SUMMER VACATION HOME WORK

CLASS -X SUBJECT – SCIENCE

Q1. Write symbols of elements and their name in given your textbook (ch. 1and learn them)

Q2. Write the name of compounds and their name in given your test book . (ch.1)

Q3. What is a balanced chemical equation? Why should chemical equations be balanced?

Q4.Write the balanced equation for the following chemical reactions.

(i) Hydrogen + Chlorine → Hydrogen chloride
(ii) (ii) Barium chloride + Aluminium sulphate → Barium sulphate + Aluminium chloride
(iii) (iii) Sodium + Water → Sodium hydroxide + Hydrogen

Q5. Write a balanced chemical equation with state symbols for the following reactions.

(i) Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride. (ii) Sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water.

Q6. Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions.

Q7.What is the difference between displacement and double displacement reactions? Write equations for these reactions.

Q.8. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

(a) Nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773K to form ammonia gas.

(b) Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

(c) Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated H2 SO4 .

(d) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

Q9. Complete the missing components/variables given as x and y in the following reactions

(a) $Pb(NO_3)_2(aq) + 2KI(aq) \rightarrow PbI_2(x) + 2KNO_3(y)$

(b) $Cu(s) + 2Ag\,NO_3(aq) \rightarrow Cu(NO3)_2(aq) + x(s)$

(c) $Zn(s) + H_2SO4\,(aq) \rightarrow ZnSO4\,(x) + H_2(y)$

(d) $CaCO_3(s) \rightarrow x\,CaO(s) + CO_2(g)$

Q11. On heating blue coloured powder of copper (II) nitrate in a boiling tube, copper oxide (black), oxygen gas and a brown gas X is formed

(a) Write a balanced chemical equation of the reaction.

(b) Identity the brown gas X evolved.

(c) Identity the type of reaction.

(d) What could be the pH range of aqueous solution of the gas X? Q12.

Which among the following are physical or chemical changes? (a)

Evaporation of petrol

(b) Burning of Liquefied Petroleum Gas (LPG)

(c) Heating of an iron rod to red hot.

(d) Curdling of milk

(e) Sublimation of solid ammonium chloride

Q13. Name the following (a) The process in plants that links light energy with chemical energy (b) Organisms that can prepare their own food (c) The cell organelle where photosynthesis occurs (d) Cells that surround a stomatal pore (e) Organisms that cannot prepare their own food (f) An enzyme secreted from gastric glands in stomach that acts on proteins.

Q14. How do the guard cells regulate opening and closing of stomatal pores? Q15.

Differentiate between an autotroph and a heterotroph.

Q16. How does aerobic respiration differ from anaerobic respiration?

Q17. Differentiate between an artery and a vein.

Q18. Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?

Q19. Mention the major events during photosynthesis.

Q20. Draw labeled diagram of the following

(a) Human digestive system
(b)Human respiratory system
(c) Stomatal pore –Open and closed
(d) Double circulation in humans

Q21. Make a working model for science exhibition.

Case study questions

Q22.Read the following and answer any four questions from (i) to (v).

Heterotrophic nutrition is a mode of nutrition in which organisms obtain readymade organic food from outside sources. The organisms that depend upon outside sources for obtaining organic nutrients are called heterotrophs. Heterotrophic nutrition is of three types: saprophytic, parasitic and holozoic nutrition.

(i) In which of the following groups of organisms food material is broken outside the body and absorbed?
(a) Mushroom, green plants, Amoeba
(b) Yeast, mushroom, bread mould
(c) Paramecium, Amoeba, Cuscuta
(d) Cuscuta, lice, tapeworm

(ii) Which of the following is a parasite?
(a) Yeast
(b) Taenia
(c) Amoeba
(d) Earthworm

(iii) Which of the following is an example of saprotroph? (a) Grass
(b) Mushroom
(c) Amoeba
(d) Paramecium

(iv) Heterotrophic nutrition involves
(a) production of simple sugar from inorganic compounds
(b) utilisation of chemical energy to prepare food
(c) utilisation of energy obtained by plants
(d) all of these.

(v) In Amoeba, food is digested in
(a) mouth
(b) pseudopodia
(c) cilia
(d) food vacuole

Q23. *Read the following and answer any four questions from (i) to (v).* Rishaan experienced muscular cramps during the training session for his upcoming football match. Mr. Sen, his coach advised him on a schedule of some aerobic exercises to overcome his problem of muscular cramps. Rishaan followed his coach's advice and did not face the problem of muscular cramps again during his match

(i) Which life process is depicted by the above passage?
- (a) Respiration
- (b) Digestion
- (c) Lutrition
- (d) Excretion

(ii) lack of oxygen in muscles often leads to cramps due to
- (a) Conversion of pyruvate to ethanol
- (b) Conversion of glucose to pyruvate
- (c) Conversion of pyruvate to glucose
- (d) Conversion of pyruvate to lactic acid

(iii) Is lactic acid produced by anaerobic respiration in yeast?
- (a) YES
- (b)NO

(iv) Why there is an increase in lactic acid concentration in the blood at the beginning of the exercise?
- (a)Yack of oxygen
- (b) Excess of oxygen
- (c) Yack of carbon dioxide
- (d)Excess of carbon dioxide

(v) Is carbon dioxide produced by anaerobic respiration in yeast? (a)YES
(b)NO

Q24. *Read the following and answer any four questions from (i) to (v).* A reaction in which two or more reactants combine to form a single product is called a combination reaction. For example, calcium oxide reacts vigorously with water to form calcium hydroxide. The reaction is highly exothermic in nature, as lots of heat is produced during the reaction. $CaO(s)+H_2O(l)\rightarrow Ca(OH)_2(aq)+$ Heat $CaO(s)+H_2O(l)\rightarrow Ca(OH)_2(aq)+$ Heat Calcium oxide Water Calcium hydroxide

Solution of $Ca(OH)_2$ is used for white wash the walls. Calcium hydroxide reacts slowly with carbon dioxide in air to form a thin layer of calcium carbonate on the wall which gives a shiny appearance to wall. Calcium carbonate will form after two or three days of white wash.

(i) What is the chemical name of quick lime?

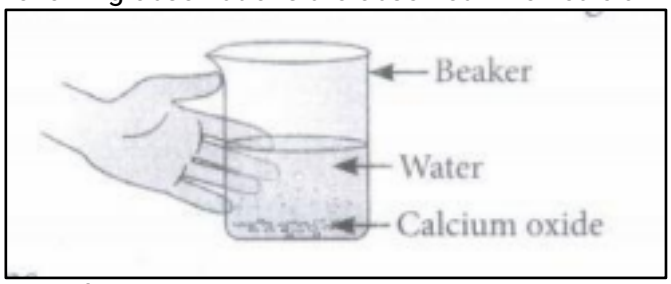
(a) Calcium oxide (b) Calcium carbonate (c) Calcium hydroxide (d) Carbon dioxide

(ii) When carbon dioxide is passed through lime water,

(a) calcium hydroxide is formed (b) white precipitate of CaO is formed

(c) lime water turns milky (d) colour of lime water becomes green.

(iii) Following observations are observed when calcium oxide reacts vigorously with water.



Identify the incorrect observations

(I) It is an endothermic reaction (II) Slaked lime is produced. (III) Quick lime is produced. (IV) It is an exothermic reaction. (V) It is a combination reaction

(a) (I) and (II) (b) (III) and (IV) (c) (I) and (III) (d) (II), (IV) and (V) (iv) Quick lime combines Vigorously with water to form (A) which reacts slowly with the carbon dioxide in air to form (B) Identify the compounds(A) and (B)

(A) (B)

(a) Calcium carbonate Calcium hydroxide

(b) Calcium hydroxide Calcium carbonate

(c) Calcium Calcium bicarbonate

(d) Calcium bicarbonate Calcium

(v) Among the following, the endothermic reaction 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 hydrochloric acid to form zinc chloride and hydrogen

Q25. Reactions in which one element takes place of another element in a compound, are known as displacement reactions. In general, more reactive elements displaces a less reactive element from its compound. In all single displacement reactions, only one element displaces another element from its compound. The single displacement reactions are, however, written as just displacement reactions. The displacement reaction between iron (III) oxide and powdered aluminium produces so much heat that iron metal obtained is in molten form. (i) Copper displaces which of the following metals from its salt solution? (a) $ZnSO_4$ (b) $FeSO_4$ (c) $AgNO_3$ (d) $NiSO_4$

(ii) When zinc reacts with dilute sulphuric acid, the gas evolved is

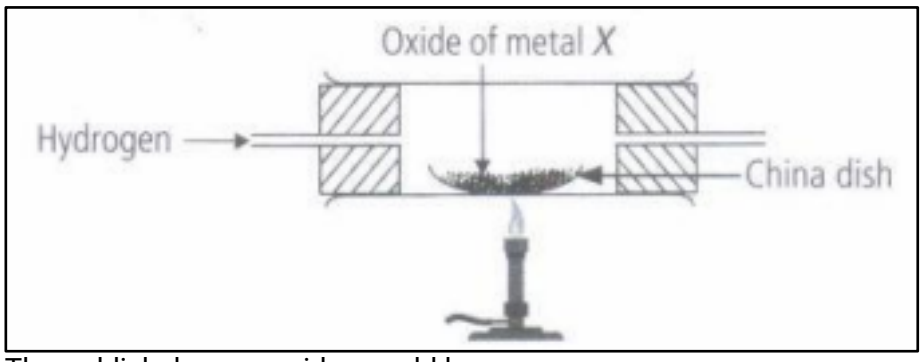
(a) red in colour and have a sweet smelling

(b) green in colour and have a foul smell

(c) colourless, odourless and burns with a pop sound

(d) colourless, pungent smelling and burns with a pop sound

(iii) When dry hydrogen is passed over a heated oxide of metal X using the apparatus shown below, a reddishbrown residue is obtained



The reddish -brown residue could be

(a) copper (b) lead (c) silver (d) zinc

(iv) Which of the following reactions is a displacement reaction?

(a) $CaO+H_2O \rightarrow Ca(OH)_2$ (a) $CaO+H_2O \rightarrow Ca(OH)_2$

(c) $Mg+CuSO_4 \rightarrow MgSO_4+Cu$ (c) $Mg+CuSO_4 \rightarrow MgSO_4+Cu$

(b) $MgCO_3 \rightarrow Mg+CO_2$ (b) $MgCO_3 \rightarrow Mg+CO_2$

(d) $H_2+Cl_2 \rightarrow 2HCl$ (d) $H_2+Cl_2 \rightarrow 2HCl$

(v) When dilute hydrochloric acid is added to granulated zinc placed in a test tube, the observation made is

(a) the surface of the metal turns shining
(b) the reaction mixture turns milky
(c) greenish yellow gas is evolved
(d) the colourless and odourless gas evolves with a pop sound.

English — Class - 10A

classmate
Date
Page

1. Read Chapters :-
   Fiction - 1, 2, 3
   Poem - 1, 2, 3
   Drama - 1

2. MCB and workbook :-
   Unit :-
   1, 2, 3

3. Revise :- Rule of tenses, Active and Passive and Direct and Indirect

Hindi HHW – X B

1. अपठित पद्यांश - 03 – वस्तुनिष्ठ प्रश्नोत्तर - 05
2. अपठित गद्यांश - 03 – " " - 05
3. विज्ञापन - 03
4. अनुच्छेद लेखन - बिन्दु आधारित - 05
5. औपचारिक पत्र - 02
6. अनौपचारिक पत्र - 02