ST ANTONY'S CONVENT SCHOOL

Gagore Vijaypur

PHYSICS

CLASS : Xth

TOPIC : Light (Reflation and Refraction)

Science Class 10 Notes for Light (Reflection and Refraction)

1. Ray of Light : A line drawn in the direction of propagation of light is called a ray of light.

2. Beam of Light : A group of rays of light emitted by a source of light is called a beam of light. A light beam is of three types.

(i) Parallel beam : A group of light rays parallel to each other is known as parallel beam of light. 7.

(ii) Divergent beam : A group of light rays spreading out from a source of light is called divergent beam of light.

(iii) Convergent beam : A group of light rays meeting at a point is called convergent beam 8. of light.

3. Reflection of Light : There are some surfaces which have ability to send the light back in the same medium when light strikes it. This 9. phenomena of sending the light back in the same medium by a surface is called reflection of light.

(i) The incident ray, the reflected ray and the normal at the point of incidence, all lie in a same plane.

(ii) The angle of incidence is always equal to the angle of reflection, $\angle i = \angle r$.

4. Image : When light rays meet or appear to meet after reflection from a mirror,then it is called an image.

1. Real Image : It is a kind of image which is formed by actual intersection of light rays after reflection.

2. Virtual Image : It is a kind of image which is formed by producing the reflected rays backward after reflection.

5. Plane Mirror : Plane mirror is a piece of glass whose one side is polished by using silver paint, which is covered by a coating of red paint to protect the silver layer.

6. Spherical Mirrors : It is part of hollow glass sphere whose one surface is polished.

There are two types of spherical mirror.

(i) Concave Mirror : It is a spherical mirror whose outer surface is polished and inner or concave side is reflecting surface.

(ii) Convex Mirror : It is a spherical mirror whose inner is polished and outer side or convex side is the reflecting surface.

Principal Focus :

A point on the principal axis of a spherical mirror where the rays of light parallel to the principal axis meet or appear to meet after reflection from the mirror.

Focal Length :

The distance between the pole (P) and principal focus(F) of a spherical mirror is called the focal length of the mirror. It is denoted by f.

Uses of Concave Mirror :

(i) It is used as a shaving mirror because when it is placed close to the face, it forms a large image.

(ii) It is used in solar heating devices like solar cooker, because it converges Sun's rays over a small area to produce high temperature.

(iii) It is used for security checking purposes.

10. Uses of Convex Mirror :

(i) It is used as rear view mirror in automobiles because it gives erect image as well as diminished due to which Pt has wider field of view.

(ii) It is also used in street lights.

11. Mirror Formula :

It is a relation between distance of object, distance ofimage from the pole ofthe mirror and it's focal length, i.e., relation between 'u', 'v and It is given by

$$\frac{1}{f}=\frac{1}{u}+\frac{1}{v}$$

12. Magnification : It is defined as the ratio of height of image to the height of the object. It is denoted by letter m.

$$m=\frac{\text{height of image (I)}}{\text{height of object (O)}}$$

13. Refraction of Light : The bending of ray of light when it passes from one medium to another is called refraction of light.

Laws of Refraction :

(i) The incident ray, the refracted ray and the normal at the point of incidence all lie in the same plane.

(ii) When a ray of light undergoes refraction then the ratio of sine of angle of incidence to the sine of angle of refraction is constant.

14. The Refractive Index : The refractive index of medium 2 with respect to medium is given by the ratio of the speed of light in medium 1 and the speed of light in medium 2. This is usually represented by the symbol n_{21}. This can be expressed in an equation form as

$$n_{21} = \frac{\text{Speed of light in medium 1}}{\text{Speed of light in medium 2}} = \frac{v_1}{v_2}$$

15. Refraction by spherical lenses : Lens is a transparent medium which is formed by joining two pieces of spherical glass. There are two types of lenses.

(i) Convex Lens : It is a lens which is thicker at the centre and thinner at the edges.

(ii) Concave Lens : It is a lens which is thinner at the centre and thicker at the edges.

16. Terms related to a lens

Optical Centre of Lens : It is the centre of the lens through which light can pass without any deviation.

Principal Axis : It is the line passing through optical centre and is perpendicular to the line joining its edges.

Principal Focus : It is a point on the principal axis where all light rays which are parallel to principal axis either converge or appear to diverge from, after refraction.

17. Lens formula :

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

18. Magnification : Magnification, $m = h_2/h_1$

Ratio of height of image to the height of object.

It is also given by v/u i.e., Ratio of distance of image to the distance of object.

$$\therefore \frac{h_2}{h_1} = \frac{v}{u}$$

19. Power of a lens : A beam of light parallel to principal axis either gets converged or diverged after refraction by a lens. Some lenses converge the beam of light to a small extent and some lenses converge it to a large extent. This ability of lens to converge or diverge a beam of light is known as the power of lens.

Si unit of power of lens is dioptre : One dioptre is the power of a lens whose focal length is 1 m.

Power of a combination of two or more lenses :

If two or more lenses are placed together to form a combined lens then the power of this combined lens is equal to the sum of the powers of individual lenses.

$P = P_1 + P_2 + P_3 + \ldots\ldots$

1. Define the principal focus of a concave mirror.

Answer-

Light rays that are parallel to the principal axis of a concave mirror converge at a specific point on its principal axis after reflecting from the mirror. This point is called the principal focus of the concave mirror.

2. The radius of curvature of a spherical mirror is 20 cm. What is its focal length?

Answer-

Radius of curvature (R) = 20 cm

Radius of curvature of the spherical mirror = 2 × Focal length (f) R = 2f

f= R/2 = 20 / 2 = 10

Therefore, the focal length of the spherical mirror is 10 cm.

3. Name the mirror that can give an erect and enlarged image of an object.

Answer-

The mirror that can give an erect and enlarged image of an object is Concave Mirror.

4. Why do we prefer a convex mirror as a rear-view mirror in vehicles?

Answer-

Convex mirror is preferred as a rear-view mirror in cars and vehicles as it gives a wider field of view, which helps the driver to see most of the traffic behind him. Convex mirrors always form an erect, virtual, and diminished image of the objects placed in front of it.

5. **Find the focal length of a convex mirror whose radius of curvature is 32 cm.**

Answer-

Radius of curvature (R) = 32 cm

Radius of curvature = 2 × Focal length (f)

R= 2ff = R/2 = 32/2 = 16

Therefore, the focal length of the given convex mirror is 16 cm.

6. **A ray of light travelling in air enters obliquely into water. Does the light ray bends towards the normal or away from the normal? Why?**

Answer-

The light ray bends towards the normal. When a light ray enters from an optically rarer medium (which has low refractive index) to an optically denser medium (which has a high refractive index), its speed slows down and bends towards the normal. As water is optically denser than air, a ray of light entering from air into water will bend towards the normal.

7. Light enters from air to glass having refractive index 1.50. What is the speed of light in the glass? The speed of light in vacuum is 3 x 108 ms-1.

Answer-

Refractive index of a medium (nm) = Speed of light in vacuum/Speed of light in the medium

Speed of light in vacuum (c) = 3 × 108 m/s

Refractive index of glass (ng) = 1.50

Speed of light in the glass (v) = Speed of light in vacuum/ Refractive index of glass

= c/ng

=3 × 108/1.50 = 2x 108 ms-1.

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BIOLOGY

CLASS : Xth

TOPIC : Life Process

KEY CONCEPTS & GIST OF THE LESSON

- Life processes – The processes that are necessary for an organism to stay alive. Eg. Nutrition, respiration, etc.
- Criteria of life- (i) Growth (ii) Movement
- Nutrition- The process in which an organism takes in food, utilizes it to get energy, for growth, repair and maintenance, etc. and excretes the waste materials from the body.
- **Types of nutrition**

1. **Autotrophic nutrition** (Auto =self: trophos = nourishment) E.g. Plants, Algae, blue green bacteria.
    - Process – Photosynthesis(Photo=light; Synthesis= to combine)
    - Raw materials- (i) Carbon dioxide (ii)Water
    - Equation-
    - $6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{sunlight}} C_6H_{12}O_6 + 6O_2$
    - Energy conversion- Light/Solar energy to Chemical energy
    - Role off Chlorophyll- To trap the sun's energy for photosynthesis
    - Factors- (i) Carbon dioxide (ii) Water(iii) Light (iv) Temperature
    - Events/ Steps of photosynthesis-
        (i) Absorption of light energy by chlorophyll
        (ii) Conversion of light energy to chemical energy & Splitting of water molecule into Hydrogen & oxygen
        (iii) Reduction of Carbon dioxide to Carbohydrate
    - Gaseous exchange- (i) Gas used- Carbon dioxide
        (ii) By product - Oxygen
    - Source of raw materials-
        (i) Carbon dioxide –Land plants- Air, Aquatic plants- Water
        (ii) Water & Minerals - Soil

2. **Heterotrophic nutrition** (Hetero =others: trophos = nourishment) Eg. Animals, plants lacking chlorophyll like fungi.

(a) **Saprophytic nutrition**: Organisms feeds on dead decaying plants or animals material. E.g. Fungi, Bacteria

(b) **Parasitic nutrition**: Organisms obtain food from the body of another living (host)

- Endoparasite : Parasite lives inside the body of the host e.g. tapeworm, roundworm.
- Exoparasite : Parasite lives on the body of the host. E.g. lice, leech.

Note- The parasite benefits while the host is usually harmed e.g. Cuscutta-plant parasite (amar bel), plasmodium (malarial parasite).

(c) **Holozoic nutrition**: Organism (mostly animals) take in whole food and then digest it into smaller particles with enzyme. Eg. Amoeba, Paramoecium. Animals, human beings.

- Steps in Holozoic nutrition
    (i) Ingestion: taking in of food.
    (ii) Digestion: breaking down of complex food into simpler, absorbable form.
    (iii) Assimilation: Utilization of digested food from the body.
    (iv) Egestion: Removing undigested food from the body

- Nutrition in human beings

- Alimentary canal-
  Mouth → Oesophagus → Stomach → Small intestine → Large intestine
- Important gland/juices

(Refer to figure 6.6 page no.97 of N.C.E.R.T Text book)

Organ	Gland	Enzyme/Juice	Function
Mouth	Salivary glands	Salivary Amylase	Converts starch into sugar
Stomach	Gastric glands	Gastric juice- (i) Hydrochloric acid →	 (a) Kills harmful bacteria that enters with the food. (b) Makes the medium alkaline for the action of Pepsin
		(ii) Pepsin →	Digests proteins
		(iii) Mucus →	Protects the inner lining of the stomach from the corrosive action of Hydrochloric acid.
Small intestine	1) Liver	(i) Bile juice →	(a) Makes the medium acidic for the action of Pancreatic enzymes. (b) Breaks down large fat molecules into smaller globules so that enzymes can act upon them.
	2) Pancreas	(ii) Pancreatic Juice ▪ Amylase → ▪ Trypsin → ▪ Lipase →	 Converts Carbohydrates to glucose Converts Proteins to Amino acids Converts Fats into Fatty acids & Glycerol

- Peristaltic movements- Rhythmic contraction of muscles of the lining of Alimentary canal to push the food forward.
- Sphincter muscle- Helps in the exit of food from the stomach.

- Villi- Small finger like projections on the walls of-
  (v) Small intestine- To increase the surface area for the absorption of food.
  (vi) Large intestine- For absorption of water.

❖ **Respiration**- The process by which digested food is broken down with the help of Oxygen to release energy.

- Types of respiration- (i) Aerobic respiration (ii) Anaerobic respiration

Aerobic respiration	**Anaerobic respiration**

1. Takes place in presence of Oxygen.	1. Takes place in absence of Oxygen.
2. End products- Carbon dioxide & Water	2. End products- Ethanol & Carbon dioxide
3. More energy is released.	3. Less energy is released.
4. Takes place in Cytoplasm & Mitochondria	4. Takes place in only in Cytoplasm.
5. Complete oxidation of glucose takes place.	5. Incomplete oxidation of glucose takes place.
6. It occurs in most organisms.	6. It occurs in certain bacteria, yeast & certain tissues of higher organisms. E.g. In humans during vigorous exercise, when the demand for Oxygen is more than the supply, muscle cells respire anaerobically for some time.
7. Equation- Glucose→ Pyruvate→ CO_2 + H_2O + Energy	7. Equation- <u>In Yeast-</u> Glucose→ Pyruvate→ Ethanol + H_2O + Energy <u>In muscle cells -</u> Glucose→ Pyruvate→ Lactic acid + Energy

- Some common features of Respiratory organs-
  (i) Large surface area- for greater rate of diffusion of respiratory gases.
  (ii) Thin permeable walls – to ensure easy diffusion & exchange of gases.
  (iii) Extensive blood supply- Respiratory organs are richly supplied with blood vessels for quick transport of gases.
- Gaseous exchange in plants-
  - Process – Diffusion
  - Direction of diffusion depends on- (i) Environmental conditions
    (ii) Requirement of the plant.
  - Day time- Carbon dioxide given out during respiration is used for photosynthesis. Therefore only Oxygen is released, which is a major activity during the day.
  - Night time – Only respiration takes place. Therefore only Carbon dioxide is released, which is a major activity during the night.

- Gaseous exchange in animals-
  - Terrestrial animals- take Oxygen from the atmosphere.
  - Aquatic animals- take Oxygen dissolved in water. (Oxygen content is low in water, therefore they breathe faster.
- Human Respiratory system-
  External nostrils → Nasal cavity → Trachea→ Bronchi → Bronchioles →Alveoli
  - Rings of cartilage present in the throat ensure that the trachea (air passage) does not collapse when there is less air in it.
  - Lungs – (i) Present in the thoracic cavity.
    (ii) They are spongy, elastic bags consisting of Bronchi, Bronchioles and Alveoli

- Respiration occurs in two phases-
- (i) External-Breathing, which is a mechanical process.
  (ii) Internal - Cellular respiration
- Mechanism of breathing – It includes : (i)Inhalation (ii) Exhalation
- Exchange of gases-
  - Unicellular organisms- By Diffusion
  - Animals- (i) As the body size is large, diffusion alone is not enough.
    (ii) Respiratory pigments also required.
    (iii) Respiratory pigment in human beings is Haemoglobin, which is present in red blood corpuscles.
    (iv) It has very high affinity for Oxygen.
    (iv) Carbon dioxide is more soluble in water than Oxygen, so it Gets dissolves in blood and is thus transported.

❖ Transportation

- Transportation in human beings-
  - Blood- (i) It is a fluid connective tissue.
    (ii) Components- (1) Fluid medium- Plasma
    (2) Red blood corpuscles
    (3) White blood corpuscles
    (4) Platelets suspended in plasma
    (iii) Plasma transports food, Oxygen, Carbon dioxide, Nitrogenous wastes, etc.
  - Functions of blood- (i) Transport of respiratory gases.
    (ii) Transport of nutrients.
    (iii) Transport of waste products.
    (iv) Defence against infection
  - Blood vessels- (i) Arteries (ii) Veins (iii) Capillaries

Arteries	Veins
1. Thick walled.	1. Thin walled.
2. Deep seated.	2. Superficial.
3. Carry blood away from the heart.	3. Carry blood to the heart.
4. Carry Oxygenated blood.	4. Carry Deoxygenated blood.
5. Valves absent.	5. Valves present

  - Heart- (Refer to figure 6.10 page no. 106 of N.C.E.R.T Text book)
    (i) It is a muscular organ, which works as a pump in the circulatory system.
    (ii) It is the size of our fist.
    (iii) It has two sides, which are separated by a partition so that the oxygenated and deoxygenated blood do not get mixed up.
    (iv) It has four chambers-
    Two upper chambers called Atria.
    Two lower chambers called Ventricles.
  - Working of heart-
    Left side- (i) Left atrium relaxes & the Oxygenated blood enters it from the lungs through the pulmonary vein.
    (ii) Left atrium contracts & the blood enters the left ventricle through the valve.
    (iii) Left Ventricle contracts and the blood is pumped into the largest artery 'Aorta' and is carried to all parts of the body.

Right side- (i) Right atrium relaxes & the deoxygenated blood from the body enters it through superior and inferior Vena cava.
(ii) Right atrium contracts & the blood enters the right Ventricle through the valve.
(iii) Right Ventricle contracts and the blood is pumped into the Pulmonary artery and is carried to lungs.

- Valves- Unidirectional to prevent the backward flow of blood.
- Pulmonary vein is the only vein that carries Oxygenated blood.
- Aorta is the only artery that carries Deoxygenated blood.
- Double circulation in man- because the blood passes through the heart twice in one complete cycle of the circulation.
- Capillaries- (i) Form the connection between arteries & veins.
(ii) Walls are one cell thick only for easy exchange of blood.
- Platelets- Plug the leaks of arteries and veins by clotting the blood.
- Lymph- Extracellular fluid similar to plasma but colourless with lesser protein.
- Function of lymph- (i) Transportation of digested & absorbed fats from the small intestine.
(ii) Drains excess fluid from the intercellular spaces back in the blood.
- Higher animals- E.g., birds, mammals.
  (i) Oxygenated blood & Deoxygenated blood are completely separate for efficient Oxygen supply.
  (ii) This is to fulfil higher energy needs and to maintain body temperature (warm blooded animals).
- Amphibians & reptiles- have 3 chambered heat where little mixing of Oxygenated blood & Deoxygenated blood takes place. Therefore their body temperature varies with the temperature of the environment. (cold blooded animals)

- Transportation in plants-
  - Plants need less energy needs- because they do not move and therefore have a slow transport system
  - Transport of water-
    (i) Takes place by xylem tissue present in roots, stem, leaves and is therefore interconnected.
    (ii) Root cells take up ions from the soil, which creates a concentration difference between root and soil. Column of water therefore rises upwards.
  - In very tall plants- transpiration creates a suction pressure, which pulls the water upwards.
  - Importance of transpiration-
    (i) Helps in upward movement of water in plants.
    (ii) It regulates the temperature in plants.

  - Transport of food-
    (i) Takes place by phloem tissue.
    (ii) Movement of prepared food in plants is called translocation.

❖ Excretion- The biological process of removal of harmful metabolic wastes in living organisms.

❖ Excretion in human beings-
(Refer to figure 6.13 page no. 110 of N.C.E.R.T Text book)

- Organs of excretory system- (i) Kidneys (iii) Urinary bladder
  (ii) Ureters (iv) Urethra
- Kidneys-
  (i) Two in number
  (ii) Bean shaped
  (iii) Present in abdomen on either side of the backbone
  (iv) Basic unit is nephron.
  a. Glomerulus- Group of capillaries (cluster) present in Bowman's capsule to receive blood from renal artery and filters it.
  b. Bowman's capsule- Cup shaped structure, which contains glomerulus.
  c. Convoluted tubule- is long and reabsorbs vital nutrients like glucose, amino acids, salts, urea and water.

Note-Vital functions of kidneys- (a) Filtration & removal of Nitrogenous wastes
(b) Reabsorption of vital nutrients

- Ureters- Transport the urine formed in the kidneys to the urinary bladder.
- Urinary bladder- Muscular bag like structure to store urine.
- Urethra- Helps in removal of urine when the Urinary bladder is full.
- Artificial kidney- Principle: Dialysis

❖ Excretion in plants-

- Gaseous wastes- CO_2 in respiration & O_2 in photosynthesis are removed by the process of diffusion.
- Excess water- is removed by transpiration.
- Other wastes- (i) Stored in cellular vacuoles or in leaves, which fall off or as gums, resins, etc. in old xylem.
  (ii) Excreted in soil.

❖ Important diagrams-

1. Open & close stomata
2. Steps of nutrition in Amoeba
3. Alimentary canal of human beings/ Digestive system of human beings
4. Respiratory system of human beings
5. Structure of heart.
6. Excretory system of human beings
7. Structure of nephron

❖ Important activities-

1. To prove that chlorophyll is necessary for photosynthesis.
2. To prove that Carbon dioxide is necessary for photosynthesis.
3. To prove that light is necessary for photosynthesis.
4. To prove that product of fermentation is Carbon dioxide.
5. To prove that leaves lose water by transpiration.
6. To study the action of salivary amylase on starch.
7. To demonstrate that Carbon dioxide is present in exhaled air.
8. To demonstrate the process of transpiration in plants.

1. Why is diffusion insufficient to meet the oxygen requirements of multi-cellular organisms like humans?

Answer

Unlike the unicellular organisms, the multi-cellular organisms have complex body structures with specialized cells and tissues to perform various necessary functions of the body. Since these cells are not in direct contact with surrounding environment so, simple diffusion cannot meet the oxygen requirement of all these cells.

2. What criteria do we use to decide whether something is alive?

Answer

Any visible movement such as walking, breathing, or growing is generally used to decide whether something is alive or not. However, a living organism can also have movements, which are not visible to the naked eye. Therefore, the presence of life processes is a fundamental criterion that can be used to decide whether something is alive or not.

3. What are outside raw materials used for by an organism?

Answer

Various outside raw materials used by an organism are as follows:

→ Food as source of supplying energy and materials.

→ Oxygen for breakdown of food to obtain energy.

→ Water for proper digestion of food and other functions inside the body.

The raw materials required by an organism will vary depending on the complexity of the organism and its environment.

5. What is the role of the acid in our stomach?

Answer

Following are the roles of acid in our stomach: → The hydrochloric acid present in our stomach dissolves bits of food and creates an acidic medium. In this acidic medium, enzyme pepsinogen is converted to pepsin, which is a protein-digesting enzyme.

→ It also kills many bacteria and other microorganisms that enter alongwith the food.

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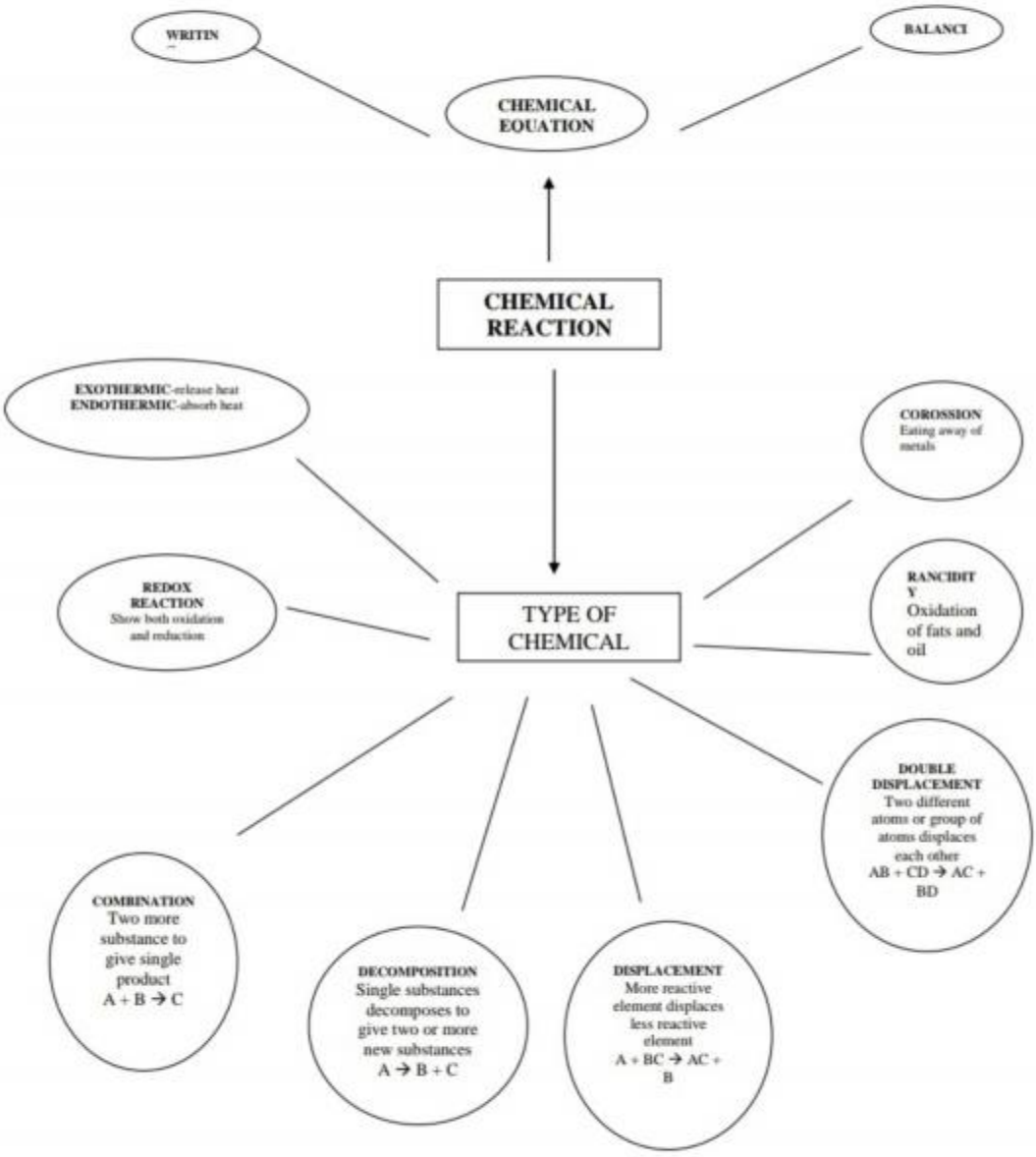
CHEMISTRY

CLASS : Xth

TOPIC : CHEMICAL REACTION AND EQUATION

MIND MAP


WRITIN
BALANCI
CHEMICAL EQUATION
CHEMICAL REACTION
EXOTHERMIC-release heat
ENDOTHERMIC-absorb heat
COROSSION
Eating away of metals
REDOX REACTION
Show both oxidation and reduction
TYPE OF CHEMICAL
RANCIDITY
Oxidation of fats and oil
DOUBLE DISPLACEMENT
Two different atoms or group of atoms displaces each other
AB + CD → AC + BD
COMBINATION
Two more substance to give single product
A + B → C
DECOMPOSITION
Single substances decomposes to give two or more new substances
A → B + C
DISPLACEMENT
More reactive element displaces less reactive element
A + BC → AC + B

➢ **Physical Change: Change in physical properties.**

– Melting

– Boiling

– Condensation

– [Note- No change occurs in the identity of the substance].

➢ **Chemical Change:**

– Atoms in the reactants are rearranged to form one or more different substances.

– Old bonds are broken, new bonds are formed.

– Reactants lose their properties to form product of different properties.

$4\ Fe(s) + 3O_2 \rightarrow 2Fe2O_3$ (rust). Iron Oxygen Ferric oxide

➢ **Chemical equation:**

The symbolic representation of a chemical reaction is called a
chemical equation.

Features of a chemical equation:

- The reactants are written on the left hand side with a plus sign between them.
- The products are written on the right hand side with a plus sign between them.
- An arrow separates the reactants from the products. The arrow head points towards the products and indicates the direction of the reaction.

Skeletal chemical equation: A chemical equation which simply represents the symbols and formulas of reactants and products taking part in the reaction is known as skeletal chemical equation for a reaction.

Definitions with examples :

1. Combination Reaction : Two or more reactant combine to form a single product.

$2\ Mg\ (s) + O_2\ (g) \rightarrow 2\ MgO$ Magnesium Oxygen

Magnesium oxide (White ash)

(basic) turns Red litmus blue

2. Decomposition Reaction: A single compound decomposes or break down to give two or moresimpler substances.

$2\ FeSO_4\ (s). \xrightarrow{\Delta}$ Fe2 $O_3\ (s) + SO_2\ (g) +$

$SO_3(g)$ Ferrous Sulphate Ferric oxide Sulphur

Sulphur (green) (brown) dioxide trioxide

QUESTION BANK

Very Short answer type questions :

1. What happens when magnesium ribbon burns in air?

Ans. When magnesium ribbon burns in air, it combines with the oxygen to form magnesium oxide. $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

2. Name the gas evolved when zinc reacts with dil. HCl.

Ans. Hydrogen gas is evolved.

5. Represent decomposition of ferrous sulphate with the help of balanced chemical equation.

Ans. $2FeSO_4(s) \rightarrow Fe2O_3(s) + SO_2(g) + SO_3(g)$

6. When carbon dioxide is passed through lime water, it turns milky, why?

Ans. Lime water (calcium hydroxide) combines with carbon dioxide to form a suspension
of calcium carbonate which makes lime water milky.

$Ca(OH)_2(aq) + CO_{2(g)} \rightarrow CaCO_3(s) + H_2O(l)$

7. A zinc rod is left for nearly 20 minutes in a copper sulphate solution. What change would you observe in zinc rod?

Ans. Zinc rod will change into zinc sulphate.

8. What type of reaction is this: $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$

Ans. It is a double displacement reaction.

9. Identify the compound oxidized in the following reaction. $H_2S\ (g) + Cl_2 \rightarrow S(s) + 2HCl\ (g)$

Ans. H_2S is oxidized.

10. What is rust?

Ans. Rust is mainly hydrated iron (III) oxide, $Fe_2O_3 \rightarrow xH_2O$.

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