

Delhi public School, Jammu

Assignment -I

Session(2019-20)

Subject: Science

Class: X

Physics

Topic: Light

- Image formed by plane mirror is;
(a) Virtual and inverted (b) virtual and erect (c) real and inverted (d) real and erect
- Image obtained on screen is;
(a) Virtual (b) both real and virtual (c) real (d) none of these
- Magnification in case of plane mirror is;
(a) $m = 1$ (b) $m > 1$ (c) $m < 1$ (d) $m = 2$
- What will be the angle of reflection if angle of incidence of incident ray on plane mirror is 90° ?
(a) 90° (b) 180° (c) 0° (d) 45°
- Relation between radius of curvature and focal length is;
(a) $R = f$ (b) $R = 2f$ (c) $R = \frac{f}{2}$ (d) $R = \frac{1}{f}$
- Relation between power of lens with its focal length is;
(a) $P = f$ (b) $P = 2f$ (c) $P = \frac{1}{f(m)}$ D (d) $P = \frac{f}{100cm} D$
- Define 1 dioptre and give relation between Power of lens and focal length.
- Why the magnification of convex mirror is always positive and less than 1?
- Find the power of convex lens, whose $R=32cm$?
- Give two uses for each (a) convex lens and (b) convex mirror?
- Why do we prefer convex mirror as driver's mirror?
- Define refractive index and give factors affecting it.
- The refractive index of water is $\frac{4}{3}$ for glass, it is $\frac{3}{2}$ with respect to air. What is the refractive index of glass with respect to water?
- (a) Give two conditions when there is no refraction?
(b) What is the significance of optical density?
- (a) Prove that $\frac{2}{1}n \times \frac{1}{2}n = 1$, where 1 represents medium 1st and 2 represents medium 2nd.
(b) A concave lens has focal length of 15cm. At what distance from the lens should the object be placed so that image is formed at 10cm from the lens? Also find the magnification of the lens?

Chemistry

Topic : Chemical reactions and Equations:-

- Which information is not conveyed by a balanced chemical equation?
(a) Physical states of reactants and products
(b) Symbols and formulae of all the substances involved in a particular reaction
(c) Number of atoms/molecules of the reactants and products formed
(d) Whether a particular reaction is actually feasible or not

2. Chemically rust is

- (a) hydrated ferrous oxide
- (b) only ferric oxide
- (c) hydrated ferric oxide
- (d) none of these

3. In the decomposition of lead (II) nitrate to give lead (II) oxide, nitrogen dioxide and oxygen gas, the coefficient of nitrogen dioxide (in the balanced equation) is

- (a) 1
- (b) 2
- (c) 3
- (d) 4

4. Fatty foods become rancid due to the process of

- (a) oxidation
- (b) corrosion
- (c) reduction
- (d) hydrogenation

5. What is the difference between Displacement and Double displacement reactions? Write equations for these reactions.

6. Give one example each of:-

- a) Thermal decomposition reaction
- b) Electrolytic decomposition reaction
- c) Photo decomposition reaction

7. Name the substance oxidised and reduced in the following reactions:-

- a) $\text{Zn} + \text{H}_2\text{SO}_4 \longrightarrow \text{ZnSO}_4 + \text{H}_2$
- b) $2\text{Na} + \text{Cl}_2 \longrightarrow 2\text{NaCl}$
- c) $2\text{H}_2\text{S} + \text{SO}_2 \xrightarrow{\text{heat}} 3\text{S} + 2\text{H}_2\text{O}$

8. Balance the following reactions:-

- a) $\text{PCl}_5 + \text{H}_2\text{O} \longrightarrow \text{H}_3\text{PO}_4 + \text{HCl}$
- b) $\text{CO}_2 + \text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{h\nu} \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$

9. A substance 'X' is used as a building material and is insoluble in water. When reacted with dilute HCl, it produces a gas which turns lime water milky. Predict the substance. Write the chemical equations involved.

10. A green coloured hydrated metallic salt on heating loses its water of crystallisation molecules and gives a suffocating smell. Identify the salt and write the chemical equations.

11. State three ways to prevent the Rusting of Iron.

12. What is the difference between Rusting and Corrosion?

Biology

TOPIC: NUTRITION, DIGESTION AND RESPIRATION

Q1. Holozoic nutrition occurs in:

a) Amoeba b) Plasmodium c) Bacteria d) Round worm

Q2. The lungs are covered by two thin membranes called:

a) Ventilator b) alveoli
c) Thoracic Cavity d) Pleura

Q3. In Stomach, the hydrochloric acid creates an acidic medium which facilitates the action of enzyme:

a) Amylase b) lipase
c) Pepsin d) Cellulase

Q4. Life on earth depends on:

a) Carbon- based molecules
c) Nickel-based molecules

b) Iron-based molecules
d) Phosphorus based molecules

Q5. What happens to the rate of breathing during vigorous exercise and why?

Q6. List two differences between holozoic nutrition and saprophytic nutrition. Give two examples of each of these two types of nutrition.

Q7. Explain the statement “Bile does not contain any enzyme but is essential for digestion”

Q8. List the three events that occur during the process of photosynthesis. Explain the role of stomata in this process.

Q9. Draw a well labelled diagram of human alimentary canal and give functions of any three parts.
