

**ST.THOMAS SCHOOL INDIRAPURAM**

**CLASS X CHEMISTRY HOLIDAY HOMEWORK**

1. Write the following experiments in your Activity file.

Expt No.1. Finding the  $P^H$  of the given sample using  $P^H$  paper/Universal indicator

- (a) Dilute Hydrochloric Acid
- (b) Dilute NaOH solution
- (c) Dilute Ethanoic Acid solution
- (d) Lemon juice
- (e) Water
- (f) Dilute Sodium Hydrogen Carbonate Solution

Studying the properties of acids and bases(HCl&NaOH) on the basis of their reaction with

- (a) Litmus solution(Blue/Red)
- (b) Zinc metal
- (c) Sodium carbonate

Expt No.2. Performing and observing the following reactions and classify them into

- (a) Combination reaction (b) Decomposition reaction
- (c) Displacement reaction (d) Double displacement reaction
- (i) Action of water on quick lime
- (ii) Action of heat on ferrous sulphate crystals
- (iii) Iron nails kept in copper sulphate solution
- (iv) Reaction between sodium sulphate and barium chloride solutions

2. Do Investigatory project making litmus paper by using available material in your home.(e.g. Turmeric powder, Rose petals, Hibiscus flower).

ST. THOMAS SCHOOL INDIRAPURAM  
PHYSICS HOLIDAY HOMEWORK  
CLASS 10

1. An object 5.0 cm in length is placed at a distance of 10 cm from a convex mirror of radius of curvature 150 cm. Find the position, nature and size of the image.

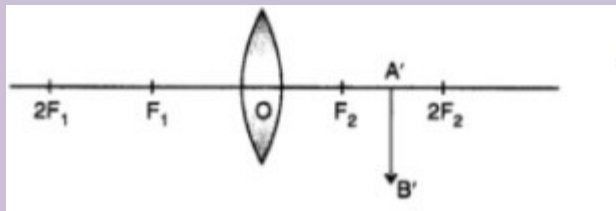
2. Find the position, nature and size of image of an object 4 cm high placed at a distance of 10 cm from a concave mirror of focal length 20 cm.

3. An object is placed at a distance of 25 cm from the pole of a spherical mirror which forms a real, inverted image on the same side of object at 37.5 cm from the pole. Calculate the focal length of mirror and find nature of the mirror.

4. A convex lens has a focal length of 30 cm. Calculate at what distance should the object be placed from the lens so that it forms an image at 60 cm on the other side of the lens. Find the magnification produced by the lens in this case.

5. Light enters from air into glass plate which has a refractive index of 1.5. Calculate the speed of light in glass. (Given, speed of light in vacuum is  $3 \times 10^8$  m/s)

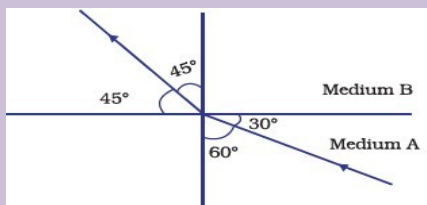
6. An incomplete ray diagram is shown below where the image A'B' for an object AB (placed somewhere in front of lens) is formed after refraction through the convex lens



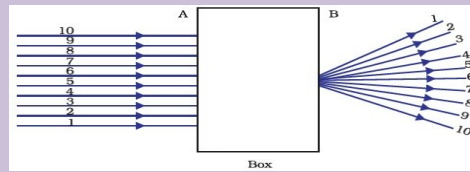
Observe the above diagram and use the given information to fill the following blanks

- The object AB would have been placed at \_\_\_\_\_.
- Size of the object would have been \_\_\_\_\_ than the size of image.

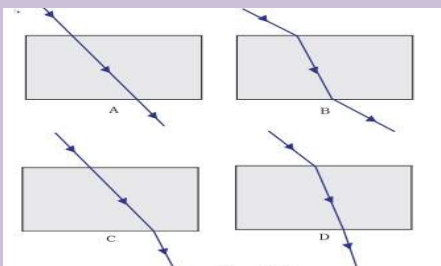
7. Below figure shows a ray of light as it travels from medium A to medium B. What is the refractive index of the medium B with respect to medium A.



8. A beam of light is incident through the holes on side A and emerges out of the holes on the other face of the box as shown in the figure. Name the lens present in the box.



9. The path of a ray of light coming from air passing through a rectangular glass slab traced by four students are shown as A, B, C, D. Which of them is correct? Justify your answer.



10. A concave lens of focal length 15 cm forms an image of 10 cm from the lens. How far is object from the lens? What are its characteristics?

## SUMMER HOLIDAY HOMEWORK

### CLASS X BIOLOGY

*Click the following links and watch the video:*

- <https://youtu.be/EIWuSapm3Ts>
- <https://youtu.be/RMBYjFU7pp4>

- *Now, try to answer the following questions based on the understanding from the above videos.*

➤ *Activity no 1: To demonstrate that chlorophyll is essential for photosynthesis.*

*Q.1\_\_ Why is the potted plant kept in dark room for 3-4 days before starting the experiment?*

*Q.2\_\_ What is the need to put the leaf in boiling alcohol?*

*Q.3\_\_ Which colour is observed when the leaf is dipped in iodine solution and why?*

*Q.4\_\_ In which part of plant leaf is chlorophyll present?*

*Q.5\_\_ Why is a colour change seen only in the green patches of the leaf?*

➤ *Activity no 2. To demonstrate that saliva contains an enzyme that acts on starch and digests it.*

*Q.1\_\_ Name the enzyme present in saliva.*

*Q.2\_\_ Which gland secretes saliva?*

*Q.3\_\_ Explain the action of saliva on food.*

*Q.4\_\_ Name the enzyme which acts on the food components after it passes from mouth to stomach.*

*Q.5\_\_ Why does the colour change only in test tube B in the above shown activity.*