

**GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ**

**HOLIDAY HOME WORK**

**SESSION: 2024-25**

**CLASS X**

**SUBJECT: ENGLISH LANGUAGE**

**LETTER WRITING**

Write a letter to your friend, informing her about your intended short visit to her place and what you propose to do there.

**NOTICE WRITING**

Your school is organizing an Inter-school Poetry Competition on the occasion of Independence Day. Write a notice to be put up in your school asking the students of Classes IX and X to submit their names for the Competition.

**INSTRUCTIONS:**

THE ENGLISH LANGUAGE HOLIDAY HOME WORK HAS TO BE DONE IN THE LANGUAGE CLASS  
WORK REGISTER

**GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ**

**HOLIDAY HOME-WORK**

**SESSION: 2024-25**

**CLASS X**

**ENGLISH LITERATURE ASSIGNMENT**

**ASSIGNMENT 1**

Write the paraphrase of the poem, 'Haunted Houses' by H.W. Longfellow. What is the common perception about ghosts? Do you agree with the poet's portrayal of the spirits and their ways around our houses in the poem?

**ASSIGNMENT 2**

Write the summary of Stephen Leacock's short story 'With the Photographer'. How did the photographer make a mess of the photograph taken by him? Two human feelings of 'emotion' and 'dignity' are mentioned in the story. Do you think that anything has happened to the narrator to be sentimental about them in the story?

**INSTRUCTIONS:**

THE ENGLISH LITERATURE ASSIGNMENT HAS TO BE DONE IN LITERATURE CLASS WORK REGISTER. THE WORD LIMIT FOR EACH ASSIGNMENT IS 750 WORDS.

**GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ**

**SESSION – 2024-2025**

**CLASS - X<sup>th</sup>**

**SUBJECT - HINDI**

**हिन्दी परियोजना कार्य (HINDI ASSIGNMENT)**

**नोट** - अभिभावकों से अपेक्षा की जाती है कि वे यह सुनिश्चित करें कि छात्रा प्रपत्र में दिए गए निर्देशानुसार ही हिन्दी परियोजना कार्य पूर्ण करे।

1. आभार

2. विषय सूची (Index)

क्रम संख्या । पृष्ठ संख्या । विषय वस्तु । दिनांक । हस्ताक्षर

3. विषय वस्तु

**प्रश्न1.** वैज्ञानिक ए० पी० जे० अब्दुल कलाम का परिचय देते हुए उनके कार्यक्षेत्र का सचित्र वर्णन लगभग 8-10 पेज में कीजिए ।

(i) प्रस्तावना (ii) जीवन परिचय (iii) शिक्षा (iv) वैज्ञानिक दृष्टिकोण

(v) विज्ञान के क्षेत्र में किये गये कार्यों का विवरण एवं उपलब्धियाँ

(vi) परमाणु से सम्बन्धित कार्यों का सचित्र विवरण (vii) निष्कर्ष

**प्रश्न2.** अपने प्रयागराज में कुम्भ मेले का आँखों देखा सचित्र वर्णन 400 से 450 शब्दों में कीजिए ।

4. संदर्भित ग्रंथ

5. निष्कर्ष

**नोट** - 1. अधिन्यास से संबंधित कार्य को पूर्ण करने हेतु छात्रा के लिए विज्ञान की प्रयोगात्मक कॉपी (Loose paper of Science Practical File) के पेजों का उपयोग करना अनिवार्य है।

2. कृपया फ़ाइल पर सफ़ेद रंग का कवर चढ़ा कर उस पर अपना नाम, कक्षा /वर्ग एवं रोल नंबर अवश्य लिखें। यू.आई.डी. संख्या लिखने के लिए फ़ाइल के दाहिनी ओर ढाई इंच चौड़ी और एक इंच लम्बी चिट लगानी अनिवार्य है।

**END**

# GIRLS' HIGH SCHOOL & COLLEGE

SESSION:2024-2025

CLASS: X

SUBJECT: MATHEMATICS

PROJECT

**INSTRUCTIONS** : Project must include atleast 20 pages. It should be made on inter-leaf sheets. Paste the pictures and the logo of the bank.

**NOTE** : For the specific question students need to check the website. Contents of the project must include the following topics

**Acknowledgement**

**Index**

## 1. Topic – Banking

- (a) Introduction/ History of Banking
- (b) Types of Bank Account (write at least 4 types and describe it also)
- (c) Types of cheques. (Paste the picture of cheque.)
- (d) Survey on the different rate of interest offer on different account by four banks. Take two private banks and two government banks.

PRIVATE BANKS : example HDFC

GOVERNMENT BANKS: example SBI

HDFC BANK:

ACCOUNT	RATE OF INTEREST
Saving bank A/C	6%
Current bank A/C	0.0%

HDFC BANK	
Write few lines about this	

Paste a logo

( e) Conclusion –You have to compare which bank pays better rate of Interest.

**2. TOPIC:** Use flat cutouts to form a cylinder and cone. Obtain formulae for volume and total surface area.

Also, use the flat cutouts to find the cross sectional area and volume of the figures formed when divided equally in two halves-

(i) Horizontally

(ii) Vertically

**3. TOPIC:** Draw an Ogive for the following frequency distribution by less than method and also find its median from the graph:

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Number of Students	7	10	23	51	6	3

**Bibliography.**

**THE END**

**GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ**

**CLASS: X**

**PROJECT WORK**

**SUBJECT: HISTORY/CIVICS**

**SESSION: 2024-2025**

Title Page: United Nations and its Specialized Agencies

Acknowledgement

Contents

1st & 2nd Page: Introduction

3rd & 4th Page: Composition

(a) Membership

(b) Headquarters

(c) Flag

(d) Official Languages

(e) Finance

5th Page: Objectives

6th&7th Page: Principal Organs of the United Nations

1. General Assembly

(a) Composition

(b) Powers & Functions

8th&9th Page: 2. Security Council

(a) Composition

(b) Powers & Functions

10th& 11th Page: 3. International Court of Justice

(a) Composition

(b) Powers & Functions

12th&13th Page: Major Agencies of the UN

UNICEF - (a) Objectives

(b) Functions

14th & 15th Page: WHO - (a) Objectives

(b) Functions

16th – 18th Page: UNESCO- (a) Objectives

(b) Functions

\* Educational Advancement

\* Development of Science & Technology

\* Cultural Interchange & Preservation of Cultural Heritage

19th Page: Conclusion

20th Page: Bibliography

**NOTE:-** Paste coloured pictures on each page related to the topic (Interleaf pages). Headings and sub-headings to be written with black sketch pen, written work with blue or black pen, picture frames and page borders should be drawn neatly with black pen or sketch pen. Each picture is to be labeled properly.

Page limit- 20 pages.

File is to be covered with Brown paper.

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END

**Girls High School and College, Prayagraj**

**Session: 2024-2025**

**Class: X**

**Subject: Geography  
Project**

**Topic: WASTE MANAGEMENT**

**Sub Headings:**

- Acknowledgement
- Index
- Definition of waste
- Classification of waste
- Sources of waste
- Impact of waste accumulation
- What is Waste Management
- Need for management of waste
- Problems related to waste management
- Role of Government, Society and individual in waste management
- Conclusion
- Bibliography.

**END**

**HOLIDAY HOMEWORK**  
**SESSION:- 2024-25**  
**CLASS X**  
**SUBJECT : PHYSICS PRACTICAL**

**Instructions:**

1. The student have to write all experiments in Physics Practical Note-Book.
2. Each experiment should start from a new page.
3. Well labelled diagrams to be drawn on the left page only.

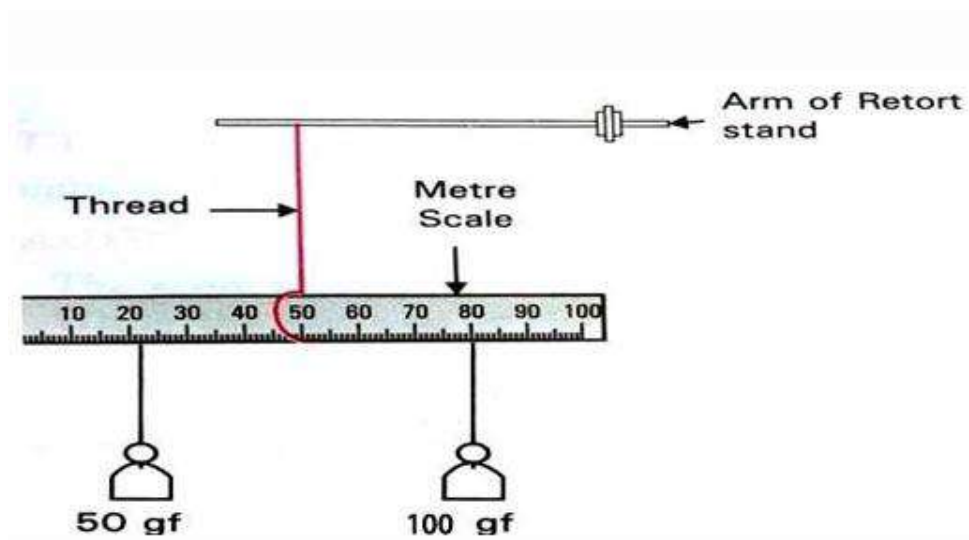
**EXPERIMENT No.1**

**AIM:** To verify the principle of moments.

**APPARATUS USED:** Metallic stand, metre ruler, weights and string.

**PRINCIPLE:** In equilibrium,

the sum of anticlockwise moments is equal to the sum of clockwise moments.



**OBSERVATIONS AND CALCULATIONS:**

Position of centre of gravity of the metre ruler G = ..... cm

Weight  $W_1 = 50$  gf

Weight  $W_2 = 100$  gf

Sl. No.	X (in cm from CG)	Y (in cm from CG)	$W_1 \times X$ (gf-cm)	$W_2 \times Y$ (gf-cm)
1				
2				
3				
4				

**RESULT:** Since  $W_1 \times X = W_2 \times Y$  (approximately equal), it verify the principle of moments.



**EXPERIMENT No.2**

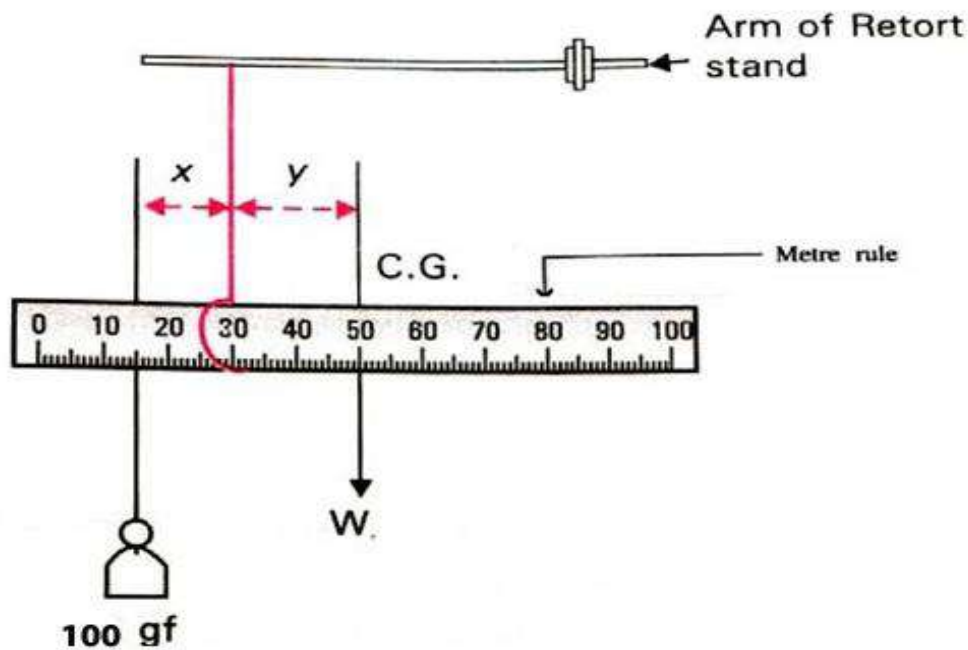
**AIM:** To determine the weight of the given metre ruler using principle of moments.

**APPARATUS USED:** Metre ruler, string, known weight, metallic stand.

**PRINCIPLE :** According to the principle of moments,

Under equilibrium condition,

the sum of all anticlockwise moments= the sum of of all clockwise moments.



**OBSERVATIONS AND CALCULATIONS:**

Least count of the metre ruler=0.1 cm

Position of centre of gravity of the metre ruler=..... cm

Known weight  $W_1=100$  gf

Sl.No.	Distance of weight from suspension =X(cm)	Distance of suspension from center of gravity=Y(cm)	$W=W_1*(X/Y)$ (gf)
1			
2			
3			
4			

Average weight of the metre ruler= .....

.....

.....

**RESULT:** The weight of the given metre ruler as determined from the experiment=.....gf.

**EXPERIMENT No.3**

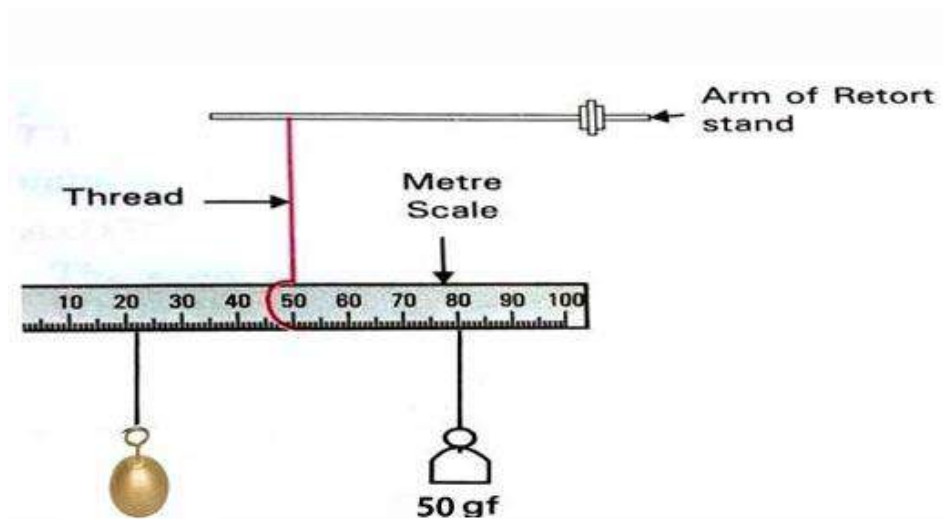
**AIM:** To determine the value of unknown weight of the body.

**APPARATUS USED:** Metre ruler, string, known weight, metallic stand and metallic bob.

**PRINCIPLE :** According to the principle of moments,

Under equilibrium condition,

the sum of all anticlockwise moments = the sum of all clockwise moments.



**OBSERVATIONS AND CALCULATIONS:**

Least count of the metre ruler = 0.1 cm

Known weight  $W_1 = 50$  gf

Position of centre of gravity of the metre ruler (CG) = ..... cm.

Sl.No.	X (in cm)	Y (in cm)	$W = W_1 \times \left(\frac{X}{Y}\right)$ gf
1			
2			
3			
4			

Mean Weight = .....

= .....

= .....

**RESULT:** The weight of given metallic bob = ..... gf

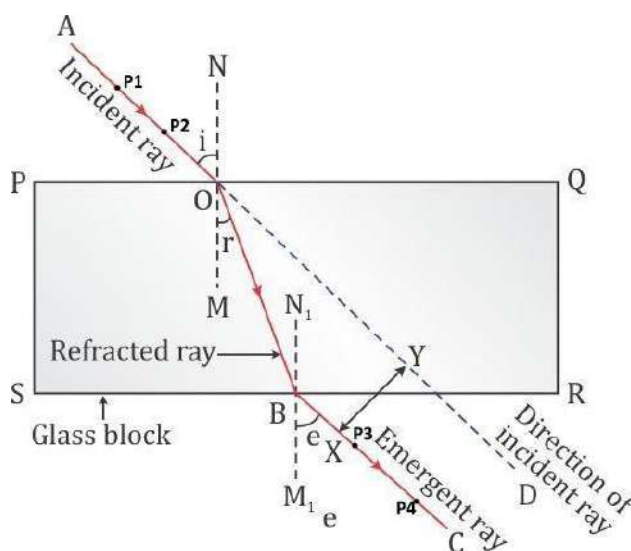
### EXPERIMENT No.4

**AIM:** To show that after refraction through a glass slab, the emergent ray is parallel to incident ray in a glass block.

**APPARATUS USED:** A glass block, a drawing board, a white sheet of paper, pencil, ruler, board pins, protractor and common pins.

**LAWS OF REFRACTION:**

- 1) The incident ray, the refracted ray and the normal at the point of incidence, all lie in the same plane.
- 2) The ratio of the sine of the angle of incidence  $i$  to the sine of the angle of refraction  $r$  is constant for the pair of given media.



**OBSERVATIONS AND CALCULATIONS:**

Sl.No.	Angle of incidence ray $i$ (in degrees)	Angle of emergent ray $e$ (in degrees)
1		
2		
3		
4		

**RESULT:** As observed from the observation sheet, the emergent ray makes the same angle with the glass block as made by the incident ray. This shows that emergent ray goes parallel to the incident ray.

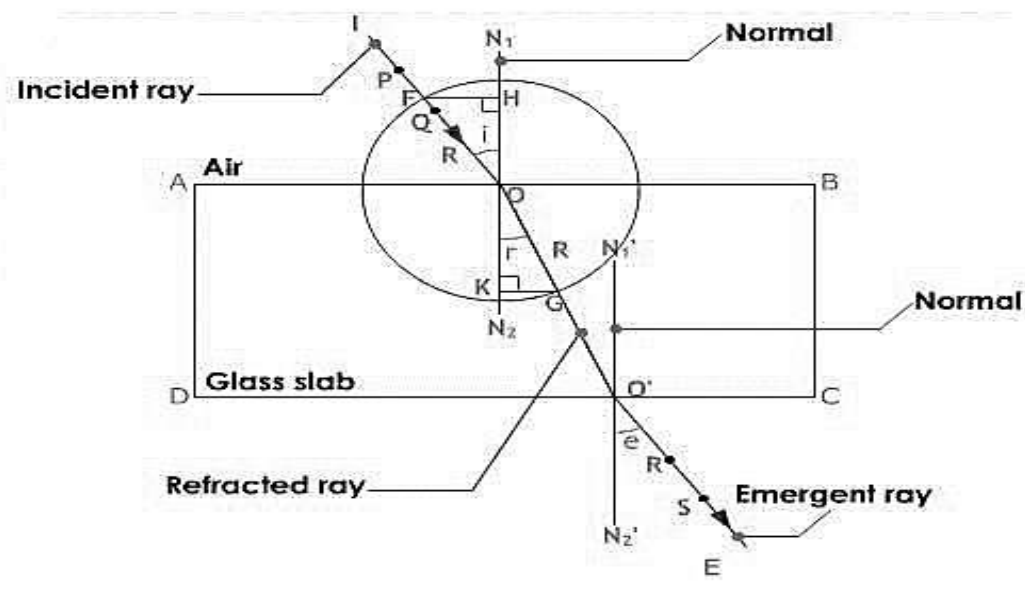
**EXPERIMENT NO.5**

**AIM:** To determine the refractive index of the material of the glass block.

**APPARATUS USED:** A drawing board, a glass block, drawing pins, common pins, a white sheet of paper, compass, protractor, pencil and ruler.

**LAW USED:** According to Snell's law, the ratio of the sine of the angle of incidence  $i$  to the sine of the angle of the refraction  $r$  is constant for the pair of given media.

Numerically, this constant ratio is equal to the refractive index of the second medium with respect to the first medium.



$$\begin{aligned} \text{Refractive index } (n) &= \sin i / \sin r \\ &= (FH/FO) / (KG/GO) \\ &= (FH/FO) / (KG/FO) \\ &= FH/KG \end{aligned}$$

**OBSERVATIONS AND CALCULATIONS:**

Sl.No.	Angle of incidence $i$ (in degrees)	FH (in cm)	KG (in cm)	Refractive index $(n)=FH/KG$
1				
2				
3				
4				

Mean refractive index = .....  
 = .....  
 = .....

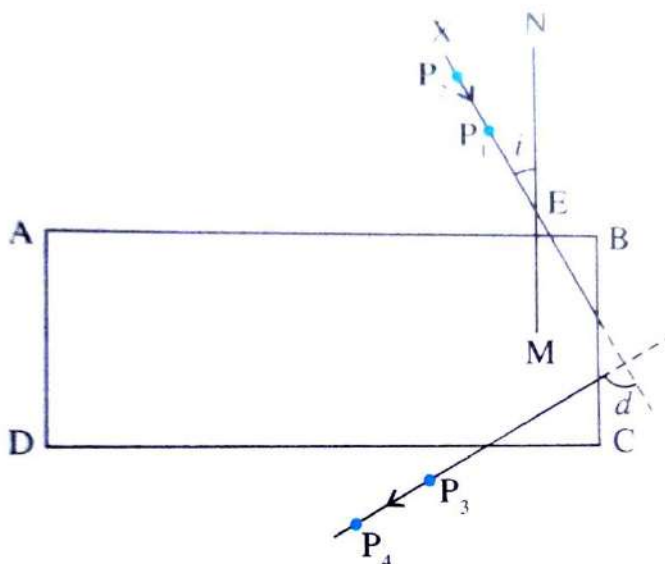
**RESULT:** The refractive index of a given glass block as obtained from the above experiment = .....

**EXPERIMENT NO.6**

**AIM:** To investigate the deviation of a ray of light after it suffers total internal reflection from one face of a glass block.

**APPARATUS USED:** A drawing board, a glass block, drawing pins, common pins, a white sheet of paper, protractor, pencil and ruler.

**LAW USED:** Total internal reflection is a phenomenon of reflection of ray of light back to the same medium when passing from denser medium to rarer medium in such away that angle of incidence is greater than its critical angle.



**OBSERVATIONS AND CALCULATIONS:**

Sl. No.	Angle of incidence $i$ (in degrees)	Angle of deviation $d$ (in degrees)
1.		
2.		
3.		
4.		

From graph -

.....  
 .....  
 .....  
 .....

**RESULT:**The value of  $S = \dots\dots\dots$

## EXPERIMENT NO.7

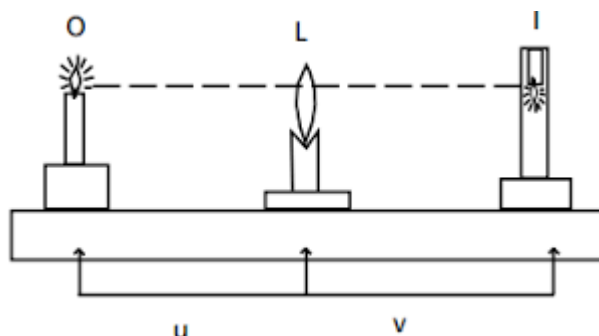
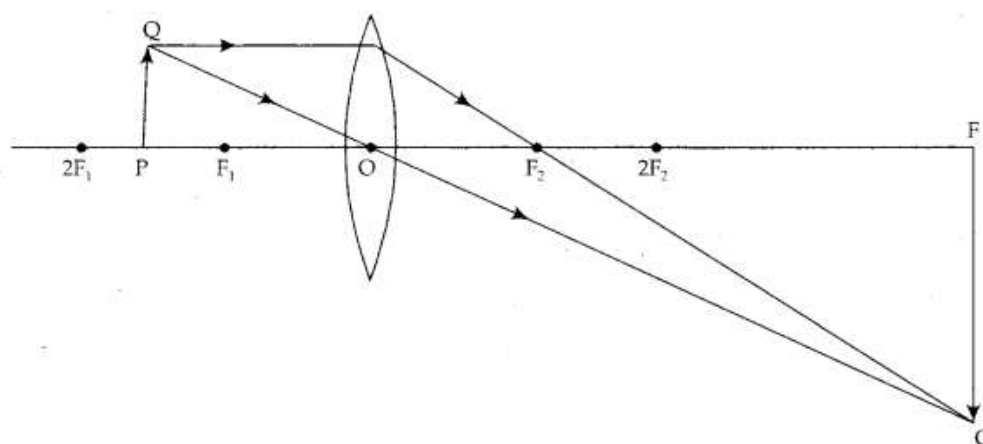
**AIM:** To determine the focal length of a given convex lens measuring u and v.

**APPARATUS USED:** A convex lens, a metre scale, lens holder, pin holder, a lighted candle, screen.

**PRINCIPLE :** When an object is placed in front of a convex lens beyond its focus its real and inverted image is formed on the other side of the lens.

If u is the object distance and v is the image distance then focal length f is given by

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



### OBSERVATIONS AND CALCULATIONS:

Sl. No.	Object Position (cm)	Lens Position (cm)	Screen Position (cm)	U (cm)	V (cm)	P=U + V (cm)	Q= UV (cm <sup>2</sup> )	F = Q/P (cm)
1.								
2.								
3.								
4.								

Mean focal length = .....

=.....

= .....

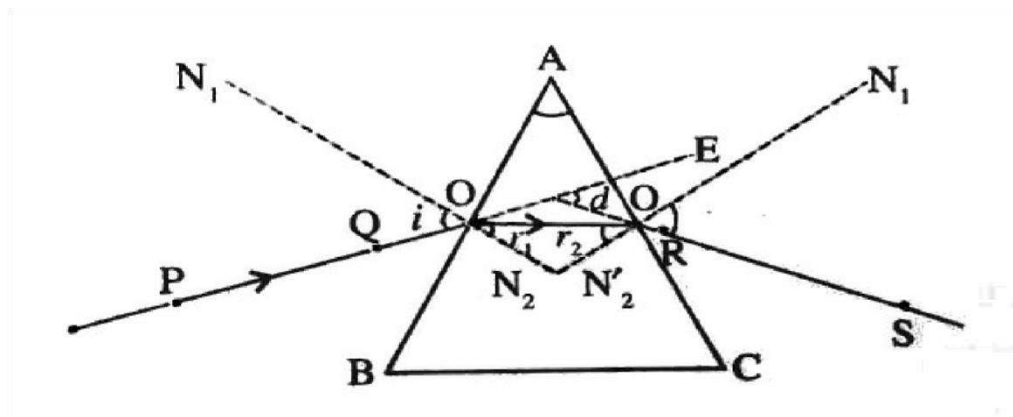
**RESULT:**The focal length of given convex length is  $F = \dots\dots\dots$  cm.

### EXPERIMENT NO.8

**AIM:** To determine the minimum deviation produced by the equilateral glass prism.

**APPARATUS USED:** A drawing board, a white sheet of paper, common pins, an equilateral prism, drawing pins, ruler, protractor and pencil.

**PRINCIPLE:** For a small angle of incidence, as the angle of incidence increases, the angle of deviation first decreases, reaches the minimum and then increases with the angle of incidence. The minimum value of angle of deviation reached is called the angle of minimum deviation.



**OBSERVATIONS AND CALCULATIONS:**

Sl. No.	Angle of incidence (in degrees)	Angle of deviation $\delta$ (in degrees)
1		
2		
3		
4		
5		
6		

**RESULT:** From graph, the angle of minimum deviation = .....



### EXPERIMENT NO.9

**AIM:** - To verify ohm’s law using simple electric circuit.

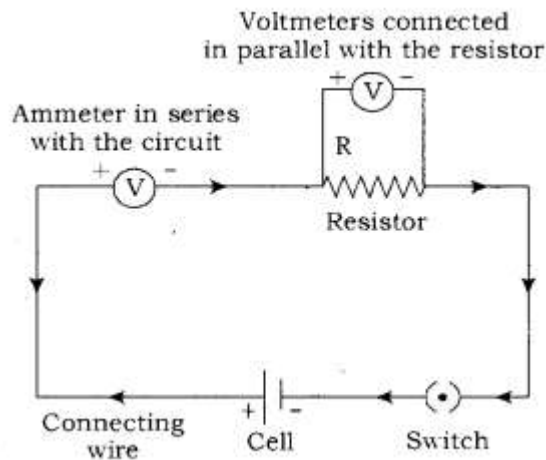
**APPARATUS REQUIRED:** - Coiled resistor of 2 ohm, ammeter 0 – 3.0 A, voltmeter 0 -3-0 V, rheostat, key, battery 2.0V and connecting wires.

**OHM’S LAW:** - According to Ohm’s law, the current flowing in a conductor is directly proportional to the potential difference applied across its ends provided that the physical conditions and the temperature of the conductor remain constant.

$$I \propto V$$

$$\frac{V}{I} = \text{Constant}$$

$$\frac{V}{I} = R$$



**OBSERVATIONS AND CALCULATIONS:**

Least count of the ammeter = **0.02 A**

Least count of the voltmeter = **0.05 V**

S. No.	Ammeter Reading I (in amp.)	Voltmeter Reading V (in volts)
1.		
2.		
3.		
4.		

**RESULT:** - Since V – I graph is a straight line which verifies Ohm’s law.

### EXPERIMENT NO.10

**AIM:** - To determine the resistance of given wire using Ohm's law.

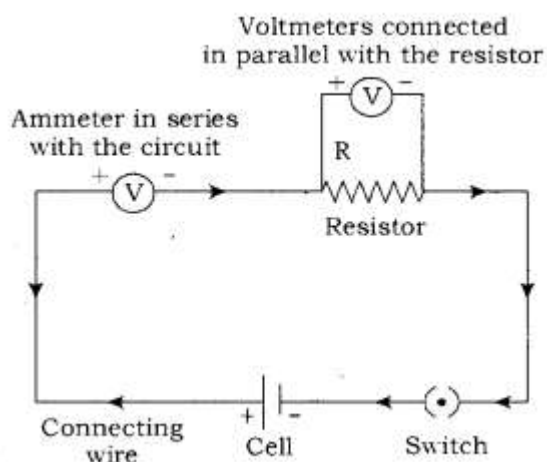
**APPARATUS REQUIRED:** -A resistance wire (R) ohm, ammeter 0 – 3.0 A, voltmeter 0 -3-0 V, rheostat, key, battery 2.0 V and connecting wires.

**OHM'S LAW:** - According to Ohm's law, the current flowing in a conductor is directly proportional to the potential difference applied across its ends provided that the physical conditions and the temperature of the conductor remain constant.

$$I \propto V$$

$$\frac{V}{I} = \text{Constant}$$

$$\frac{V}{I} = R$$



**OBSERVATIONS AND CALCULATIONS:**

Least count of the ammeter = **0.02 A**

Least count of the voltmeter = **0.05 V**

S. No.	Ammeter Reading I (in amp.)	Voltmeter Reading V (in volts)	Resistance $R = \frac{V}{I} \Omega$
1.			
2.			
3.			
4.			

Mean resistance = .....  
 = .....  
 = .....

Slope of graph =  $\Delta V / \Delta I$   
 = .....

**RESULT:** - The resistance of given wire is .....  $\Omega$

**END**

# GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

## HOLIDAY HOMEWORK

SESSION: 2024-25

CLASS : X

### SUBJECT: CHEMISTRY

**Instructions:** Students are advised to write the following chemistry practicals (Exp. No. 1 to 12) in Chemistry practical file. These experiments are to be written neatly. The same pattern of writing is to be followed as given. Every experiment has to be started from a fresh page.

#### EXPERIMENT NO. 1

##### (A)

Take a little amount of the substance in a clean dry hard glass test tube and add a small quantity of conc.  $\text{H}_2\text{SO}_4$  in it and heat it gently. Make your observations, identify the gas evolved and give your deduction.

(1) **Observations:**

- (i) A colourless, pungent and suffocating gas is evolved.
- (ii) The gas turns moist blue litmus paper red.

(2) **Confirmatory test for the gas:**

When a glass rod dipped in  $\text{NH}_4\text{OH}$  solution is brought near the evolved gas, it gives dense white fumes. Thus, the gas evolved is  $\text{HCl}$ .

(3) **Name of an anion:**  $\text{Cl}^-$  (chloride ion)

(4) **Deduction:** The given salt is chloride salt.

##### (B)

Add a small quantity of conc.  $\text{H}_2\text{SO}_4$  and manganese dioxide ( $\text{MnO}_2$ ) to the given substance and heat it gently. Make your observation, identify the gas evolved and give your deduction.

(1) **Observations:**

- (i) A gas of choking odour is evolved.
- (ii) A greenish yellow coloured gas is evolved.
- (iii) The gas evolved turns moist blue litmus paper red and finally bleaches it.
- (iv) It turns starch iodide paper blue-black.

(2) **Confirmatory test for the gas:**

Add silver nitrate solution to the water extract of the given substance. White precipitate appears which dissolves in excess  $\text{NH}_4\text{OH}$  solution. Thus, the gas evolved is chlorine.

(3) **Name of an anion:**  $\text{Cl}^-$  (chloride ion)

(4) **Deduction:** The given salt is chloride salt.

#### EXPERIMENT NO. 2

##### (A)

Take a small amount of the substance in a clean hard glass test tube and add small amount of  $\text{NaOH}$  in it. Warm the mixture gently, record your observations, identify the gas evolved and give your deduction.

**(1) Observations:**

- (i) The evolved gas is colourless.
- (ii) The evolved gas has pungent smell.
- (iii) The evolved gas turns moist red litmus paper blue, hence it is basic in nature.

**(2) Confirmatory test for the gas:**

When glass rod dipped in HCl solution is brought near the evolved gas, dense white fumes appear. Evolved gas turns Nessler's reagent brown. Thus, the gas evolved is ammonia (NH<sub>3</sub>).

**(3) Name of the cation:** NH<sub>4</sub><sup>+</sup>

**(4) Deduction:** The given salt is ammonium salt.

**(B)**

Take a small amount of the substance in a clean dry hard glass test tube. Heat it first gently and then strongly. Make your observations, identify the gas evolved and give your deduction.

**(1) Observations:**

- (i) The gas evolved is colourless.
- (ii) It has a pungent smell.
- (iii) It turns red litmus blue.

**(2) Confirmatory test for the gas:**

It gives dense white fumes with a rod dipped in HCl solution. Thus, the gas evolved is ammonia (NH<sub>3</sub>).

**(3) Name of the cation:** NH<sub>4</sub><sup>+</sup>

**(4) Deduction:** The given salt is an ammonium salt.

**EXPERIMENT NO. 3**

**(A)**

Take a small amount of the substance in a clean, dry, hard glass test tube and heat it strongly. Make your observations, identify the gas evolved and give your deduction.

**(1) Observations:**

- (i) On strong heating, the light amorphous white solid, changes to pale yellow.
- (ii) Gives off a colourless and odourless gas that turns lime water milky. The milkiness disappears on passing excess of gas.
- (iii) The gas has no effect on acidified K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> or acidified KMnO<sub>4</sub>.
- (iv) The residue, on cooling, changes to a white colour i.e. residue is yellow when hot and white when cold.

**(2) Identification of the gas evolved:**

Since the gas turns limewater milky, but has no effect on acidified K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> or acidified KMnO<sub>4</sub>, therefore the gas evolved is carbon dioxide (CO<sub>2</sub>).

**(3) Name of the anion:** Carbonate ion (CO<sub>3</sub><sup>2-</sup>)

**(4) Deduction:** The residue obtained is zinc oxide. The given substance is zinc carbonate.

**(B)**

Take a little portion of the substance in a clean hard glass test tube. Add dilute HCl in it. Make your observations, identify the gas evolved, name the anion and give your deduction.

**(1) Observations :**

- (i) On adding dil. HCl to the given substance, a gas is evolved with brisk effervescence.
- (ii) The gas turns blue litmus paper red.
- (iii) The gas turns limewater milky, but has no effect on acidified  $K_2Cr_2O_7$ .

**(2) Identification of the gas evolved:**

Since the gas turns limewater milky, but has no effect on acidified  $K_2Cr_2O_7$ , therefore it is  $CO_2$  gas and negative radical is  $CO_3^{2-}$

**(3) Name of the anion:** carbonate ion ( $CO_3^{2-}$ )

**(4) Deduction:** The given substance is a carbonate salt.

**(C)**

You are given a solution. To the little portion of this solution, add NaOH solution drop by drop and then in excess. Make your observations, name the cation and give your deduction.

**(1) Observation :** On adding NaOH solution drop by drop, white gelatinous precipitate is formed. The white precipitate is dissolved in excess of NaOH giving a clear solution.

**(2) Name of the cation :** Zinc ion ( $Zn^{2+}$ )

**(3) Deduction :** The white precipitate is of  $Zn(OH)_2$ . The white precipitate dissolves in excess of NaOH due to the formation of  $Na_2ZnO_2$ .  $Zn(OH)_2$  dissolves in excess of NaOH because it is amphoteric in nature.

**(D)**

Take a small amount of the given solution and add  $NH_4OH$  solution drop by drop and then in excess. Make your observations, name the cation and give your deduction.

**(1) Observation:** On adding  $NH_4OH$  solution drop by drop, white gelatinous precipitate is formed which dissolves in excess of  $NH_4OH$  solution.

**(2) Name of the cation:** zinc ion ( $Zn^{2+}$ )

**(3) Deduction:** The white precipitate is of zinc hydroxide. It dissolves in excess of  $NH_4OH$  due to the formation of tetraamminezinc(II)sulphate.

**EXPERIMENT NO. 4**

**(A)**

Take a small amount of the substance in a clean dry glass test tube, heat it first gently and then strongly. Make your observations, identify the gas evolved and give your deduction.

**(1) Observations:**

- (i) On heating the given substance, a hissing sound is produced and droplets of a colourless liquid condense on the upper cooler parts of the test tube.
- (ii) On heating it strongly, a white residue is left behind.
- (iii) On very strong heating, the white residue changes to a black residue and a colourless pungent smelling gas is evolved.
- (iv) The gas turns moist blue litmus red.

**(2) Identification of the gas evolved:**

(i) The colourless liquid turns cobalt chloride paper pink. Hence there is water of crystallization.

(ii) The pungent smelling gas turns acidified  $K_2Cr_2O_7$  paper green, hence it is  $SO_2$

**(3) Deduction:**

(i) It is a hydrated salt and the gas evolved is sulphur dioxide.

- (ii) The white residue formed on heating is of anhydrous copper sulphate.
- (iii) On very strong heating the substance gives black residue which is of copper(II)oxide.

**(B)**

Prepare a solution of the given substance in water and perform the following experiments with different portions of the solution.

**(B-1)**

To the first portion of the solution, add NaOH solution drop by drop and then in excess. Record your observation, name the cation and give your deduction.

**(1) Observation:**

- (i) On adding NaOH, a blue precipitate is obtained.
- (ii) The blue precipitate is insoluble in excess of NaOH.

**(2) Name of the cation:** copper ( $\text{Cu}^{2+}$ )

- (3) Deduction:** The blue precipitate obtained is of copper hydroxide. On heating the blue precipitate a black precipitate is obtained which is of copper(II)oxide ( $\text{CuO}$ ).

**(B-2)**

To the second portion of the solution add  $\text{NH}_4\text{OH}$  solution drop by drop and then in excess. Record your observations and give your deduction.

**(1) Observations:**

- (i) On adding  $\text{NH}_4\text{OH}$  drop by drop, a bluish white precipitate is obtained which dissolves in excess  $\text{NH}_4\text{OH}$  forming deep blue colour (Prussian blue).

**(2) Deduction:**

- (i) The bluish white precipitate is of copper hydroxide.
- (ii) Deep blue colour of the solution is obtained on adding excess  $\text{NH}_4\text{OH}$  due to the formation of tetraamminecopper(II)sulphate.

**(B-3)**

To the third portion of the solution, add a few drops of dilute HCl and then add barium chloride solution ( $\text{BaCl}_2$ ). Make your observation, name the anion and give your deduction.

**(1) Observation:**

- (i) On adding barium chloride, a thick white precipitate is obtained.
- (ii) Precipitate is insoluble in dil. HCl.

**(2) Name of the anion:** Sulphate ion ( $\text{SO}_4^{2-}$ )

- (3) Deduction:** The given substance is hydrated copper sulphate salt.

**EXPERIMENT No. 5**

**(A)**

Prepare the aqueous solution of the given substance, divide it into three parts and perform the following experiments.

**(A-1)**

To the first part of the solution add NaOH drop by drop and then in excess. Make your observations, name the cation and give your deduction.

**(1) Observation:**

- (i) The original solution is pale green in colour.
- (ii) On adding NaOH drop by drop, a dirty green precipitate is obtained.
- (iii) On adding excess NaOH, dirty green precipitate does not dissolve.

**(2) Name of the cation:** Ferrous ion ( $\text{Fe}^{2+}$ )

**(3) Deduction:**

- (i) Dirty green precipitate is obtained due to the formation of ferrous hydroxide.
- (ii) The given salt is a ferrous salt.

**(A-2)**

To the second part of the solution, add 4-5 drops of concentrated nitric acid and boil. Add NaOH to it. Make your observations, name the cation and give your deductions.

**(1) Observation:**

- (i) On boiling the original solution with concentrated nitric acid, it turns brownish yellow.
- (ii) On adding NaOH solution, reddish brown precipitate is formed.
- (iii) On adding excess NaOH, the precipitate does not dissolve.

**(2) Name of the cation:** Ferric ( $\text{Fe}^{3+}$ )

**(3) Deduction:** On boiling the solution with concentrated nitric acid, it becomes brownish yellow because ferrous is oxidized to ferric. On adding NaOH solution reddish brown precipitate is obtained due to the formation of ferric hydroxide.

**(A-3)**

To the third part of the solution, add a few drops of dil. HCl and barium chloride solution. Make your observations, name the anion and give your deduction.

**(1) Observation:**

- (i) On adding barium chloride, a thick white precipitate is obtained which is insoluble in dil. HCl

**(2) Name of the anion:** Sulphate ion ( $\text{SO}_4^{2-}$ )

**(3) Deduction:** The white precipitate is of barium sulphate and the salt provided was of ferrous sulphate.

**EXPERIMENT No. 6**

**(A)**

Take a small amount of the given salt in a clean test tube and add dil. HCl. Make your observations, identify the gas evolved, name the anion and give your deduction.

**(1) Observations:**

- (i) On adding dil. HCl to the given salt, a gas is evolved with brisk effervescence.
- (ii) The gas is colourless and odourless
- (iii) The gas turns blue litmus red, hence it is acidic in nature.
- (iv) The gas turns limewater milky but has no effect on acidified  $\text{K}_2\text{Cr}_2\text{O}_7$  solution.

**(2) Identification of the gas evolved:** The evolved gas is carbon dioxide.

**(3) Name of the anion:** Carbonate ion ( $\text{CO}_3^{2-}$ )

**(4) Deduction:** The given salt is a carbonate salt.

**(B)**

To a little portion of the solution obtained on adding dil. HCl to the given salt, add NaOH solution drop by drop and then in excess. Make your observations.

**(1) Observations:**

- (i) On adding NaOH solution drop by drop, a white precipitate is obtained.
- (ii) In excess of NaOH, the precipitate does not dissolve.

**(C)**

To a little portion of the solution obtained in (A) i.e. on adding dil. HCl to the given salt, add  $\text{NH}_4\text{OH}$  solution drop by drop and then in excess. Make your observations, name the cation and give your deduction.

**(1) Observation:** On adding  $\text{NH}_4\text{OH}$ , no precipitate is formed.

**(2) Name of the cation:** Calcium ion ( $\text{Ca}^{+2}$ )

**(3) Deduction:**

- (i) On adding NaOH to the salt solution, white precipitate of calcium hydroxide is formed, but there is no precipitate formed on adding  $\text{NH}_4\text{OH}$  solution.
- (ii) The given salt is calcium carbonate.

**EXPERIMENT No. 7**

**(A)**

Take a small amount of the substance in a clean dry hard glass test tube and heat it strongly. Record your observations, identify the gas evolved and give your deduction.

**(1) Observation:**

- (i) Heavy, white crystalline solid, on strong heating, crumbles with a crackling noise.
- (ii) It gives off a reddish brown gas, which turns moist blue litmus paper red.
- (iii) When a glowing wooden splinter is held in the reddish brown gas, it relights showing the presence of oxygen.
- (iv) The residue is reddish brown when hot. On cooling, it changes to yellow, partly fuses in glass, and stains it yellow.

**(2) Identification of the gas evolved:**

- (i) The gas is reddish brown in colour having an irritating odour.
- (ii) It turns moist blue litmus paper red.
- (iii) It turns starch iodide paper from colourless to blue-black.
- (iv) It turns green acidified ferrous sulphate solution brown.

Thus, the gas evolved is Nitrogen Dioxide ( $\text{NO}_2$ ).

**(B)**

Take a small amount of the salt in the test tube, add conc.  $\text{H}_2\text{SO}_4$  and warm gently. Make your observation, name the anion and give your deduction.

**(1) Observation:**

- (i) Reddish brown fumes evolve.
- (ii) The fumes become thick on adding copper turnings.

**(2) Identification of the gas evolved:** The gas evolved is nitrogen dioxide.

**(3) Confirmatory test of the anion:** To the aqueous solution of the salt, add freshly prepared ferrous sulphate solution, then cautiously pour a few drops of conc.  $\text{H}_2\text{SO}_4$



along the side of the test tube. A brown ring appears at the junction of the two liquids.  
The brown ring disappears on shaking.

**(4) Name of the anion:** Nitrate ion ( $\text{NO}_3^-$ )

**(5) Deduction:** The given substance is a nitrate salt

### (C)

To the salt solution, add NaOH solution drop by drop and then in excess, record your observation and give your deduction

**(1) Observation:**

- (i) On adding NaOH drop by drop a thick white precipitate is obtained
- (ii) On adding excess NaOH the white precipitate gets dissolved and a clear solution is obtained.

**(2) Deduction:** The thick white precipitate is of lead hydroxide. It dissolves in excess of NaOH due to the formation of sodium plumbite ( $\text{Na}_2\text{PbO}_2$ ).

### (D)

To the salt solution, add  $\text{NH}_4\text{OH}$  solution drop by drop and then in excess. Record your observation and give your deduction.

**(1) Observation:** On adding  $\text{NH}_4\text{OH}$  drop by drop, a white ppt. is obtained which remains insoluble in excess  $\text{NH}_4\text{OH}$ .

**(2) Deduction:**

- (i) The white ppt. is of lead hydroxide.
- (ii) The given salt is lead nitrate.

## EXPERIMENT No. 8

Take the salt in a clean, dry, hard test tube and heat it strongly. Make your observation and give deduction.

**(1) Observation:**

- (i) Bluish green crystalline solid, on heating, melts to form a bluish green mass and gives off steamy vapours that condense on the cooler parts of the test tube to form droplets of water.
- (ii) On further heating, the bluish green mass changes to a black residue, i.e. copper (II) oxide.
- (iii) It gives off a reddish brown gas.
- (iv) It also gives a gas that rekindles a glowing splinter, i.e. oxygen.

**(2) Deduction :**

- (i) The residue obtained is of copper (II) oxide.
- (ii) Gases evolved are Water vapour, nitrogen dioxide and oxygen.
- (iii) The given substance is copper (II) nitrate hexahydrate.

## Experiment No. 9

You are given a solution. Determine whether it is acidic or basic in nature by giving three tests.

**(1) Observation:**

- (i) When the solution is tested with red litmus paper, it remains unchanged and when it is tested with blue litmus paper, it is turned red.

(ii) When the given solution is tested with phenolphthalein solution, it remains colourless i.e. the colour of the phenolphthalein solution does not change.

(iii) It turns methyl orange solution (orange in colour) pink.

**(2) Deduction:** As the given solution turns blue litmus paper red, phenolphthalein solution remains unchanged and methyl orange solution is turned pink, it proves that the given solution is acidic in nature.

### Experiment No. 10

You are given a solution. Determine whether it is acidic or basic in nature by giving three tests.

**(1) Observation:**

(i) When the solution is tested with blue litmus paper, it remains unchanged and when it is tested with red litmus paper, it is turned blue.

(ii) When the given solution is tested with phenolphthalein solution, it turns pink.

(iii) It turns methyl orange solution (orange in colour) yellow.

**(2) Deduction:** As the given solution turns red litmus paper blue, phenolphthalein solution pink and methyl orange solution is turned yellow, it proves that the given solution is basic in nature.

### Experiment No. 11

Take the given substance in a clean, dry, hard test tube, add conc. HCl and warm it. Make your observation, identify the product and give deduction.

**(1) Observation:**

(i) The given substance is black in colour.

(ii) On adding conc. HCl to the given substance a greenish yellow gas having a sharp pungent choking odour evolves.

(iii) It turns a moist blue litmus paper red and finally bleaches.

(iv) It turns moist starch iodide paper blue black.

(v) When the gas is passed through silver nitrate solution, a white ppt. is formed.

**(2) Identification of the gas evolved:** The gas evolved is chlorine.

**(3) Deduction:**

(i) The given substance is manganese dioxide ( $MnO_2$ ).

(ii)  $MnO_2$  acts as an oxidizing agent and oxidizes conc. HCl into chlorine.

### Experiment No. 12

Take the given substance in a clean, dry, hard test tube and add conc. HCl. Make your observation, identify the product and give deduction.

**(1) Observation:**

(i) The given substance is black in colour.

(ii) On adding few drops of conc. HCl to the given substance, a blue coloured solution is obtained.

(iii) On adding ammonium hydroxide to the above solution the pale blue precipitate is formed, which is soluble in excess of  $NH_4OH$ , forming deep blue solution.

(iv) No gas evolves on adding conc. HCl.

**(2) Identification of the product formed:**

(i) A blue coloured solution formed on adding conc. HCl is of copper (II) chloride.

- (ii) On adding  $\text{NH}_4\text{OH}$  to this solution pale blue precipitate of copper hydroxide is formed.
- (iii) On adding excess  $\text{NH}_4\text{OH}$ , tetraamminecopper hydroxide is formed which is soluble and deep blue in colour.

**(3) Deduction:**

- (i) The given substance is copper (II) oxide.
- (ii) On adding hydrochloric acid to copper (II) oxide, neutralization reaction takes place.
- (iii) The products formed are copper (II) chloride and water.

END

# HOLIDAY HOME WORK

**CLASS: X**

**SUBJECT: BIOLOGY**

Instructions:

The following experiments to be written in Biology practical file.

All experiments are to be neatly written with a blue pen only however the students can use a black pen for headings.

## **EXPERIMENT No 1**

**Aim-**To study the different stages of Mitotic cell division in Plant cells.

**Materials required-** Microscope and permanent glass slides showing different phases of mitosis.

**Method-** Focus permanent glass slides showing different stages of mitosis under the microscope.

**Observation-** Mitosis involves two main stages; karyokinesis (division of nucleus) and cytokinesis (division of cytoplasm).

The following phases of karyokinesis are observed in the given permanent slides.

### **1. Prophase-**

- (I)The chromosomes begin to coil and become shorter and thicker.
- (ii)Each chromosome is in a duplicated form and consists of two sister chromatids.
- (III)The two sister chromatids are attached to each other at a small region called centromere.
- (iv)The nuclear membrane and the nucleolus disappear.
- (v)Spindle Fibres (formed by microtubules) appear.

### **2. Metaphase**

- (I)The duplicated chromosomes arrange on the equatorial plane.
- (ii)Each chromosome gets attached to the spindle fibre by its centromere.

### **3. Anaphase**

- (I)The centromere attaching the two chromatids divide.
- (ii)The two sister chromatids of each chromosome separate and are drawn apart towards opposite poles due to contraction of spindle fibres.

### **4. Telophase**

- (I)The chromatids form two groups, one on either pole of the spindle.
- (ii)Each chromatid or daughter chromosome uncoils and forms thin thread like chromatin fibre.
- (III)Spindle fibres disappear.
- iv)Nuclear membrane reappears.
- (vi)Nucleolus reappears in each daughter nucleus.

(vi) A cell plate is laid down in the cytoplasm at the equatorial plane

### **Cytokinesis**

The cell plate grows from the center to the periphery and finally divides the cell into two daughter cells.

## **EXPERIMENT No. 2**

**AIM**-To study the diffusion of potassium permanganate crystals in water.

**Materials required**-A beaker, water, and potassium permanganate crystals.

**Method**-Take a beaker containing water. Drop a small crystal of potassium permanganate in one corner of the beaker. Observe for some time.

**Observation**-We observe that the potassium permanganate crystal slowly starts dissolving. The molecules of potassium permanganate move from a region of their higher concentration to a region of their lower concentration.

After some time, the molecules of potassium permanganate distribute uniformly throughout water.

**Conclusion**-This experiment shows that the molecules of potassium permanganate are diffused, or uniformly distributed throughout water.

## **EXPERIMENT**

### **No. 3**

**AIM**-To study Osmosis using potato osmoscope.

**Materials required**-A large sized potato, beaker, knife, water and 25% sugar solution.

**Method**-Take a large sized potato. Peel off its skin and make its base flat.

Make a rectangular cavity in the center of the potato.

Fill the cavity of the potato with 25% sugar solution.

Mark the initial level of sugar solution in the cavity of the potato, with the help of a pin.

Place the potato in a beaker containing plain water. Leave it for 2-3 hours.

**Observation**-The level of sugar solution in the potato osmoscope rises.

**Conclusion**-The sugar solution in the osmoscope is separated from pure water by means of potato tuber cells. Each cell of potato has a cell wall which is permeable, and a plasma membrane which is a semi permeable membrane. Water enters the cell due to osmosis. Cell to cell osmosis results in the entry of water in the osmoscope and so the level of sugar solution in the potato osmoscope rises.

## **Experiment 4**

**Aim**-To show that transpiration occurs from the arial parts of the plant.

**Materials required**-A small-sized, well- watered potted plant, a polythene bag, and a string.

**Method**—Take a small sized, well-watered potted plant. Cover the plant with the help of a transparent polythene bag and tie its mouth at the base of the stem. Leave the set-up undisturbed for 2-3 hours in sunlight.

**Observation**-Drops of water appear on the inner side of the polythene bag tied around the plant.

**Conclusion**- Drops of water that appear on the inner side of polythene bag are due to saturation of water vapour given out by the leaves. This shows that water vapour is given out during Transpiration.

### Experiment No.5

**Aim**-To show that more transpiration occurs from the lower surface of a dicot leaf.

**Materials required**-A well-watered potted dicot plant, two pieces of cobalt chloride paper (2x4sq cm), two glass slides and some paper clips.

**Method**-Take a well- watered potted dicot plant.

Place one piece of cobalt chloride paper over a glass slide and hold it on the lower side of the leaf and the other paper on the upper side of the leaf in a similar manner.

Fasten both slides with the help of paper clips.

Observe for about an hour.

**Observation**-The piece of cobalt chloride paper on the lower surface of the leaf turns pink very fast while the paper on the upper surface remains blue or takes a longer time to turn pink.

**Conclusion**-This experiment shows that more transpiration takes place from the lower surface of the leaves of dicot plants than from the upper surface. This is because in a dicot leaf more stomata are present on the lower surface than on the upper surface.

### Experiment No 6

**Aim**-To show that light is necessary for photosynthesis.

**Materials required**-A well- watered potted plant, strips of black chart paper and paper-clips.

**Method**-Take a well -watered potted plant and destarch its leaves by keeping it in dark for two days.

Take strips of black paper and cover both the upper and lower surfaces of a leaf. Clip the strips tightly.

Leave the set-up in sunlight for 4-6 hours.

Detach the leaf and test it for the presence of starch.

**Observation**-It is observed that only those parts of the leaf that could get light turn blue -black showing the presence of starch in it.

**Conclusion**-This experiment shows that light is essential for photosynthesis.

### Experiment No.7

**Aim**-To show that carbon dioxide is essential for photosynthesis.

**Materials required**-A well-watered potted plant, conical flask, split cork, potassium hydroxide and a stand.

**Method**-Take a well-watered potted plant and destarch its leaves by keeping it in dark for about two days. Take a conical flask and put some potassium hydroxide in it. Potassium hydroxide absorbs carbon dioxide. Insert one leaf into the conical flask through a split cork.

Leave the set-up in sunlight for 2-3 hours.

After 2-3 hours take out this leaf from the conical flask and pluck it from the plant. Take one more leaf from the same plant. Test both these leaves for the presence of starch

**Observation**-The leaf inserted in the conical flask does not turn blue-black when tested for starch with iodine solution while the one that was exposed to atmospheric air turns blue-black.

**Conclusion**-This experiment shows that carbon dioxide is necessary for photosynthesis.

### Experiment No 8

**Aim** -To show that oxygen is produced during photosynthesis

**Materials required**-A beaker, a conical flask, a test tube, water, and some aquatic plants such as hydrilla.

**Method**- Take some aquatic plants such as hydrilla in a beaker containing water and cover them by a short- stemmed funnel.

Invert a test-tube full of water over the stem of the funnel. Place the set -up in sunlight for a few hours.

**Observation**- Bubbles of gas arise from the plants. These bubbles rise upwards and collect in the test -tube. On testing this gas with the help of a glowing wooden splinter we find that the wooden splinter bursts into flame, showing the presence of oxygen in the test tube.

**Conclusion**- This experiment shows that oxygen is produced during photosynthesis.

**END**

**GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ**  
**SESSION 2024-2025**  
**CLASS 10 C, D, E, F, G**  
**SUBJECT: COMPUTER APPLICATIONS**  
**PROJECT WORK**

**Reference Book:** LOGIX Class 10 (KIPS Publications)

**INSTRUCTIONS:** The students are expected to write **25 programs** in java. The sequence of the programs will be as follows:

1. 3 programs based on if-else.
2. 2 programs based on switch case.
3. 3 programs on looping structure(e.g.: factorial, reverse of a number, sum of the digits of number, count and display divisors, Fibonacci series, etc).
4. 3 programs on nested loop (patterns and series).
5. 4 programs on numbers (eg: prime, armstrong, automorphic, pronic, composite, palindrome, kaprekar, etc.).
6. 2 programs on method overloading.
7. 2 programs on String (Palindrome, Piglatin, Alphabetical order of characters, extracting vowels from string, counting number of words, etc.).
8. 4 programs based on Single dimensional array (linear search, binary search, bubble sort, selection sort).
9. 2 programs on Double Dimensional array (sum of the elements, display left and right diagonal, display lower and upper triangle of matrix, etc.).

**Instructions for writing the project**

- The students are expected to execute the above programs on the computer system on BlueJ.
- Write the executed programs on interleaf punched papers.
- The programs are to be written on ruled side and the variable descriptions on the blank side.
- Format of Variable Description:

<u>Name of the variable</u>	<u>Data type</u>	<u>Purpose/Description</u>

- The project is to be written with blue pen and the headings with black pen.
- The project is to be preceded by acknowledgement and index.
- The format of index is:

S. No.	Program	Remark

- No bibliography is required.

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**GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ**  
**SESSION – 2024-2025**  
**CLASS – 10 B**  
**SUBJECT – COMMERCIAL APPLICATIONS**  
**PROJECT**

**INSTRUCTIONS:**

1. There will be four separate assignments (Project) as per the topics given. Keep all four assignments in one file. Cover the file with pink chart paper. Write Commercial Applications Project 2024-25 in the middle, Roll No. at the top right corner and Name, Class, Section, Admission no. should be written at the bottom right corner.
2. **Acknowledgement**  
Order of each Assignment:
  - Name of the topic (one page)
  - **Index** (only serial no., content and page no., should be of one page)
  - Subject Matter of the topic - Describe the topic with introduction, relevant headings and sub headings, supported with pictures/diagrams/graphs/tables, as per the requirement. (4 to 5 pages).
  - **Conclusion** (one page)
  - **Bibliography** (One page- Write the name of related websites and books consulted for the making of the assignment).
  - Note: same order will be followed for each topic.
3. Each assignment should be made within 8 to 10 pages including all the points mentioned above.
4. Relevant pictures should be pasted neatly and must be bordered in black along with proper labelling/heading.

**Topics for the Assignment (Project):**

1. Make a report on the new forms of market and marketing such as Tele-markets (marketing through phones), Home-shopping (catalogues like Burlington's, etc.), Direct Marketing (example- Eureka Forbes), etc. What according to you is their relevance in future and why?
2. Study the working of the Commercial Banks in India by studying the working of the branch office of any Public Sector Commercial Bank such as SBI, Bank of Baroda, etc.
3. Study the Product Life Cycle (PLC). Using McDonald's, explain in which part the PLC is it giving valid justification.
4. Study five different advertisements in print media of the FMCG (Fast Moving Consumer Goods) such as Dove, Ariel, Cadbury Dairy Milk, Sunsilk, etc.

**END**

# **HOLIDAY HOMEWORK**

**CLASS: X – A & C**

**SUBJECT – ART**

## **Paper III: Original Imaginative Composition in Colour**

Draw and paint the following:

1. A Park Scene.
2. A Winter Scene.
3. A Beach Scene.

Your compositions must include at least 3 human figures along with a suitable background.

## **Paper IV: Applied Art**

1. Make a full-page pictorial poster on the topic 'Save the Environment'.
2. Design a vibrant 'Birthday Invitation Card' for a three-year-old child. Size of the card: 20x24 cm.
3. Design a beautiful 'Teacher's Day Card'. Size of the card: 20x24 cm.

## **Project Work – Painting of Art File Cover**

- Buy a file cover for your Art file.
- Cover it with chart paper (any colour).
- Paint and decorate the front cover beautifully with any painting, designs or motifs of your choice.
- In one corner of the front cover write your name, class, section and the academic year (2024-2025) in bold and neat letters.
- Paint or print designs on the back cover as well.

END

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