(l)} + \text{O}_2\text{(l)} \rightarrow 2\text{H}_2\text{O(g)}$ (b) $2\text{H}_2\text{(g)} + \text{O}_2\text{(l)} \rightarrow 2\text{H}_2\text{O(l)}$ (c) $2\text{H}_2\text{(g)} + \text{O}_2\text{(g)} \rightarrow 2\text{H}_2\text{O(l)}$
(d) $2\text{H}_2\text{(g)} + \text{O}_2\text{(g)} \rightarrow 2\text{H}_2\text{O(g)}$
- 5) The reaction of H_2 gas with oxygen gas to form water is an example of **1**
- (a) redox reaction (b) combination reaction (c) exothermic reaction (d) all of these reactions
- 6) A solution reacts with crushed egg-shells to give a gas that turns lime-water milky. The solution contains. **1**
- (a) NaCl (b) HCl (c) LiCl (d) KCl
- 7) What happens when a solution of an acid is mixed with a solution of a base in a test tube? (a) The temperature of the solution increases (b) The temperature of the solution decreases (c) The temperatures of the solution remains the same (d) Salt formation takes place **1**
- (a) (i) only (b) (i) and (iii) (c) (ii) and (iii) (d) (i) and (iv)

- 8) Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements are true about the gas evolved? (i) It turns lime water milky (ii) It extinguishes a burning splinter (iii) It dissolves in a solution of sodium hydroxide (iv) It has a pungent odour 1
- (a) (i) and (ii) (b) (i), (ii) and (iii) (c) (ii), (iii) and (iv) (d) (i) and (iv)
- 9) Which of the following are present in a dilute aqueous solution of hydrochloric acid? 1
- (a) $H_3O^+ + CH^-$ (b) $H_3O^+ + OH^-$ (c) $Cl^- + OH^-$ (d) unionised HCl
- 10) An element reacts with oxygen to give a compound with a high melting point. This compound is also suitable in water. The element is likely to be 1
- (a) Calcium (b) Carbon (c) Silicon (d) Iron
- 11) Which one of the following metals do not react with cold as well as hot water? 1
- (a) Na (b) Ca (c) Mg (d) Fe
- 12) The composition of aqua-regia is 1
- (a) Dil.HCl : Conc.HNO₃ [3 : 1] (b) Conc.HCl : Dil.HNO₃ [3 : 1] (c) Conc.HCl : Conc.HNO₃ [3 : 1]
(d) Dil.HCl : Dil.HNO₃ [3 : 1]
- 13) An alloy is 1
- (a) An element (b) A compound (c) A homogeneous mixture (d) A heterogeneous mixture
- 14) The autotrophic mode of nutrition requires 1
- (a) Carbon dioxide and water (b) Chlorophyll (c) Sunlight (d) All of the above
- 15) Which part of alimentary canal receives bile from the liver? 1
- (a) Stomach (b) Small intestine (c) Large intestine (d) Oesophagus
- 16) The filtration units of kidneys are called 1
- (a) Ureter (b) Urethra (c) Neurons (d) Nephrons
- 17) During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the 1
- (a) Cytoplasm (b) Chloroplast (c) Mitochondria (d) Golgi body
- 18) The brain is responsible for 1
- (a) Thinking (b) Regulating the heart beat (c) Balancing the body (d) All of the above
- 19) Spinal cord originates from 1
- (a) Cerebrum (b) Medulla (c) Pons (d) Cerebellum
- 20) The hormone which increases the fertility in males is called 1
- (a) Oestrogen (b) Testosterone (c) Insulin (d) Growth hormone

Section - B

- 21) A solution of a substance 'X' is used for white washing. 2
- (i) Name the substance 'X' and write its formula.
(ii) Write the reaction of the substance 'X' named in (i) above with water.
- 22) Write the balanced chemical equation for the following and identify the type of reaction in each case. 2
- (a) Potassium bromide(aq) + Barium Iodide(aq) → Potassium iodide(aq) + Barium bromide(s)
(b) Zinc Carbonate(s) + Chlorine(g) → Hydrogen chloride(g)
(d) Magnesium(s) + Hydrochloric acid(aq) → Magnesium chloride(aq) + hydrogen(g)

- 23) During the reaction of some metals with dilute hydrochloric acid, following observations were made. 2
- (a) Silver metal does not show any change
 - (b) The temperature of the reaction mixture rises when aluminium(Al) is added.
 - (c) The reaction of sodium metal is found to be highly explosive
 - (d) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.
- Explain these observations given suitable reasons.
- 24) Why is photosynthesis considered as endothermic reaction? 2
- 25) How is the concentration of hydronium ions affected when a solution of an acid is diluted? 2
- 26) Why do acids not show acidic behaviour in the absence of water? 2
- 27) Explain why, an aqueous solution of sodium sulphate is neutral while an aqueous solution of sodium carbonate is basic in nature. 2
- 28) (a) Which gas is produced when dilute hydrochloric acid is added to a reactive metal? (b) Write the chemical reaction when iron reacts with dilute sulphuric acid. 2
- 29) What chemical process is used for obtaining a metal from its oxide? 2
- 30) What are amphoteric oxides? Give two examples of amphoteric oxides. 2
- 31) Compound X and aluminium are used to join railway tracks. 2
- (a) Identify the compound X
 - (b) Name the reaction
 - (c) Write down its reaction.
- 32) How is the small intestine designed to absorb digested food? 2
- 33) Why do fishes die when taken out of water? 2
- 34) In each of the following situation what happens to the rate of photosynthesis? 2
- (i) Cloudy days
 - (ii) No rainfall in the area
 - (iii) Good manuring in the area
 - (iv) Stomata get blocked due to dust
- 35) Draw the human heart and label the following on it: 2
- (i) Aorta,
 - (ii) Coronary,
 - (iii) pulmonary trunk and
 - (iv) superior vena cava.
- 36) How do auxins promote the growth of a tendril around a support? 2
- 37) What is a tropic movement? Explain with an example. 2
- 38) Explain the cause of shoots of the plant bending towards light. 2
- 39) Name the hormones released by the following: 2
- (a) Pancreas (b) Pituitary
 - (c) Testis (d) Ovary
- 40) Define water of crystallisation with two examples. How will you prove their existence in the examples given by you? 2

Section - C

- 41) What happens when a piece of 5
- (a) Zinc metal is added to copper sulphate solution?
 - (b) Aluminium metal is added to dilute hydrochloric acid?
 - (c) Silver metal is added to copper sulphate solution? Write the balanced chemical equation if the reaction occurs.
- 42) (a) Why is sulphuric acid called 'King of Chemicals'? (b) Describe the three chemical reactions that take place during the conversion of sulphur dioxide to sulphuric acid in the 'Contact Process'. (c) Why should water be never added dropwise to concentrated sulphuric acid? 5
- 43) Account for the following: 5
- (i) State the relation between hydrogen ion concentration of an aqueous solution and its pH.
 - (ii) An aqueous solution has a pH value of 7.0. Is this solution acidic, basic or neutral?
 - (iii) Which has a higher pH value, 1M HCl or 1M NaOH solution?
 - (iv) Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets? What should we do to prevent it?
 - (v) How do $[H^+]$ ions exist in water?
- 44) Give the steps involved in the extraction of metals of low and medium reactivity from their respective sulphide ores. 5
- 45) (a) What is corrosion of metals? Name one metal which does not corrode and one which corrodes on being kept in atmosphere. 5
- (b) How will you show that the rusting of iron needs oxygen and moisture at the same time?
- 46) Describe the process of urine formation in kidneys. 5
- 47) (a) Draw the respiratory system of human beings. 5
- (b) Label the following on the diagram drawn: Larynx, Trachea, Primary Bronchus, Lungs
 - (c) What happens to the carbon dioxide which collects in human tissues?
- 48) Mention one function for each of these hormones: 5
- (a) Thyroxin
 - (b) Insulin
 - (c) Adrenaline
 - (d) Growth hormone
 - (e) Testosterone
