GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ
HOLIDAY HOME WORK
SESSION: 2026-27
Class X
SUBJECT: ENGLISH LANGUAGE

INSTRUCTIONS:

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

LETTER WRITING

Q1. Write a letter to the Municipal Commissioner complaining about the dumping of refuse next to your house as your house is at a corner. Mention about the problems caused like foul smell and pests; and request that the refuse be cleared immediately.

NOTICE WRITING

Q2. You are the Games Captain of your school. Your school is holding the Annual Sports Day. Write a notice informing the students about the event and invite them to participate in various sports events.

END

GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ
HOLIDAY HOME WORK
SESSION: 2026-27
Class X
ENGLISH LITERATURE ASSIGNMENT

INSTRUCTIONS:

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

ASSIGNMENT 1

Q1. Write the paraphrase of Maya Angelou's poem 'When Great Trees fall'. Analyze the shift in the speaker's emotional state from the beginning to the end of the poem. Identify and explain the use of literary devices in the poem.

ASSIGNMENT 2

Q2. Write the summary of Alphonse Daudet's short story 'The Last Lesson'. How does the character of M. Hamel contribute to the story's message?

END

Girls' High School & College, Prayagraj

Session 2026-2027

Class X

Subject- Hindi

हिन्दी परियोजना कार्य **(Hindi Assignment)**

नोट- अभिभावकों से अपेक्षा की जाती है कि वह 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

प्रश्न **1.** ए.आई. क्या है? भारत में ए.आई. का उपयोग किन-किन क्षेत्रों में हो रहा है? क्या ए.आई. मनुष्य की जगह ले सकता है? अपने विचार 400 से 450 शब्दों में व्यक्त कीजिए एवं इससे संबंधित एक पोस्टर बनाइए।

(i) ए.आई. का परिचय (ii)ए.आई. का उपयोग (iii)विचार- क्या ए.आई. वास्तव में मनुष्य की जगह ले सकता है? (iv) निष्कर्ष

प्रश्न **2.** बड़े घर की बेटी कहानी का नाट्य रूपांतरण कीजिए।

4. संदर्भित ग्रंथ

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 सफेद रंग का कवर चढ़ाकर उस पर अपना नाम,कक्षा/वर्ग एवं रोल नंबर अवश्य लिखें। यूआईडी संख्या लिखने के लिए फ़ाइल के दाहिनी ओर ढाई इंच चौड़ी और एक इंच लंबी चिट लगानी अनिवार्य है।

END

Girls' High School & College, Prayagraj

CLASS: X

Holiday Home-Work

Project

Subject: Mathematics

Session: 2026 - 2027

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 atleast 4 types and describe)

(c) Types of cheques. (Paste the picture of cheque.)

(d) Survey on the different rate of interest offered on different accounts 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%

(table on left side sheet)

Paste a logo

HDFCBANK	
Write few lines about this	

(description on right side sheet)

(e) Conclusion– Compare which bank pays better rate of Interest.

2. TOPIC: **Construction**

(i) Draw a triangle ABC, where AB = 8 cm, BC = 6 cm and $\angle B = 60°$. Draw its incircle and measure its radius.

(ii) Construct the circumcircle of a hexagon of side 5cm.

3. TOPIC: **Ogive**

Taking 2cm = 5 units along x- axis and 1 cm = 10 units along y axis. Draw an Ogive for the following frequency distribution :

Class interval	10 – 15	15 – 20	20 – 25	25– 30	30 – 35	35 – 40
Frequency	10	15	17	12	10	8

Use the ogive to estimate:

(i) the median.

(ii) the lower quartile

(iii) the upper quartile.

Bibliography.

THE END

Girls' High School & College, Prayagraj
Class: X
Holiday Homework
Project
Subject: History/Civics
Session: 2026-2027

1st Page :	Title Page: **"From Indigo to Quit India: Tracing India 's Path to Freedom"**
2nd Page:	Acknowledgement
3rd Page:	Table of Contents
4th Page:	Introduction
5th -6th Pages:	Indigo Movement (1859-60)
7th -8th Pages:	Home Rule Movement (1916)
9th -10th Pages:	Champaran Movement (1917)
11th -12th Pages:	Kheda Satyagraha (1918)
13th -15th Pages:	Non-Cooperation Movement (1920)
16th -18th Pages:	Civil Disobedience Movement (1930)
19th -20th Pages:	Quit India Movement (1942)
21st Page:	Conclusion
22nd Page:	Bibliography/Webliography

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 - 22 pages.
File is to be covered with Black paper.

END

Girls' High School and College, Prayagraj

Class: X

Holiday Home-Work

Project

Subject: Geography

Session: 2026-2027

Topic: Need for Industrialization in India, the latest trends and its impact on the economy of India.

a) Acknowledgement
b) Index
c) Introduction
d) Industrialization- definition
e) How to achieve Industrialization?
f) Need for Industrialization in India
g) Latest trends in Industrialization. (Any two) Eg:- Make in India, Sustainability and Green Energy etc.
h) Impact on the economy of India
i) Challenges
j) Conclusion
k) Bibliography

Note:

- Number of pages 20
- File to be covered with brown paper
- Paste colored pictures on each blank page related to the topic, outline the picture and label properly.
- Headings and subheadings to be written with black pen and written work with blue pen.

End

Girls' High School and College, Prayagraj
Class : X
Holiday Home-Work
(Practical)
Subject : Physics
Session : 2026 - 2027

Instructions:

1. The student has to write all experiments in the 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.

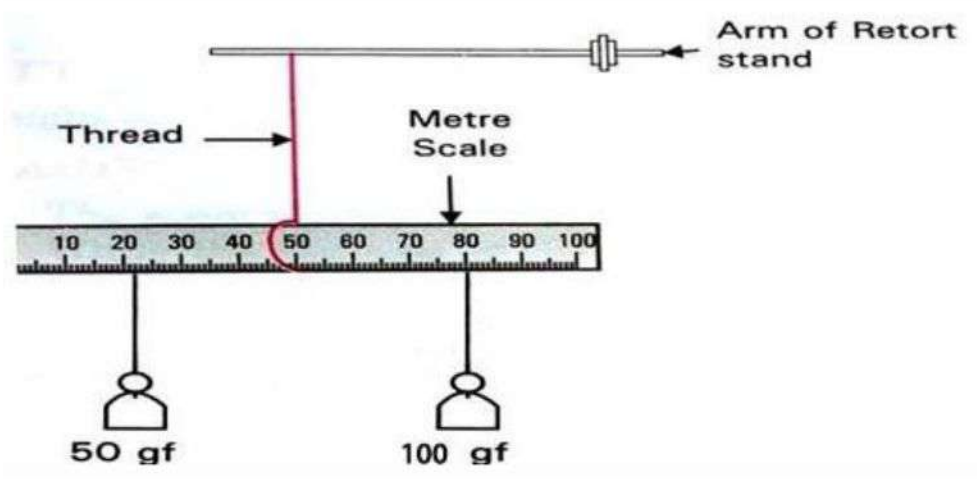
EXPERIMENT No.1

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×X (gf-cm)**	**W_2 ×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

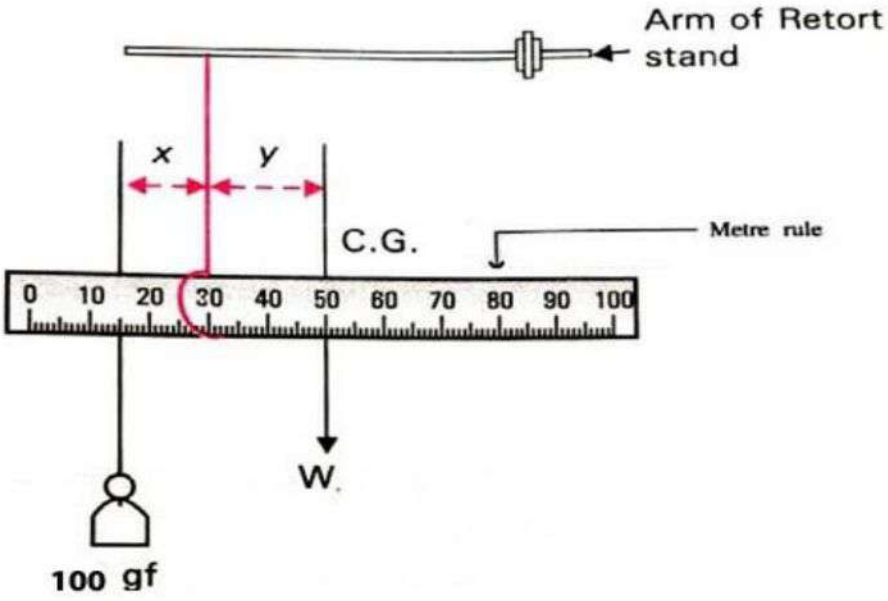
AIM: To determine the weight of the given metre ruler using principle of moments.

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=W1*(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.

EXPERIMENTNo.3

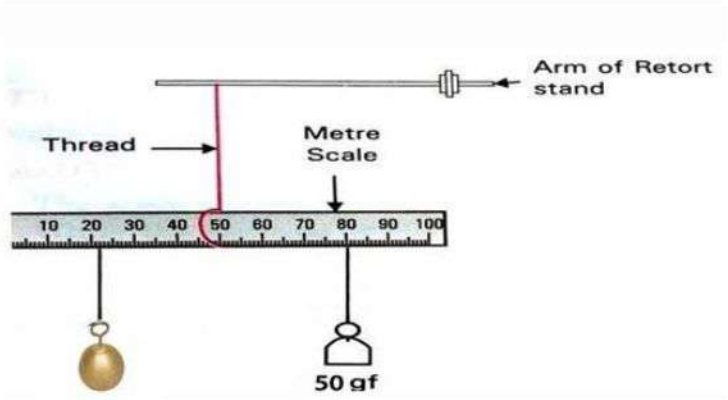
AIM: To determine the value of unknown weight of the body.

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 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 X($\frac{X}{Y}$) gf
1			
2			
3			
4			

Mean Weight = ...

= .....

= .....

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

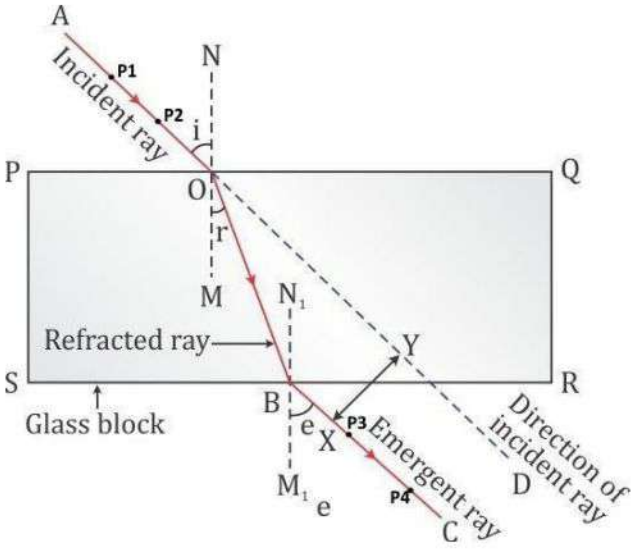
EXPERIMENT No.4

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.

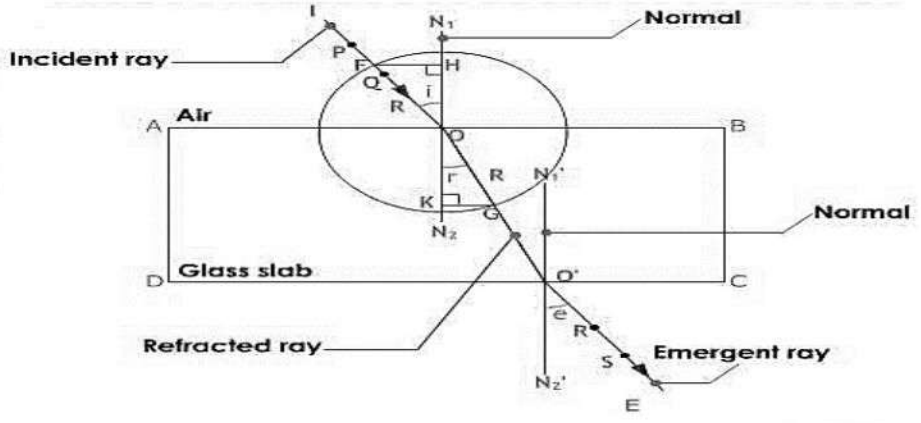
EXPERIMENT NO.5

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.



Refractive index (n) = sin i/sin r

= (FH/FO)/(KG/GO)

= (FH/FO)/(KG/FO)

= FH/KG

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 = ...

= .....

= .....

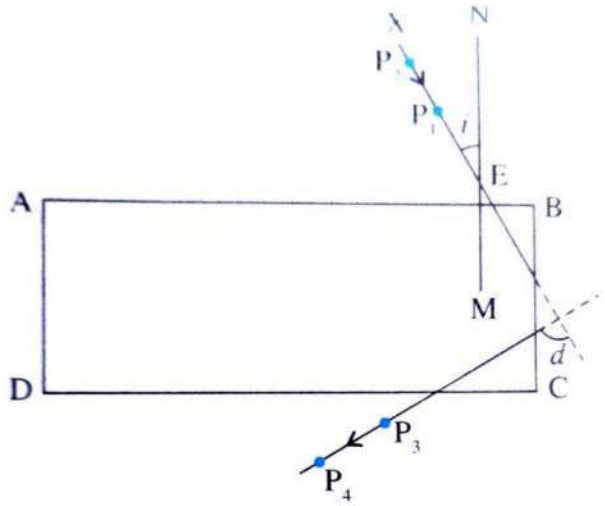
RESULT: The refractive index of a given glass block as obtained from the above experiment =**.....**

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 a way 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 = ...

EXPERIMENT NO.7

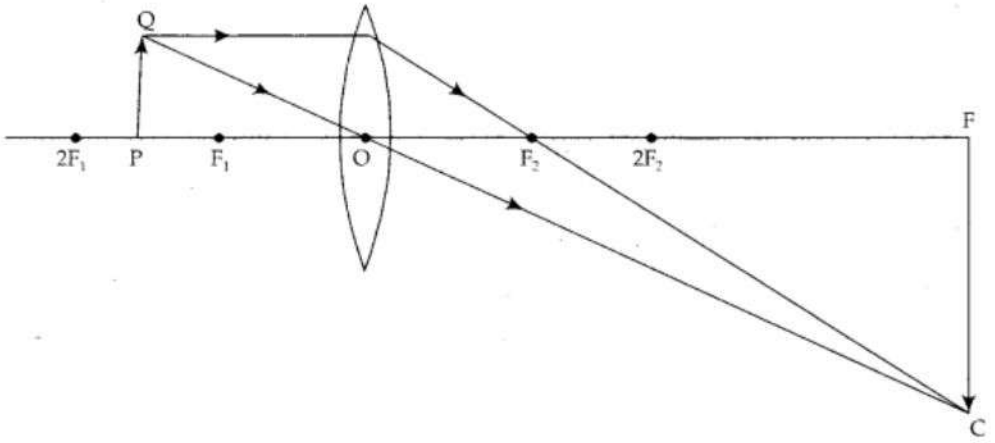
AIM: To determine the focal length of a given convex lens measuring u and v.

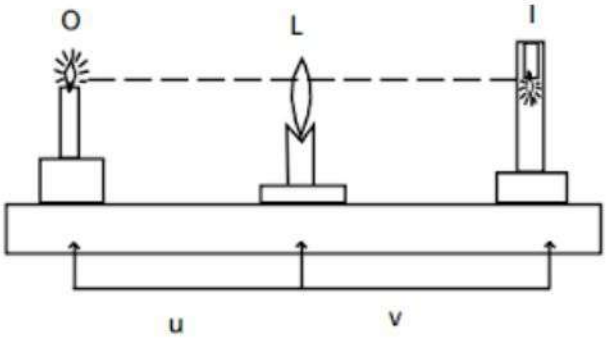
APPARATUS USED: A convex lens, a metre scale, lens holder, pin holder, a lighted candle, screen.

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

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





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^2)	F = Q/P (cm)
1.								
2.								
3.								
4.								

Mean focal length = ……..

=……..

= …….

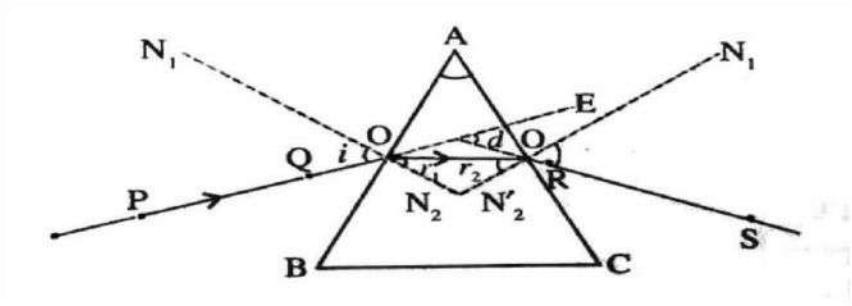
RESULT: The focal length of given convex length is F = …… cm.

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 i (in degrees)	Angle of deviation δ (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.

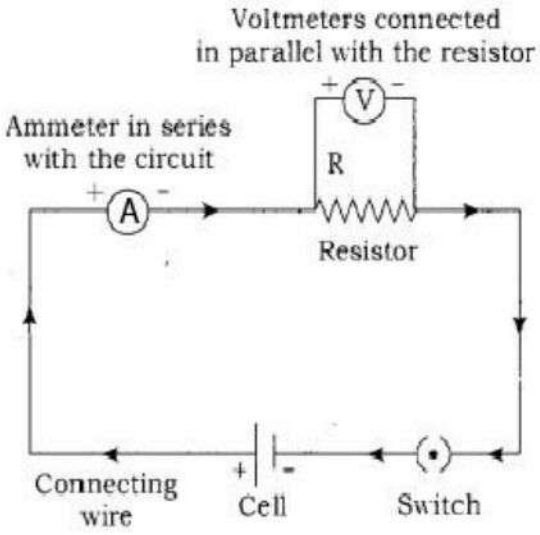
APPARATUS REQUIRED: - Coiled resistor of 2 ohm, ammeter 0 – 3.0 A, voltmeter 0 -3-0 V, rheostat, key, battery 2.0 V and connecting wires.

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.

$I \alpha V$

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

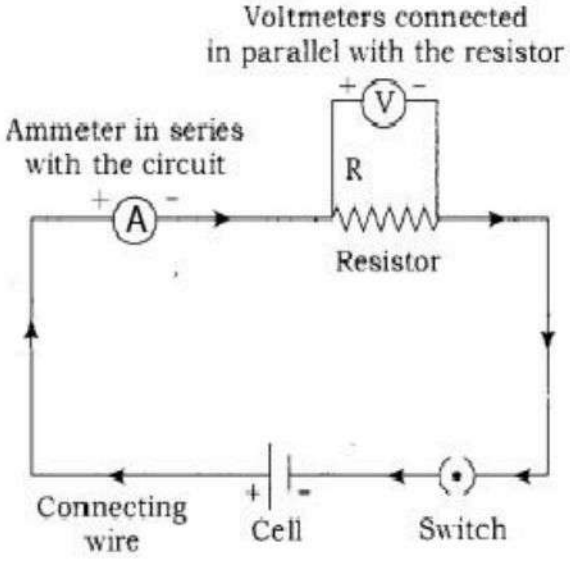
APPARATUS REQUIRED: - A resistance wire (R) ohm, ammeter 0 – 3.0 A, voltmeter 0 -3-0 V, rheostat, key, battery 2.0 V and connecting wires.

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.

$I \alpha V$

$\frac{V}{I}$ = 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 = $\frac{V}{I}$ Ω
1.			
2.			
3.			
4			

Mean resistance = …….

= …….

= …….

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

= ……

RESULT: - The resistance of given wire is ……. **Ω**

END

Girls' High School & College, Prayagraj

Class : X

Holiday Home-Work

Practical

Subject: Chemistry

Session : 2026-27

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. H_2SO_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 NH_4OH solution is brought near the evolved gas, it gives dense white fumes. Thus, the gas evolved is HCl.

(3) Name of an anion: Cl^- (chloride ion)

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

(B)

Add a small quantity of conc. H_2SO_4 and manganese dioxide (MnO_2) to the given substance and heat it gently. Make your observation, identity 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 NH_4OH solution. Thus, the gas evolved is chlorine.

(3) Name of an anion: 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 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_3).

(3) Name of the cation: NH_4^+

(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_3).

(3) Name of the cation: NH_4^+

(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 $K_2Cr_2O_7$ or acidified $KMnO_4$.

(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 $K_2Cr_2O_7$ or acidified $KMnO_4$, therefore the gas evolved is carbon dioxide (CO_2).

(3) Name of the anion: Carbonate ion (CO_3^{2-})

(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) Light green amorphous powder turns to black, on strong heating.
- (ii) It gives off a colourless, odourless gas that extinguishes a burning wooden splinter.
- (iii) The gas evolved turns lime water milky.
- (iv) The gas has no effect on acidified $K_2Cr_2O_7$ or acidified $KMnO_4$.

(2) **Identification of the gas evolved:** The gas evolved is CO_2.

(3) **Deduction:**
- (i) The black residue formed on heating is of copper oxide (CuO).
- (ii) The light green powder is copper carbonate.

(B)

Prepare a solution of the given substance by adding dilute H_2SO_4 in it 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) **Observations:**
- (i) On adding NaOH, a pale blue precipitate is obtained.
- (ii) The blue precipitate is insoluble in excess of NaOH.

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

(3) **Deduction:** The pale blue precipitate obtained is of copper hydroxide.

(B-2)

To the second portion of the solution add NH_4OH solution drop by drop and then in excess. Record your observations and give your deduction.

(1) **Observation:** On adding NH_4OH drop by drop, a pale blue precipitate is obtained which dissolves in excess NH_4OH forming deep blue colour (Prussian blue).

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

(3) **Deduction:**

(i) The pale blue precipitate is of copper hydroxide.

(ii) Deep blue colour of the solution is obtained on adding excess NH_4OH 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 ($BaCl_2$). Make your observation, name the anion and give your deduction.

(1) **Observations:**

(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** (SO_4^{2-})

(3) **Deduction:** The solution prepared (in part B) contains Cu^{2+} and SO_4^{2-} Ions in it.

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) **Observations**:

(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 (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) **Observations**:

(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 (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:** On adding barium chloride, a thick white precipitate is obtained which is insoluble in dil. HCl

(2) **Name of the anion**: Sulphate ion (SO_4^{2-})

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

EXPERIMENT No. 6

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 colourless gas with a smell of burning sulphur i.e. suffocating odour evolves.

(ii) The gas turns blue litmus red and finally bleaches it.

(iii) The gas turns limewater milky.

(iv) The gas decolourises pink potassium permanganate solution.

(v) The gas changes orange solution of acidified $K_2Cr_2O_7$ solution green.

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

(3) **Name of the anion:** Sulphite ion (SO_3^{2-})

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

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) **Observations:**

(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 (NO_2).

(B)

Take a small amount of the salt in the test tube, add conc. H_2SO_4 and warm gently. Make your observation, name the anion and give your deduction.

(1) Observations:
- (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. H_2SO_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 (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) Observations:
- (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 (Na_2PbO_2).

(D)

To the salt solution, add NH_4OH solution drop by drop and then in excess. Record your observation and give your deduction.

(1) Observation: On adding NH_4OH drop by drop, a white ppt. is obtained which remains insoluble in excess NH_4OH.

(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) Observations:
- (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) Observations:

(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) Observations:

(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) Observations:

(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) Observations:

(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 NH_4OH to this solution pale blue precipitate of copper hydroxide is formed.

(iii) On adding excess NH_4OH, 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

Girls' High School & College, Prayagraj

Class: X

Holiday Home-Work

Practical

Subject: Biology

Session: 2026-27

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-Two large sized potatoes, beakers, knife, water and 25% sugar solution.

Method- Take two large-sized potatoes. Peel off their skin and make their base flat. Make a rectangular cavity in the center of each of them. Set each piece as shown in the figure and mark them as A and B. Fill in cavity A with 25% sugar solution and cavity B with plain water. Mark the initial levels of sugar solution and water in the cavities with the help of pins as shown in the figure. Place both the pieces of sugar potatoes in separate beakers containing plain water. Leave them for 2-3 hours.

Observation-The level of sugar solution in cavity A rises but in the control, there is no change in the water level in cavity B.

Conclusion-The level of sugar solution in cavity A rises because of osmosis, whereas in cavity B, there is no movement of water molecules because there is no osmosis. In this case, the concentration of water molecules is the same on both the sides.

Experiment No. 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 for4-6 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- Beaker, funnel, water, test tube, hydrilla plant

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 & COLLEGE, PRAYAGRAJ
CLASS: X E, F, G
HOLIDAY HOME-WORK
ASSIGNMENT
SUBJECT: COMPUTER APPLICATIONS
SESSION: 2026-2027

REFERENCE BOOK: CODEBLOX 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 a 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:

Name of the variable	Data type	Purpose/Description

- 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.

END

Girls' High School & College, Prayagraj
Class: X B
Holiday Home-Work
Project
Subject: Commercial Applications
Session: 2026-2027

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 2026-2027** in the **middle** and **Name, Class, Section, Admission no., Roll no.** should be written at the **bottom right corner**. Paste a **white slip bordered in black (2cm by 6cm)** at the **top right corner** of the file and then finally cover it with **cellophane**.

2. **Acknowledgement**
   Order of each Assignment:
   - Name of the topic (one page)
   - **Index** (only serial no., content and page no. It 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. (5 to 6 pages)
   - **Conclusion** (one page)
   - **Bibliography** (one page- write the name of related websites and books consulted for making of the assignment.)
   - Note: Same order will be followed for each topic.

3. Each assignment should be made within **9 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. Design a marketing plan for the launch of a new soap in the price range of Rs.15-20.
2. Study the annual report (balance sheet and profit and loss account) of any company and comment on its financial health.
3. Study the human resource policies of an Information Technology firm (developing software or hardware or in IT training).
4. Study the working of the Public relations department of a mid-sized firm operating in the media sector.

END

Girls' High School & College, Prayagraj

Class: X – A & C

Holiday Homework

Assignment

Subject: Art

Session: 2026 – 2027

Paper III: Original Imaginative Composition in Colour

1. Paint a beautiful 'Beach Scene'. Paint at least four people enjoying a day at the beach.
2. Make a beautiful composition based on the topic 'An Outing with Friends'. Depict at least three human figures.

Paper IV: Applied Art

1. Make a full-page pictorial poster on the topic 'Crisis & Compassion' based on the current situation of the ongoing global conflict and the cry for peace.
2. Design a vibrant 'Grandparent's Day Card'. Size of the card: 20x24 cm.

Project Work - Painting of An Art File Cover

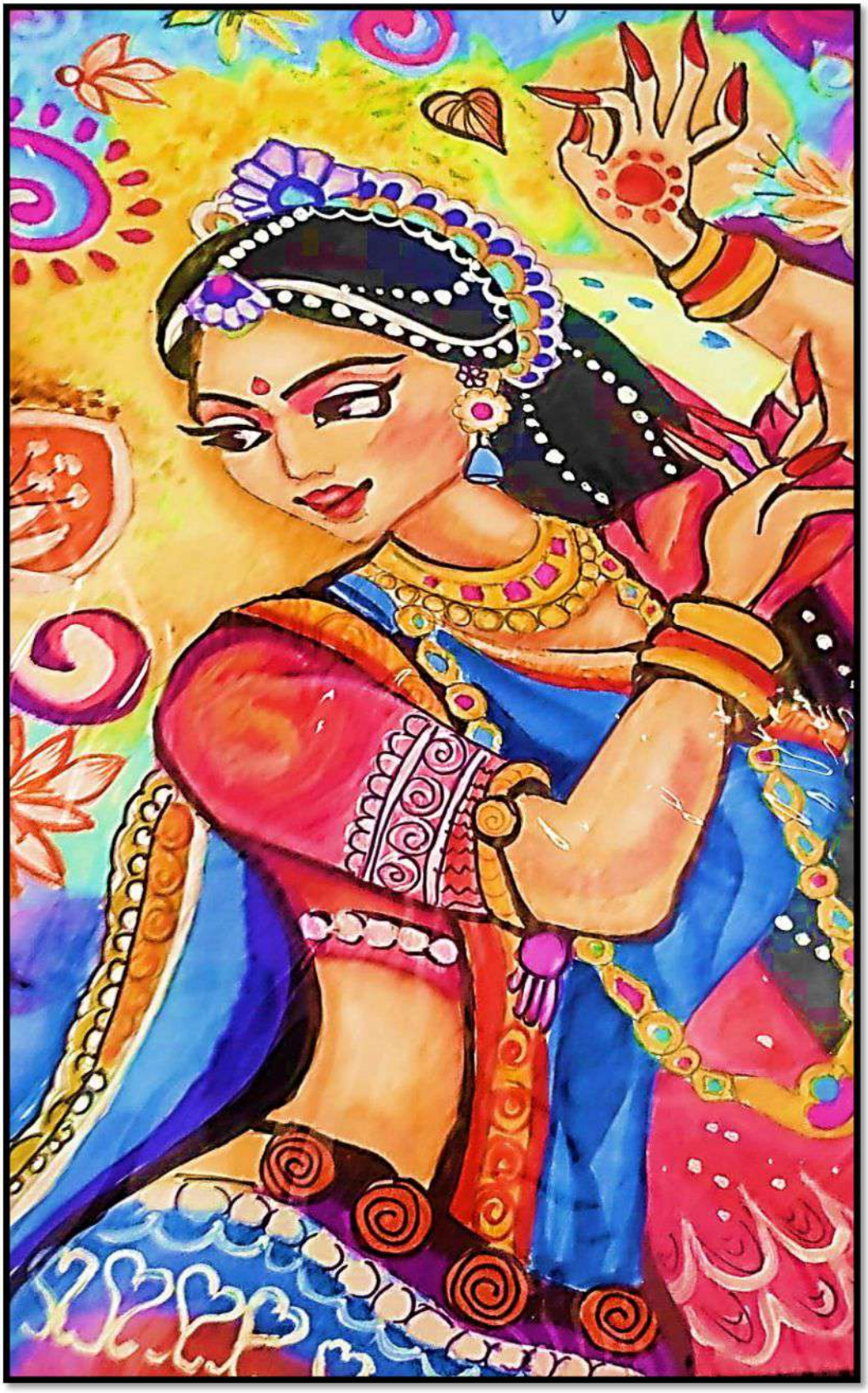
- Buy a file cover for your Art file.
- Cover it with chart paper (any colour).
- Paint and decorate the front cover beautifully with any painting, designs or motifs of your choice.
- In one corner of the front cover write you name, class, section and the academic year (2026-2027) in bold and neat letters.
- Paint or print designs on the back cover as well.
- For inspiration and reference purposes refer to Appendix – A.

END

APPENDIX – A

Back Cover

Front Cover



Front Cover

GIRLS' HIGH SCHOOL & COLLEGE , PRAYAGRAJ
Class X C,D
HOLIDAY HOME-WORK
ASSIGNMENT
SUBJECT: ROBOTICS AND ARTIFICIAL INTELLIGENCE
SESSION: 2026-2027

REFERENCE BOOK : ROBOTICS & ARTIFICIAL INTELLIGENCE CLASS 10 (KIPS Publications)
INSTRUCTIONS:

- The project is to be written with blue pen and the heading with black pen.
- The project is to be preceded with acknowledgement and index.
- Format of the index is :

S.No.	Program	Remark

Robotics

I. Attempt any 3 questions:-

1. Make a presentation on the difference between a machine/robot/cobot.
2. Technology is evolving at a fast pace. What does it mean for us? Discuss.
3. Are smart systems making humans less smart? Discuss.
4. Prepare a report on robotics systems being used in different spheres of life?

Artificial Intelligence (AI)

II. Attempt any 2 questions:-

1. Create a concept map of smart transport management systems for a school.(Refer Tony Buzan concept map).
2. Create a chart for an AI enabled Query Management system for a school. Use AI Project Framework.
3. Prepare a presentation on how AI could be used in a school.Which areas in a school can be benefitted using AI? Using AI Project Framework elaborate the implementation of AI towards a smart school.

Python Programming

III. Attempt all questions:-

- Students are expected to execute the programs mentioned below on the computer on Python IDLE.
- Write the program on the ruled side.
- Take the printout of the output. Paste on the interleaf side.
- No bibliography is required.
- Make a variable description on the ruled side.Format of Variable Description:

Name of the variable	Data type	Purpose/ Description

1. Create NumPy arrays:-
a) Getting elements from Numpy arrays using index values.
b) Numpy array slicing.
c) Getting Numpy array shapes and reshaping them.
d) Iterating a Numpy array.
e) Join and split Numpy arrays.
f) Searching and sorting Numpy arrays.
g) Using Mean, Median and Mode methods given in Numpy.

2. Write a Python program to calculate the **electricity bill** based on the following slab rates:

Units Consumed	Rate per Unit
First 100 units	₹5 per unit
Next 100 units (101–200)	₹7 per unit
Above 200 units	₹10 per unit

The program should:

- Accept previous and current meter reading
- Calculate units consumed
- Calculate total bill using slab rates

OR

2. Write a Python program to calculate bonus based on years of service:

Years of Service	Bonus
Less than 3 years	No bonus
3 to 5 years	5% of salary
6 to 10 years	10% of salary
More than 10 years	15% of salary

The program should:

- Accept salary and years of service
- Calculate and display bonus amount

3. Write a program to make a dictionary of 5 Indian states and store their capital and population. Display the state's name with details.

4. Write a program to search for the word "library" in a given sentence and display a proper message. **Output Requirement:** "String Name Found" or "String Name Not Found"

5. Write a program to create a list of all classroom objects and sort them alphabetically.
Display original list and sorted list.

6. Display an image using matplotlib and print its numpy array form. Also check the data type and shape of the numpy array. Use the library 'skimage' for getting sample images.

7. Write a Python program to perform the following tasks:

CSV File (products.csv)	**JSON File (products.json)**
Product,Original Price,Selling Price Laptop,60000,55000 Mobile,30000,28000 Tablet,20000,18000 Headphones,5000,4500 Watch,10000,8500	[{"Product": "Camera", "Original Price": 40000, "Selling Price": 36000}, {"Product": "Speaker", "Original Price": 8000, "Selling Price": 7000}]

A. Read data from a **CSV file** containing product details (Product Name, Original Price, Selling Price).
B. Read additional product data from a **JSON file** and combine it with the CSV data.
C. Display the dataset using:head( ), tail( ), info( )
D. Plot a graph showing:
    a. X-axis → Product Name
    b. Y-axis → Prices (Original Price and Selling Price)
E. Use: Different markers, Different line styles
F. Label both axes properly and give a title to the graph.

8. Write a Python program based on the below data sets
a. **Histogram Analysis**
Plot a histogram using Marks (%). Identify the most frequent marks range and comment on the distribution.
b. **Normal Distribution Analysis**
Use Test Scores to plot a histogram and display it in a graph(using NumPy +Matplotlib). Calculate mean, median, and mode. Comment whether the data follows a normal distribution.
c. **Regression Analysis**
Plot Study Hours vs Marks (%). Draw a best-fit line. Predict marks for 9 study hours and describe the relationship(positive or negative) .What do you infer from the trend?
d. **Bar Graph Analysis**
Plot a bar graph of Student ID vs Attendance (%). Identify highest and lowest attendance.
e. **Combined Analysis**
Compare Study Hours vs Marks and Attendance vs Marks. Write inference on performance trends.

Student ID	Study Hours	Marks (%)	Attendance (%)	Test Scores
S1	1	35	60	30
S2	2	40	65	35
S3	2	45	70	40
S4	3	50	72	45
S5	3	55	75	50
S6	4	60	78	55
S7	4	65	80	60
S8	5	70	82	65
S9	5	75	85	70
S10	6	80	88	75
S11	6	82	90	78
S12	7	85	92	82
S13	7	88	94	85
S14	8	90	95	88
S15	8	92	96	90