THE VOYAGE OF LEARNING

A Summer Message from the Desk of the Director

"Learning is a treasure that will follow its owner everywhere."

Dear Parents and Students,

As we approach the vibrant summer break, I extend my warmest wishes to all our students and their families. Vacations are a wonderful time to relax, rejuvenate, and create beautiful memories together. However, it is also a golden opportunity to keep the spark of curiosity alive.

Important Summer Schedule

- **Summer Vacation Begins:** Monday 1 June, 2026
- **Summer Vacation Concludes:** Tuesday, 30th June 2026
- **School Reopens:** Wednesday, 1st July 2026 (at the usual school time)

Our **Holiday Homework** has been thoughtfully designed not as a burden, but as a bridge—a way to connect classroom learning with creative, real-world exploration from **1 June to 30th June**. It aims to foster independent thinking, creativity, and self-discipline in our students.

TO OUR DEAR STUDENTS

Use this time to read widely, explore new hobbies, and engage deeply with the projects assigned to you. Challenge yourselves, stay curious, and remember that consistent, daily efforts make learning effortless.

TO OUR RESPECTED PARENTS

We view education as a shared partnership. We kindly request you to guide and supervise your children as they work through their assignments. Encourage them to manage their time effectively so they can balance both recreation and learning throughout this break. Your encouragement is the greatest catalyst for their academic growth.

Let us utilize this break to discover new passions and return to school on **1st July, 2026** with renewed energy, enthusiasm, and a deeper love for learning.

We wish you all a safe, happy, and intellectually fulfilling summer vacation!

Warm regards,

Director

Jaycees Public School

JAYCEES PUBLIC SCHOOL RUDRAPUR
Summer Break Holiday Homework-(2026-27)
Class –XII(SCIENCE)

Mathematics

Total Duration: 30 Days

1. Relations and Functions (Days 1–6):

1. Revise types of relations – reflexive, symmetric, transitive.
2. Revise types of functions – one-one, onto, bijective.
3. Prepare a flowchart of function types.
4. Solve **5 HOTS** and **5 assertion-reason** questions.
5. Practice **previous year CBSE questions**.

2. Inverse Trigonometric Functions (Days 7–10):

1. Revise the concept of principal values.
2. Prepare a table of domains and ranges of inverse trigonometric functions.
3. Plot the graphs of inverse trigonometric functions and find their domain and range.
4. Solve **5 HOTS problems** and **3 case-based questions**.

3. Matrices (Days 11–17):

1. Revise types of matrices, operations, and properties.
2. Create a matrix chart (order, type, operations).
3. Solve **HOTS problems and MCQs** from sample papers.
4. Practice **real-life applications** of matrices.

4. Determinants (Days 18–23):

1. Revise properties of determinants.
2. Derive area of triangle using determinant.
3. Practice problems on adjoint, inverse, and consistency of equations.
4. Solve **assertion-reason** and **case-based problems**.

5. Continuity and Differentiability (Days 24–30):

1. Revise definition of continuity and differentiability.
2. Solve derivative problems of inverse trigonometric and exponential functions.
3. Solve **5 HOTS** and **3 application-based questions**.
4. Solve **mixed questions** from reference books or past year papers.
5. Attempt a final practice test (Full Syllabus of Chapters 1–5).

General Instructions

- Maintain a dedicated **Holiday Homework notebook** for all chapters.
- Use proper steps and labeling in all diagrams and graphs.
- Submit the completed notebook on the **first day after vacation**.
- Late submission may result in deduction of marks.

English

ENGLISH PROJECT (TO BE AND EVALUATED FOR INTERNAL ASSESSMENTS 26-27)
LIST OF TOPICS/THEMES

I) THE LAST LESSON- FREEDOM OF SPEECH AND EXPRESSION

- Linguistic chauvinism
- Importance of Language
- Globalization of Language
- Franco-Prussian War
- Historical References of Events wherein linguistic identity was threatened/snatched

II) LOST SPRING-LIFE IN A SLUM

- Research and case study of a slum.
- Life of the people in a slum

- Education
- Health and Infrastructure
- Government Initiatives
- Role of youth in the upliftment of the weaker sections of the society
- Comparative Study of Slums
- Slums of yesterday turned to cities of today.

III) DEEP WATER- PHOBIA

- Phobias and fears of people.
- Psychological and emotional impact.
- How to overcome.
- Impact on one's life and society
- Case Study

IV) JOURNEY TO THE END OF THE EARTH

- Role of Antarctica in sustenance of the globe.
- Existence of Gondwana and the dinosaurs.
- Climate change and the global warming
- Impact of human activities and threat for Antarctica
- Students on Ice – role and relevance
- Geoff Green – antarctic ambassador and global leader

TOPICS BEYOND BOOKS

- The Population Control Bill is the Right Step Forward.
- Unrestrained Freedom of Speech and Expression is the Pillar of Progressive Society.
- Where Humanity Fails, Pandemic Occurs
- Peace is Both a Right and Duty.
- Should Healthcare and Medicine be Provided Free by the Government?
- Childhood Vaccinations should be Compulsory.
- Juveniles should be tried and tested as adults.

(Attempt at least three – 200-300 words each)

PROJECT LAYOUT

1- Cover Page with title, school details, details of students

2-Statement of purpose/ Objective/ Goal

3- Certificate of Completion under the guidance of the teacher.

4- Action Plan

- 3-4 lines about the project.
- Research Tools and Methodology.
- Supporting Material-AV Aids/ PPT

5- Introduction of the Project.

6- Body of the Project

- Supporting Material
- Questionnaire
- Case Study
- Assignments
- Survey Report
- Transcripts
- Articles
- Interview

7-REPORT

8-STUDENT/GROUP REFLECTION

100-150 words paragraph about the experience and learning outcomes
9-PHOTOGRAPHS
10- LIST RESOURCES/ BIBLIOGRAPHY

PHYSICAL EDUCATION

Note- Practical 1 and Practical 2 work will be done in Lab Manual and Practical 3 work will be done in File Only.

➢ Practical-1: Fitness tests administration. (SAI Khelo India Test)

➢ Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.

➢ Practical-3: Anyone one IOA recognized Sport/Game (Team Game) of choice. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

Computer Science

Write following Python Programs in Practical Note Book

1.) Write definition of a **method/function AddOddEven(VALUES) to return sum of odd and even values separately** from the list of VALUES. Also **write main program** to display the sums returned
For example : If VALUES = [15, 26, 37, 10, 22, 13].
The main program should display
Even Sum: 58 Odd Sum: 65

2.) Define a **function in SUM7(L)** in Python to **sum all the values ending with 7**, which are stored in list L passed as argument.
For example : If L = [7, 26, 37, 107, 722, 173].
The main program should display
Even Sum: =151
i.e. Sum of 7, 37 and 107

3.) Write **4- separate questions using functions for** read, write , append and search operations on a Python Text File.

4.) Write **4- separate questions using functions for** read, write , append and update operations on a Python Binary File.

Fine arts

A Brief Introduction to Indian Miniature Schools & Rajasthani
School of Miniature Painting and Pahadi school of miniature
painting.
SHORT ANSWER TYPE QUESTIONS
Q1. Kalpasutra and kalkacharya katha are the painted manuscripts of which school?
Q2. Who were the main patrons of western school of painting?
Q3. Where was Astasahasrika Prajnaparamita painted?
Q4. Who coined the term 'Rajput painting' to refer to the Rajasthani miniatures?
Q5. What was the material used to make brushes for miniatures?
Q6. The lock of hair hanging near the ear is a special feature of which painting?
Q7. Who composed Gita Govinda?
Q8. Who wrote bihari satsai?
Q9. Who composed Rasmanjari?
Q10. "Bharat meets Rama at chitrakoot" belongs to which school of Rajasthani miniatures?
Q11. Who painted Radha "Bani Thani"?
Q12. Under whose patronage , krishangarh style of painting flourished?
Q13. Where is pichwai art famous?
Q14. The great artist "nuruddin" belongs to which sub-school of Rajasthani school of miniature painting?

Q15. Who made the first scientific division of Rajasthani painting?
Q16. Who has painting the miniature title,"Nanda, Yashoda & Krishna with kinsman going to Vrindavan"?
Q17. Who is the artist of the painting "Krishna with Gopis"?
Q18. Nainsukh is a painter of which sub school?
Q19. In which painting ,an episode of Bhagvat Purana had been depicted?
Q20. The period of which Pahari ruler is called 'The Golden Period of Kangra School '?
Q21. What is the style used in Kangra paintings?
Q22. When is the pahari painting style considered to have started?
Q23. In what form are the eyes of women made in kangra style?
Q24. Name the school of pahari art?
Q25. Pahari style was mainly influenced by which style?
Q26. The use of beetle wings in paintings can be seen in which style?
Q27. 'Dana' was a painter of which genre?
Q28. Which was the oldest center of Rajasthani art?
Q29. Who is credited with the origin of Bikaner style ?
Q30. By what names are the Rajput style painting are also known?

PAINTING

1. Nature & Object Study (Still Life)
Practice observing light, shadow, and texture. These are foundational for your practical exams.
Task: Create 3 Still Life drawings.
Subjects: A composition of household objects (e.g., a kettle, a draped cloth, and a fruit bowl) or a group of geometric shapes.
Medium: Use Pencil Shading (2B to 8B) or Charcoal for one, and Watercolors or Oil Pastels for the others.
Focus: Accurate proportions, tonal values, and the "cast shadow" of the objects.
2. Composition Painting
This section tests your ability to tell a story through art.
Task: Create 2 Original Compositions on A4 size sheets.
Themes:
Indian Festival: (e.g., Diwali celebrations, Holi, or a village fair).
Daily Life: (e.g., A vegetable vendor, children playing, or a railway station scene).
Medium: Poster colors or Watercolors.
Focus: Human figures in action, perspective, and a balanced color scheme.
3. Traditional Indian Art (Folk Art)
Class 12 painting often includes a study of India's rich artistic heritage.
Task: Complete one detailed work of a traditional Indian art style.
Styles to choose from: Madhubani, Warli, Pattachitra, or Miniature style.
Medium: Fine-liner pens, Acrylics, or Poster colors.

Subject-Chemistry

PROJECT (1 To 10 JUNE)

Complete your investigatory project which you have been already allotted (except the observation part if you haven’t performed your project).

PROJECT FILE SHOULD CONTAIN PAGES IN FOLLOWING ORDER:

a. CERTIFICATE
b. ACKNOWLEDGEMENT
c. AIM OF PROJECT
d. INTRODUCTION
e. THEORY
f. APPARATUS REQUIRED

g. PROCEDURE
h. OBSERVATION
i. CONCLUSION
j. PRECAUTION
k. BIBLIOGRAPHY
**** STRICTLY ADHERE TO ABOVE MENTIONED ORDER**

LAB MANUAL WORK (11 To15 JUNE)

1. To prepare 250 ml of 0.02 M (M/50) Mohr's Salt solution.
2. To prepare a standard solution of M/50 Mohr's salt solution. With its help, determine molarity and strength of $KMnO_4$ Solution.
3. To prepare solution of M/30 (250 ml) Mohr's salt solution. With its help, determine molarity and strength of $KMnO_4$ solution.
4. To prepare solution of M/40 oxalic acid. With its help determine the molarity and strength of given $KMnO_4$ solution.
5. Preparation of one lyophilic and one lyophobic sol.
6. Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform.
7. Variation of cell potential in $Zn/Zn^{2+}||\ Cu^{2+}/Cu$ with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.
8. Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.
9. To identify the functional group present in the given organic compound.

A- Alcohol, B- Phenol, C- carboxylic, D- Aldehyde, E- Ketone,

10. To analyse the given salt of acidic and basic radical.

PRACTICE QUESTIONS (16 To 30 JUNE)

SOLUTION

1. Calculate the temperature at which a solution containing 54 g of glucose, ($C_6H_{12}O_6$) in 250 g of water will freeze. (K_f for water =1.86 K mol kg^{-1})
2. 100 mg of a protein is dissolved in enough water to make 100 mL of a solution. If this solution has an osmotic pressure 13.3 mm Hg at 25° C, what is the molar mass of protein? (R = 0.0821 L atm mol^{-1} K^{-1} and 760 mm Hg = 1 atm.)
3. What concentration of nitrogen should be present in a glass of water at room temperature? Assume a temperature of 25° C, total pressure of 1 atmosphere and mole fraction of nitrogen in air of 0.78. [K_H for nitrogen = 8.42 × 10–7 M/mm Hg]
4. Calculate the freezing point depression for 0.0711 m aqueous solution of sodium sulphate (Na_2SO_4), if it is completely ionised in solution. If this solution actually freezes at – 0.320 °C, what is the value of Van't Hoff factor for it at the freezing point? (K_f for water is 1.86 K kg mol–1)
5. What mass of NaCl (molar mass = 58.5 g mol–1) must be dissolved in 65 g of water to lower the freezing point by 7.5°C? The freezing point depression constant, K_f , for water is 1.86 K kg mol^{-1}. Assume van't Hoff factor for NaCl is 1.87.
6. A solution prepared by dissolving 8.95 mg of a gene fragment in 35.0 mL of water has an osmotic pressure of 0.335 torr at 25°C. Assuming the gene fragment is a non-electrolyte, determine its molar mass.
7. A 1.00 molal aqueous solution of trichloroacetic acid (CCl_3COOH) is heated to its boiling point. The solution has the boiling point of 100.18°C. Determine the van't Hoff factor for trichloroacetic acid. (K_b for water = 0.512 K kg mol–1)
8. At 25°C the saturated vapour pressure of water is 3.165 kPa (23.75 mm Hg). Find the saturated vapour pressure of a 5% aqueous solution of urea (carbamide) at the same temperature. (Molar mass of urea =

60.05 g mol–1)

9. Calculate the mass of compound (molar mass = 256 g mol–1) to be dissolved in 75 g of benzene to lower its freezing point by 0.48 K (K_f = 5.12 K kg mol^{-1}).
10. The density of water of a lake is 1.25 g $(mL)^{-1}$ and one kg of this water contains 92 g of Na^+ ions. what is the molarity of Na^+ ions in the water of the lake? (Atomic mass of Na = 23.00 u)

ORGANIC CHEMISTRY

1. List all the name reactions given in the NCERT.

List all the oxidizing agent and reducing agent

PHYSICS

WORKSHEET 1 (01/06/26 to 10/06/26) = Do any 15 numerical from first three chapters.

Worksheet 2 (11/06/26 to 20/06/26) = work of Lab manual

Write the following experiments in your lab manual:-

SECTION - A

1. To find resistance of a given wire / standard resistor using metre bridge.

2. To verify the laws of combination (series) of resistances using a metre bridge.

3. To verify the laws of combination (parallel) of resistances using a metre bridge.

4. To find the frequency of A.C mains with sonometer.

SECTION - B

5. To find the focal length of a convex mirror, using a convex lens.

6. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.

7. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
8. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

After all experiments do write following activities:-

SECTION - A

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 study the variation in potential drop with length of a wire for a steady current.

SECTION - B

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 obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

INSTRUCTION:-

1. In each experiment do write following content:-

objective, apparatus required, theory, observation table(left page), diagram(left page with pencil), calculation, result, precaution.

2. Do not fill the observation table, just make the out work (with pencil).

PHYSICS CLASS XII PROJECT LIST

SELECT THE PROJECT ACCORDING TO YOUR ROLL NO.

UNIT–I : ELECTROSTATICS

1. Gold Leaf Electroscope
2. Capacitor Charging and Discharging Circuit
3. Parallel Plate Capacitor Model
4. Lightning Conductor Demonstration
5. Electric Field Mapping Model

UNIT–II : CURRENT ELECTRICITY

6. Household Wiring Demonstration Board
7. Water Level Indicator
8. Continuity Tester
9. Series and Parallel Circuit Demonstrator
10. Smart Energy Meter Prototype
11. Automatic Fuse/Safety Circuit
12. Conductivity Tester for Liquids
13. Temperature Controlled Fan
14. Battery Eliminator Model
15. Electricity Theft Detection Model

UNIT–III : MAGNETIC EFFECTS OF CURRENT & MAGNETISM

16. Electromagnetic Crane
17. Simple Electric Bell
18. DC Motor Working Model
19. Magnetic Field Visualization Board
20. Solenoid Magnetic Field Demonstration
21. Loudspeaker Working Model
22. Compass Needle Deflection Setup
23. Simple Galvanometer Model
24. Magnetic Door Alarm
25. Magnetic Levitation (Maglev) Concept Model

UNIT–IV : ELECTROMAGNETIC INDUCTION & ALTERNATING CURRENT

26. AC Generator Model
27. Transformer Working Model
28. Bicycle Dynamo Experiment
29. Wireless Power Transfer Model
30. Hand-Crank Electricity Generator
31. Mini Windmill Generator
32. Electromagnetic Induction Demonstration
33. UPS/Inverter Working Prototype
34. AC vs DC Demonstration Board

35. Tesla Coil (Low Voltage Safe Version)

UNIT–V : ELECTROMAGNETIC WAVES

36. Fibre Optic Communication Setup
37. Morse Code Transmission Circuit
38. Infrared Remote Control Demonstrator
39. Laser Communication Demonstration
40. Wi-Fi Signal Strength Detector

UNIT–VI : OPTICS

41. Periscope
42. Kaleidoscope
43. Telescope Model
44. Compound Microscope Model
45. Human Eye Working Model
46. Defects of Vision Demonstrator
47. Prism Dispersion Demonstration
48. Pinhole Camera

Subject–Biology

List of Topics-

Activity 1

Make the project file on a given topic along with PPT. The file should contain the front page, certificate, acknowledgement, introduction, bibliography along with minimum 12 pages related with the content of given topic.

Lab Activity -2

Write an experiment 1, 4 and 5 from the list "A" in your lab manual.
Write an experiment 1 and 2 from list "B" in your lab manual.

Activity -3

Grow onion bulb through Hydroponic techniques. (As discussed in class)

Activity-4

Prepare a chart/table showing different contraceptive methods.

Type of Contraceptive Method	**Examples**	**Mode of Action**	**Advantages**	**Limitations**
Natural method				
Barrier method				
IUD				
Oral pills				
Injectable/Implant				
Surgical method To strengthen biological vocabulary.				

Activity-5

Prepare a glossary of at least **40 important terms** from Unit 1.