

**KERALA PUBLIC SCHOOLS**

**ACADEMIC YEAR 2020-21**

**HOME ASSIGNMENT (20-07-2020 to 25-07-2020)**



CLASS	SUBJECT	CHAPTER	TOPIC	WEBLINK
X	PHYSICS	<p><b>Ch – 5 : Refraction through a lens.</b></p> <p><b>Topics:</b></p> <p><b>Characteristics and location of images for convex lens.</b></p>	<p>Q1) What are the three principal rays that are drawn to construct the ray diagram for the image formed by a lens? Draw diagram to support your answer.</p> <p>Q2) Distinguish between a real and a virtual image.</p> <p>Q3) A converging lens forms the image of an object placed in front of it, beyond 2F<sub>2</sub> of the lens.</p> <p>(a) Where is the object placed?</p> <p>(b) Draw a ray diagram to show the formation of image.</p> <p>(c) State its three characteristics of the image.</p> <p>Q4) A convex lens forms an image of an object equal to the size of the object.</p> <p>(a) Where is the object placed in front of the lens?</p> <p>(b) Draw a diagram to illustrate it.</p> <p>(c) State two more characteristics of the image.</p> <p>Q5) A lens forms an erect, magnified and virtual image of an object.</p> <p>(a) Name the kind of lens.</p> <p>(b) Where is the object placed in relation to the lens</p> <p>(c) Draw a ray diagram to show the formation of image.</p> <p>(d) Name the device which uses this principle.</p>	<p><a href="https://youtu.be/J2Y33Keypqs">https://youtu.be/J2Y33Keypqs</a></p>

	<p><b>Ch – 5 : Refraction through a lens.</b></p> <p><b>Topics:</b></p> <p><b>Characteristics and location of images for concave lens.</b></p>	<p>Q1) A lens always forms an image between the object and the lens.</p> <p>(a) name the lens.</p> <p>(b) Draw a ray diagram to shown the formation of such image.</p> <p>(c) state three characteristics of the image.</p> <p>Q2) Draw a ray diagram to show how a converging lens can form a real and enlarged image of an object.</p> <p>Q3) Draw a ray diagram to show how a converging lens is used as a magnifying glass to observe a small object. Mark on your diagram the foci of the lens and the position of the eye.</p> <p>Q4) Draw a ray diagram to show how a converging lens is can form an image of the sun. Hence give a reason for the term 'burning glass' for a converging lens used in this manner.</p> <p>Q5) A lens forms an inverted image of an object.</p> <p>(a) Name the kind of lens.</p> <p>(b) State the nature of the image whether real or virtual?</p> <p>Q6) A lens forms an upright and magnified image of an object.</p> <p>(a)Name the lens.</p> <p>(b)Draw a labelled ray diagram to show the image formation.</p> <p>Q7) (a)Name the lens which always forms an erect and virtual image.</p> <p>(b)State whether the image in part (a) is magnified or diminished</p> <p>Q8) Give two characteristics of the image formed by a concave lens.</p> <p>Q9) Give two characteristics of the virtual image formed by a convex lens.</p>	<p><a href="https://youtu.be/iQhu_9bS00Q">https://youtu.be/iQhu_9bS00Q</a></p>
<p><b>CHEMIST RY</b></p>	<p><b>HYDROCH LORIC ACID</b></p>	<p><b>Question 1</b></p> <p>Solution A reacts with an acid B (which gives greenish yellow gas on reacting with oxidizing agents like Pb3O4) to give white precipitate C insoluble in nitric acid but soluble in ammonium hydroxide. Name A, B and C.</p>	

**Question 2**

Explain why:

- (a) Anhydrous HCl is a poor conductor while aq. HCl is an excellent conductor.
- (b) When the stopper of a bottle full of hydrogen chloride gas is opened there are fumes in the air.
- (c) A solution of hydrogen chloride in water turns blue litmus red and conducts electricity, while a solution of the same gas in toluene:
  - (i) Has no effect on litmus, and
  - (ii) Does not conduct electricity
- (d) Thick white fumes are formed when a glass rod dipped in  $\text{NH}_4\text{OH}$  is brought near the mouth of a bottle full of HCl gas.
- (e) Dry hydrogen chloride gas does not affect a dry strip of blue litmus paper but it turns red in the presence of a drop of water.
- (f) Hydrogen chloride gas is not collected over water.

**Question 3**

Name

- (a) A black metallic oxide which reacts with hydrochloric acid to give a coloured solution.
- (b) Two colourless gases, which when mixed produce a white solid.
- (c) Two gases which chemically combine to form a liquid.
- (d) A chloride which is soluble in excess of ammonium hydroxide.
- (e) The chemical in which gold can be dissolved.
- (f) The experiment which demonstrates that hydrogen chloride is soluble in water.
- (g) The gas produced when chlorine water is exposed to sunlight.

**Question 4**

Complete and balance the following reactions, state whether dilute or conc. acid is used.

- (a)  $\text{NH}_4\text{OH} + \text{HCl}$
- (b)  $\text{NaHSO}_3 + \text{HCl}$
- (c)  $\text{Pb}(\text{NO}_3)_2 + \text{HCl}$
- (d)  $\text{Pb}_3\text{O}_4 + \text{HCl}$

**Question 5**

How will the action of dilute hydrochloric acid enable you to distinguish between the following:

- a. Sodium carbonate and sodium sulphite
- b. Sodium thiosulphate and sodium sulphite.

**Question 6**

Give three distinct tests (apart from using an indicator) you would carry out with solution of HCl to illustrate the typical properties of an acid.

**Question 7**

$\text{MnO}_2$ ,  $\text{PbO}_2$  and red lead react with conc. HCl acid liberates  $\text{Cl}_2$ .

What is the common property being shown by these metal oxides?

**Question 8**

Convert two soluble metallic nitrates to insoluble metallic chlorides using dil. HCl

Rakshmi