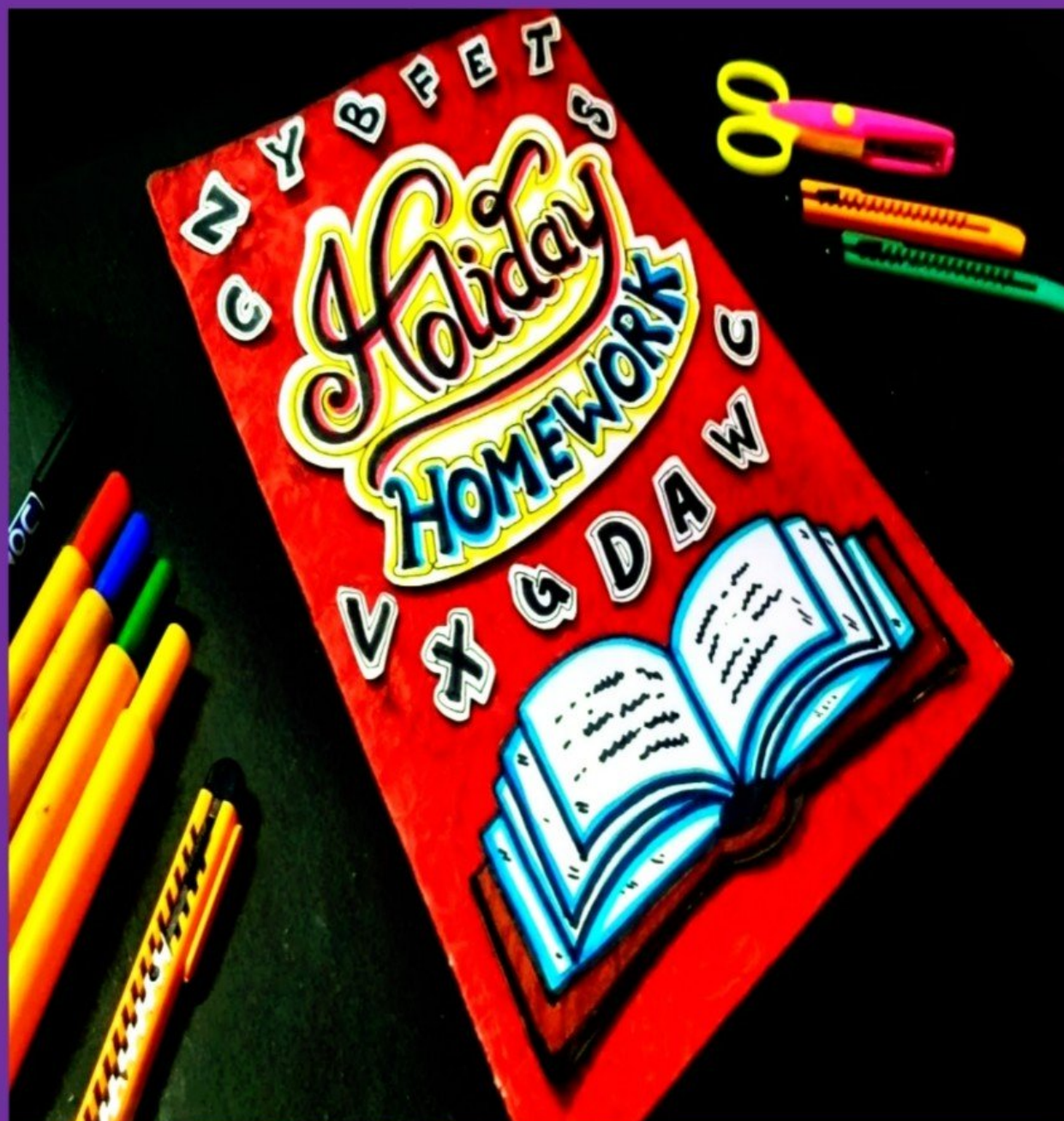


LEARNING IS MORE EFFECTIVE WHEN IT IS ACTIVE RATHER THAN A PASSIVE PROCESS.

CLASS: XII (MEDICAL/NON-MEDICAL)



GURU NANAK INTERNATIONAL PUBLIC SCHOOL

CLASS: XII

SUBJECT: CHEMISTRY

UNIT: III

ELECTROCHEMISTRY

1. Differentiate between Galvanic cell and electrolytic cell
2. How would you determine the standard electrode potential of the system $\text{Mg}^{2+}|\text{Mg}$
3. Depict the galvanic cell in which the reaction takes place. Further show:
 - (i) Which of the electrode is negatively charged?
 - (ii) The carriers of the current in the cell.
 - (iii) Individual reaction at each electrode.
4. How is electrode potential different from cell potential
5. Describe the construction and working of standard hydrogen electrode.
6. What is the purpose of salt bridge placed between two half cells of a galvanic cell?
7. Give the representation of the Daniel cell.
8. Define resistivity and conductivity.
9. What is cell constant? How is it determined?
10. What are the problems faced in measuring R of ionic solutions and how are they overcome
11. Differentiate between metallic and electrolytic conduction.
12. Define the terms conductivity and molar conductivity for solution of an electrolyte. Discuss their variation with concentration.
13. What is the unit of molar conductivity?
14. What is limiting molar conductivity?
15. Describe the characteristics of variation of molar conductivity with dilution for a) strong electrolyte b) weak electrolyte.
16. With the help of a graph explain why it is not possible to determine the limiting molar conductivity for a weak electrolyte by extrapolating the concentration-molar conductance curve as for strong electrolytes.
17. Express the relationship between degree of dissociation of an electrolyte and its molar conductivities.
18. How is molar conductivity of a weak electrolyte at infinite dilution determined?
19. State Kohlrausch's Law. Write two applications.
20. How will you determine Λ_m° for water
21. State Faraday's Laws of Electrolysis.
22. What is the difference between primary cell and secondary cell?
23. Describe the Leclanche cell with reference to electrodes used and reactions occurring at electrodes.

Numericals for Practice

1. The conductivity of an aq. Solution of NaCl in a cell is $92 \times 10^{-4} \text{ ohm}^{-1}\text{cm}^{-1}$. The resistance offered by the cell is 247.8 ohm . Calculate the cell constant for the cell. (2.28/cm)
2. The conductivity of a solution containing 1g of anhydrous BaCl_2 in 200 cm^3 of the solution is found to be $0.00585/\text{cm}$. Calculate the molar conductivity of the solution. ($\lambda_m = 241.28 \text{ Scm}^2/\text{mol}$)
3. The resistance of a 0.01 M solution of KCl is 100Ω at 298 K . Calculate (i) conductance (ii) conductivity (iii) resistivity (10^{-2} , 10^{-2} , 100) $G^* = 1 \text{ cm}^{-1}$
4. 0.5 molar solution of a salt placed between platinum electrodes 2 cm apart and each of area of cross section 4 cm^2 has a resistance of 25Ω . Calculate λ_m . (40)
5. Calculate the molar conductivity at infinite dilution of AgCl from the following data. $\Lambda^\circ_m \text{ AgNO}_3 = 133.4$, $\Lambda^\circ_m \text{ KCl} = 149.9$, $\Lambda^\circ_m \text{ KNO}_3 = 144.9 \text{ Scm}^2/\text{mol}$ ($138.45 \text{ Scm}^2/\text{mol}$)
6. The conductivity of 0.001 M acetic acid is $4.95 \times 10^{-5} \text{ S/cm}$. Calculate the dissociation constant. $\Lambda^\circ_m = 90.5 \text{ Scm}^2/\text{mol}$. (1.85×10^{-5})
7. At 18°C , the conductivities at infinite dilution of NH_4Cl , NaOH and NaCl are 129.8 , 217.4 and $108.9 \text{ Scm}^2/\text{mol}$. If the equivalent conductivity of $n/100$ solution of NH_4OH is $9.93 \text{ Scm}^2/\text{eq}$, Calculate the degree of dissociation and dissociation constant at this dilution. (4.17% , 1.8×10^{-5})
8. Construct the cells in which the following reactions are taking place. Which of the electrodes act as anode and which as cathode?
i) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$ ii) $\text{Cu} + 2\text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$ iii) $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$ iv) $\text{Fe} + \text{SnCl}_2 \rightarrow \text{FeCl}_2 + \text{Sn}$
9. Calculate the electrode potential at a copper electrode dipped in a 0.1 M solution of copper sulphate at 25°C . The standard electrode potential of Cu^{2+}/Cu system is 0.34 V (0.31 V)
10. What is a single electrode potential of a half cell for zinc electrode dipping in 0.01 M zinc sulphate solution at 25°C . The standard electrode potential of Zn/Zn^{2+} system is 0.763 V . (0.8221 V)
11. Calculate the emf of the cell. $\text{Mg}/\text{Mg}^{2+}(1\text{M}) \parallel \text{Ag}^+(0.001\text{M})/\text{Ag}$ $E^\circ_{\text{Ag}^+/\text{Ag}} = 0.8 \text{ V}$; $E^\circ_{\text{Mg}^{2+}/\text{Mg}} = -237 \text{ V}$. What will be the effect on emf if concentration of Mg^{2+} is decreased to 0.1 M ? (3.013 V ; 3.022 V)
12. To find the standard potential of M^{3+}/M electrode, the following cell is constituted. $\text{Pt} \mid \text{M}/\text{M}^{3+}(0.00018 \text{ M}) \parallel \text{Ag}^+(0.01 \text{ M})/\text{Ag}$. The emf of this cell is found to be 0.42 V . Calculate the standard potential of the half reaction $\text{M}^{3+} + 3\text{e}^- \rightarrow \text{M}$ $E^\circ_{\text{Ag}^+/\text{Ag}} = 0.8 \text{ V}$ (0.32 V)
13. A zinc rod is dipped in 0.1 M solution of ZnSO_4 . The salt is 95% dissociated at this dilution at 298 K . Calculate the electrode potential given that $E^\circ_{\text{Zn}^{2+}/\text{Zn}} = -0.76 \text{ V}$ (-0.79 V)
14. One half in a voltaic cell is constructed from a silver wire dipped in silver nitrate solution of unknown concentration. The other half cell of zinc electrode in 0.10 M solution of $\text{Zn}(\text{NO}_3)_2$. A voltage of 1.48 is measured for this cell. Use this information to calculate the concentration of silver nitrate solution. $E^\circ_{\text{Zn}^{2+}/\text{Zn}} = -0.763 \text{ V}$; $E^\circ_{\text{Ag}^+/\text{Ag}} = 0.8 \text{ V}$ (0.0124 M)

**Guru Nanak International Public School
I-Block BRS Nagar Ludhiana
Class- XII
Holidays Homework**

1. Draw and colour Landscape.
 - Sheet used-half A2 size
 - Medium- Acrylic colours



2. Draw and colour composition Madhubani Painting.
 - Sheet used- A2
 - Medium-Acrylic colours



3. Make a Bottle Art.



Holiday homework of physical education

Prepare practical file

1. Athletic track marking and theory
2. Any one game from your practical file marking and theory
3. Any 5 Yoga asanas

8:18 am



GURU NANAK INTERNATIONAL PUBLIC SCHOOL

I-BLOCK, B.R.S NAGAR, LUDHIANA

Holidays Homework

CLASS : XII

SUBJECT : Information Technology

Part A: Database Concepts & MySQL

1. Create a Database Design (Activity Work)

Design a database for any ONE of the following:

- * School Management System
- * Library Management System
- * Tuition Academy System

 Include:

- * At least 2–3 tables
- * Fields with data types (e.g., INT, VARCHAR)
- * Primary Key and Foreign Key

 Present it neatly in your notebook or file.

2. MySQL Practical Work

Write and practice the following SQL queries:

- * Create a table
- * Insert at least 5 records
- * Display records using SELECT
- * Use WHERE condition
- * Update any record
- * Delete a record

 Write queries and also mention the output (expected result).

3. Case Study (Real-Life Application)

Visit a nearby shop/school/office and observe:

- * How data is stored (manual or computer-based)
- * Type of records maintained

 Write a 1–2 page report including:

- * Importance of databases
- * Problems without database
- * Benefits of using MySQL

HOLIDAY HOMEWORK
CLASS: XII (MEDICAL/NON-MEDICAL)
SUBJECT: CHEMISTRY

Instructions for the Holidays Home work:-

Note:-Holidays Homework carries marks hence submission of work post vacation i.e (14-07-2026 to 17-07-2026) is compulsory for all students.

1. The Holidays home work must be done in a very neat and presentable manner.

Questions must be done in the given sequence.

2. The child will be assessed for the presentation, neatness, completion of all the given questions and timely submission.

3. Homework will be assessed on the basis of neatness (5 marks), creativity (5 marks), timely submission (2 marks) and originality of ideas (3 marks).

1. Art integrated activity. (Two dimensional or pictorial Activity)

(i) Study and use of various media and techniques to the extent of their availability.

Make a project report on given topics.

1. Study of the effect of pH on rusting of Iron: Investigate how different pH levels influence the corrosion of iron. (1051,1071,1081)

2. Study of the effect of potassium bisulphite as food preservative: Explore the effectiveness of potassium bisulphite as a food preservative under different conditions. (1052,1072,1082)

3. Study of the constituents of an alloy: Analyze the composition of various alloys.

4. Determination of the contents of cold drinks: Analyze the chemical components of different commercial cold drinks. (1056, 1062,1076,1086)

5. Preparation of alum from scrap aluminum: A practical project involving the synthesis of alum.

6. Sterilization of Water Using Bleaching Powder.

7. Analysis of Fertilizer

8. Presence of Oxalate Ions in Guava Fruit and Different Stages of Ripening.(1057,1066,1077,1085)

9. Quantity of Presence of Casein in Different Samples of Milk. (1058 ,1074,1087)

10. Extraction of various essential oils present in Ajwain (Carum), Elaichi (Cardamom), and Saunf (Fennel Seeds)

11. Antacids (1073,1079,1083)

12. Food Adulteration: STUDY OF COMMON FOOD ADULTERANTS IN FATS, OIL, BUTTER, GHEE, TURMERIC POWDER, CHILI POWDER AND PEPPER. (1060,1078,1088)

13. Determination of Caffeine In Tea Samples.(1054,1059,1064,1084,)

14. Investigatory project comparing soya bean milk and natural milk. (1055,1061,1065,1075)

15. Investigatory project on the digestion of starch by salivary amylase and the effect of temperature and pH. (1053,1063,1080)

Complete your practical note book.

1. MIND MAP

Mind Map of formulas of chapter 1 2 and 3 (Electric charges and field ,Electric potential and capacitance and

Current electricity) in physics notebook including short tricks of JEE/NEET.

2. ASSIGNMENT

We are sharing list of important questions of chapter 1, 2 and 3. Learn all these questions with lot of written

practice in physics notebook. All questions should be solved once in your notebook.

https://drive.google.com/file/d/1CM76yeTquq_ZjsFH7nSzdilNOAPczXv8/view?usp=drivesdk

<https://drive.google.com/file/d/1CB4paQJNH68XIKgXHcsURNmv3lFf41V/view?usp=drivesdk>

https://drive.google.com/file/d/1C2PMc_pkI8fOx8UJtIdtPlfgrZVjVnF8/view?usp=drivesdk

<https://drive.google.com/file/d/1C3l5vRs3rYsZANHJUpMBFCSVWicRL5rl/view?usp=drivesdk>

3. Practical notebook

Section A

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.
3. To verify the laws of combination (series and parallel) of resistances using a metre bridge.
4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

Section B

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.

3. To determine angle of minimum deviation for a given prism by plotting a graph between angle of

incidence and angle of deviation.

4. To determine refractive index of a glass slab using a travelling microscope
5. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
2. To assemble the components of a given electrical circuit.
3. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.
4. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
5. To observe diffraction of light due to a thin slit.
6. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror)

Instructions for practical

Don't fill out the observation tables. When you conduct the experiment and take readings in the lab, you will

fill them.

Leave space for calculations and a graph.

You must write your aim, your apparatus, a diagram, an observation table, computations, attach graphs, and

your results on the LHS (with pencil only).

Aim, formula utilized, steps of procedure, sources error, precautions and result should all be written on the RHS (with pen).

4. RAY OPTICS

Read following topics from NCERT.

Reflection of light, spherical mirrors, mirror formula, refraction of light.

GNIPS-I Block,
Ludhiana
Class: 12th
English Core
HOLIDAYS
HOMEWORK

***" Learning Is a never Ending process"
Dear Students you are supposed to
make a
Project as a Work assignment for
HOLIDAYS.***

***Make a project of any given topic or any
other topic from your text.
prescribed books-
Vistas
Flamingo***



INSTRUCTIONS FOR MAKING THE PROJECT



The marks allotted for ASL PROJECT: 10

Project : 10(5 for Project+5 for Viva)

👉 Viva based on the project will be taken by the External.

👉 The project must contain atleast 20-25 Sheets.

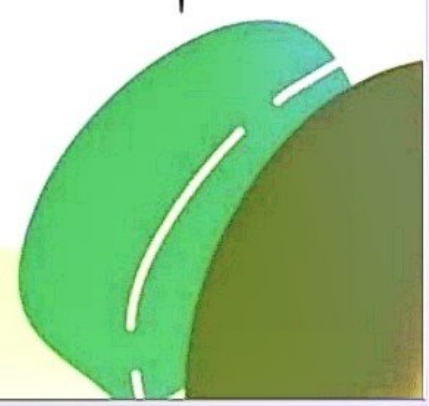
👉 Use as many pictures as you require

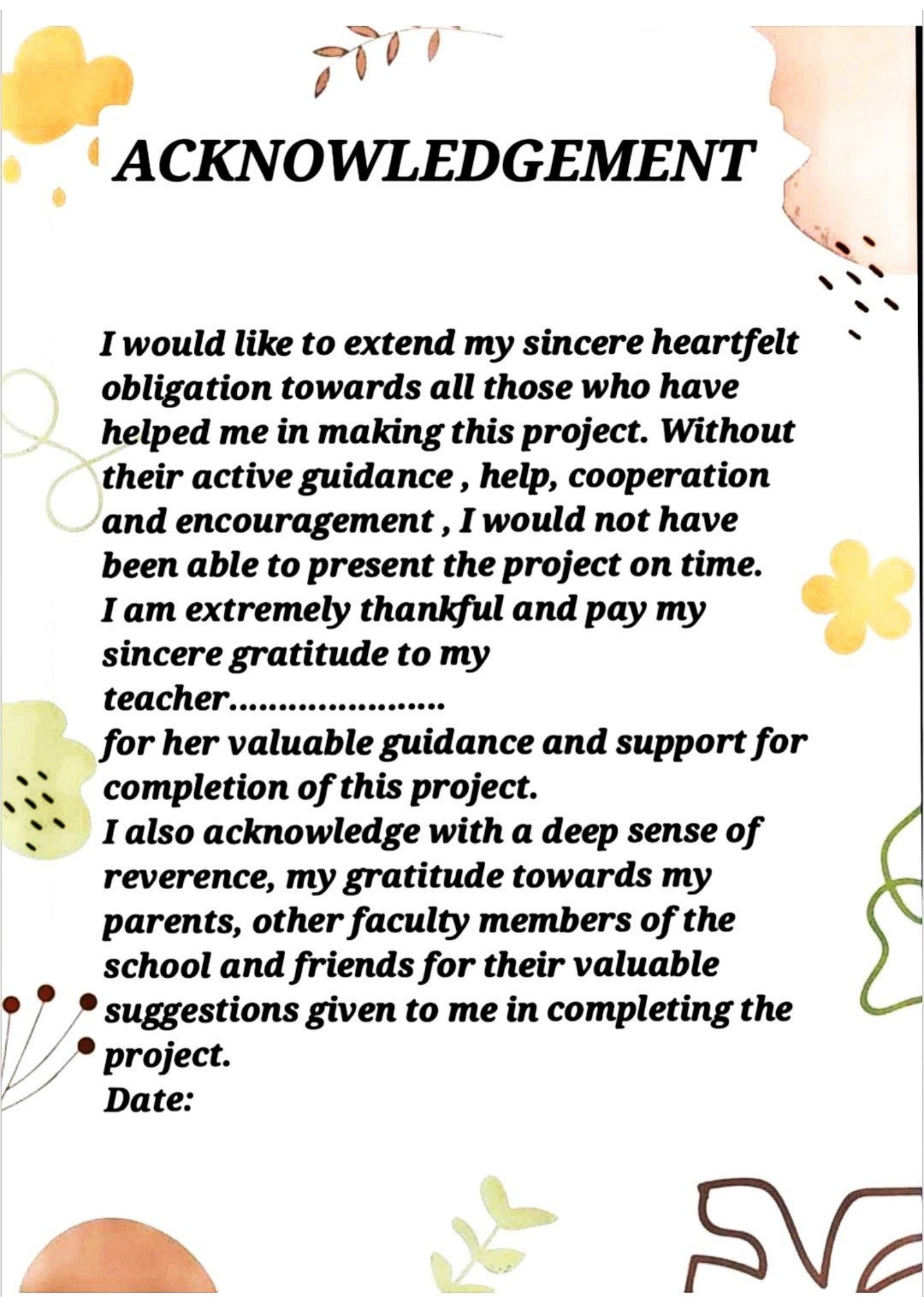
👉 Use sketch pens for headings and coloured pens for content.

👉 Use A4 Size coloured /designer paper sheets for the projects.



Project should be handwritten.





ACKNOWLEDGEMENT

I would like to extend my sincere heartfelt obligation towards all those who have helped me in making this project. Without their active guidance , help, cooperation and encouragement , I would not have been able to present the project on time. I am extremely thankful and pay my sincere gratitude to my teacher.....

for her valuable guidance and support for completion of this project.

I also acknowledge with a deep sense of reverence, my gratitude towards my parents, other faculty members of the school and friends for their valuable suggestions given to me in completing the project.

Date:



CERTIFICATE

This is to certify that the project work

on_____

based on the curriculum of

CBSE has been completed

by_____

of

of GNIPS,I Block

Class-XII Section_____

**Ludhiana above mentioned project work has
been completed under my guidance during
the academic year 2025-26.**

Signature of Teacher



SAMPLE PROJECT

PROJECT1 : PLIGHT OF OLD AGED PEOPLE

- 1. Index***
- 2. Acknowledgement***
- 3. Certificate of Completion***
- 4. Objectives***
- 5. About the Poetess (with photos)***
- 6. Poetess personal Experience***
- 7. Portrayal of Sensational Separation Between a Mother and a Daughter***
- 8. Plight of Old Age People: Ugly Truth About Old Age***
- 9. Respect for Elderly Parents***
- 10. Efforts for stress Free and Secured Life of Aged People***
- 11. Positive and Negative Opinions of Aged People Living in Old Age Homes***
- 12. Data Regarding Miserable state of old people.***

Students let us utilise this time by doing some activities so that your interest for the subject does not fade away.

Task :- Do the Activities creatively

Comprehensive Math lab manual and do any 18 projects. Graph papers should be properly stuck and graphs should be neatly plotted

Make a 3-D mathematical model using maximum 2-d shapes and 3-d figures. Try to make working model.

Or Make a working model on any of your favourite topics of math.

Solve NCERT exemplar of chapters covered in the class.

ASL PROJECT

TOPIC
**PLIGHT OF
OLD AGED PEOPLE**

Name : Your Name
Class : XII ()
Roll No. : 00
School : Guru Nanak Public
School, Ludhiana
Session : 2025-26



Students can make project on any
chapter of your textbooks.

"My Mother at Sixty-Six" is a sample.

CERTIFICATE

This is to certify that the project work
on

"PLIGHT OF OLD AGED PEOPLE"

based on the curriculum of CBSE
has been completed by

of GNIPS, I Block

Class – XII, Section _____

Ludhiana, above mentioned project work
has been completed under my guidance
during the academic year 2025–26.

Date: _____

Signature of Teacher

2

INDEX

S.NO.	CONTENT	PAGE NO.
1.	Acknowledgement	1
2.	Certificate	2
3.	Objectives	3
4.	Introduction	4
5.	About the Poetess	5
6.	Poem – Plight of Old Aged People	6-7
7.	Theme of the Poem	8
8.	Central Ideas	9
9.	Poetic Devices	10
10.	Summary	11
11.	Personal Experience	12
12.	Survey / Questionnaire	13
13.	Findings & Analysis	14
14.	Conclusion	15
15.	Learning Outcomes	16
16.	Bibliography	17
17.	Viva Questions	18



1

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Date: _____

3

HOLIDAY HOMEWORK OF BIOLOGY CLASS 12 MEDICAL PRACTICALS AND INVESTIGATORY PROJECT

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study and Observe the following (Spotting):

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness.
8. Controlled pollination - emasculation, tagging and bagging.
9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.
10. Models specimen showing symbiotic association in root nodules of leguminous plants, Cuscuta on host, lichens.

INVESTIGATORY PROJECTS

1. To Study the DNA the mysterious molecule
2. To Study the Chromosomes and DNA Packaging
3. To Study the Structure of the RNA and Its Functions
4. To Study the Genetic Mutation: Types and its Causes
5. To Study the Isolation of DNA from Animal Cell
6. Study of the Developments in the Rice Genome Research
7. To Study the Hemophilia: Types, Symptoms, and Treatment
8. To Study the Adaptive Radiation and Ecological Opportunity
9. To Study the Adaptive radiation in the aquatic vertebrates
10. To Study DNA Fingerprinting: Principles, Methods, and Applications