



**BHAVDIYA PUBLIC SCHOOL AYODHYA**  
**SUMMER VACATION ASSIGNMENT (2026-27)**  
**CLASS-XI SCIENCE**

**English**

1. Read any one book and write a book review in 150–200 words in your notebook. You may choose books that inspire moral values and character building, such as:
  - The Alchemist
  - Wings of Fire
  - The Diary of a Young Girl
  - The Blue Umbrella
  - The Secret Garden
2. Read the Times of India regularly and prepare a collage based on the ongoing sports events/news.
3. Prepare a self-composed poem on the topic:  
“Today’s India: Moving towards Development or Destruction
4. Prepare a collage of photographs from your mother’s childhood and write a detailed description of her lifestyle, memories, and experiences, presenting it creatively and related with the chalpoem photograph. Photographer’s story presentation.

**MATHS :-**

**Theme: Arunachal Pradesh – The Land of the Rising Sun**

*Chapters Covered: Sets and Relations*

**Objective:**

This holiday homework is designed to strengthen the concepts of Sets and Relations and connect mathematics with the geography, culture, and biodiversity of Arunachal Pradesh.

**SECTION A: SUBJECTIVE / SYLLABUS BASED WORK (50 %)**

1. Let  $A = \{\text{Tawang, Ziro, Bomdila, Pasighat}\}$  and  $B = \{\text{Ziro, Itanagar, Pasighat, Roing}\}$ . Find  $A \cup B$ ,  $A \cap B$ ,  $A - B$  and  $B - A$ .
2. Classify the following as finite, infinite, empty or singleton sets: (a) Prime numbers between 50 and 60, (b) Capitals of Arunachal Pradesh, (c) States sharing border with Arunachal Pradesh.
3. In a survey of 40 students, 25 like trekking, 20 like wildlife photography, and 10 like both. Draw a Venn diagram and answer related questions.
4. If  $A = \{\text{Mithun, Yak, Red Panda}\}$ , find  $P(A)$  and the number of subsets.
5. Let  $X = \{\text{Monpa, Adi}\}$  and  $Y = \{\text{Tawang, Ziro}\}$ . Find  $X \times Y$ .
6. Define a relation between tribes and districts. Find domain and range.
7. Write in roster and set-builder form: even natural numbers less than 20.
8. Explain how sets help classify information about Arunachal Pradesh in 5–6 lines.

**SECTION B: (Do any one) PROJECT & ACTIVITY WORK (30 Marks)**

1. Prepare a colorful Venn diagram poster comparing festivals of Arunachal Pradesh.
2. Make an arrow diagram showing the relation between tribes and their districts.
3. Create a set collage using pictures of animals, festivals, rivers, and monuments.

OR

### **SECTION C: (Do any one) REAL LIFE LEARNING & PRACTICAL APPLICATION (20 Marks)**

1. Survey 10 family members about places they have visited (mountains and rivers) and represent the data using a Venn diagram.
2. Select 3 tourist places and 3 transport modes and form all possible travel combinations using Cartesian product.
3. Classify Arunachal Pradesh wildlife into mammals, birds and endangered species using sets.

OR

### **Integrated Project**

Prepare a 5–7 page project titled 'Mathematics in Arunachal Pradesh' including introduction, sets, relations, diagrams, and conclusion.

### **Submission Guidelines**

- Complete the work neatly in a separate notebook or project file.
- Use colored pens and diagrams wherever required.
- Attach relevant pictures or maps.
- Submit after the summer vacation.

### **CHEMISTRY:-**

### **Holiday Homework Guidelines**

- Submit the homework in a separate decorated file/project notebook.
- Maintain neat handwriting and proper diagrams.
- Use coloured pens/pencils wherever required.
- Mention Name, Class, Roll Number on the cover page.

### **SECTION A – Creative Learning**

#### **1. Chemistry Around Us Scrapbook**

Prepare a scrapbook on the topic:

#### **“Chemistry in Daily Life”**

Include:

- Medicines
- Food preservatives
- Cosmetics
- Fertilizers
- Soaps & detergents
- Fuels
- Artificial sweeteners
- Paste pictures and write 3–4 lines about each.

#### **2. Periodic Table Activity**

Make a colourful Modern Periodic Table on chart paper showing:

- Metals
- Non-metals
- Metalloids
- Noble gases
- Highlight:
  - s-block
  - p-block

- d-block
- f-block elements

### **SECTION B – Subject Enrichment**

#### 3. Investigatory Project

Prepare a project on any **ONE** topic:

- Green Chemistry
- Water Pollution and Chemical Treatment
- Nano Technology
- Importance of Chemistry in Agriculture
- Air Pollution and Acid Rain

#### **Project should contain:**

- Introduction
- Objectives
- Data/Pictures
- Conclusion
- Bibliography

### **SECTION C – Assignment Work**

#### Chapter 1: Some Basic Concepts of Chemistry

Solve the following:

(1) Define:

- Mole concept
- Molar mass
- Empirical formula
- Limiting reagent

(2) Calculate the number of moles in:

- (i) 18 g of water
- (ii) 44 g of CO<sub>2</sub>

3. Differentiate between:

- Empirical and Molecular formula
- Atom and Molecule

4. Numericals:

- Calculate molecules in 11 g CO<sub>2</sub>.
- Find molar mass of H<sub>2</sub>SO<sub>4</sub>.
- Calculate percentage composition of water.

#### Chapter 2: Structure of Atom

1. Draw labelled diagrams of:

- Rutherford model
- Bohr model

2. Write electronic configuration of:

Na, Mg, Cl, Ca

3. Define:

- Orbit
- Orbital
- Isotope
- Isobar

#### Chapter 3: Classification of Elements & Periodicity

1. State Modern Periodic Law.

2. Explain:

- Atomic radius
- Ionization enthalpy
- Electron affinity

- Electronegativity
- Write periodic trends across periods and groups.

3. Differentiate:

- Metals and Non-metals
- Cations and Anions

#### **SECTION D – HOTS & Application Based Questions**

- Why does ice float on water?
- Why are noble gases chemically inactive?
- Why does sodium react vigorously with water?
- Why are isotopes chemically similar?
- Why is carbon called the basis of life?

#### **SECTION E – Practical & Activity Work**

1. Perform any **TWO** activities at home and write observations:

- Prepare a natural indicator using turmeric or china rose.
- Crystallization of salt/sugar.
- Separation of mixtures using evaporation.
- Identify acidic/basic substances using litmus.

**Include:**

- Aim
- Materials Required
- Procedure
- Observation
- Conclusion

#### **SECTION F – Fun With Chemistry**

**1. Solve:**

- 10 chemistry riddles
- 10 chemistry-based crossword words
- Draw 5 laboratory apparatus with names and uses

2. Reading Task

Read about:

- Contribution of Dmitri Mendeleev
- John Dalton atomic theory
- Write a short note (80–100 words each)

**Date of submission:** Homework must be submitted in the first week after summer vacation.

**Teacher's Note**

“Learning chemistry becomes easier when concepts are connected with real life. Explore, observe and enjoy the world of chemistry during your holidays.”

### **BIOLOGY:-**

Chapters: The Living World, Biological Classification, and Plant Kingdom

#### **Chapter 1: The Living World**

1. Define biodiversity and explain its importance.
2. Differentiate between taxonomy, systematics, and classification.
3. Write short notes on binomial nomenclature.
4. Prepare a flowchart showing the hierarchy of classification.
5. Explain the contribution of Carolus Linnaeus in taxonomy.
6. Draw and label a diagram of the taxonomic hierarchy.
7. Collect pictures of five organisms and classify them into proper taxa.

## Chapter 2: Biological Classification

1. Differentiate between Monera, Protista, and Fungi in tabular form.
2. Explain the five kingdom classification proposed by R.H. Whittaker.
3. Describe the structure and importance of bacteria.
4. Write short notes on viruses, viroids, and lichens.
5. Prepare a chart on useful and harmful microorganisms.
6. Draw labelled diagrams of Amoeba, Euglena, and Bacteria.
7. Explain the economic importance of fungi.

## Chapter 3: Plant Kingdom

1. Differentiate between algae, bryophytes, pteridophytes, gymnosperms, and angiosperms.
2. Explain alternation of generations with suitable diagrams.
3. Prepare a project on medicinal plants found in your locality.
4. Draw and label the life cycle of a fern.
5. Explain the characteristics and examples of gymnosperms.
6. Prepare a herbarium sheet with five different leaves.
7. Write the economic importance of algae and bryophytes.

## Creative Activity

Prepare a colourful scrapbook or chart showing different groups of plants and microorganisms with pictures and brief descriptions.

## Instructions

- Complete the assignment neatly in a separate notebook/file.
- Use coloured diagrams wherever required.
- Submit the homework after summer vacation.
- Maintain proper handwriting and presentation.

## **PHYSICS:**

Instructions:

Complete all work neatly in a separate Physics homework notebook/file.

Use diagrams wherever required.

Write all activities in your own words.

Homework will be assessed on the basis of creativity, presentation, accuracy and timely submission.

Section-A : Conceptual Learning

Chapter 0 – Physical World

Prepare a chart showing contributions of famous physicists:

Isaac Newton

Albert Einstein

C. V. Raman

Galileo Galilei

Chapter 1 – Units and Measurements

Define:

Fundamental units

Derived units

Least count

Significant figures

Solve the following:

Convert 72 km/h into m/s.

Convert 1 light year into meters.

Express 0.000056 in scientific notation.

Prepare a table of SI units and symbols.

### **Section-B : Numerical Practice**

Solve the following numericals with proper steps:

A car travels 120 km in 2 hours. Find its average speed.

A body moves with acceleration  $5 \text{ m/s}^2$  for 10 seconds. Find final velocity if initial velocity is 0.

Calculate momentum of a body of mass 4 kg moving with velocity 8 m/s.

Find kinetic energy of a body of mass 2 kg moving with speed 6 m/s.

A ball is dropped from a height of 20 m. Find the time taken to reach the ground.

For kinetic energy relation:

For momentum relation:

### **Section-C : Activity Based Learning**

Activity-1

Measure length, breadth and height of any room in your house and calculate:

Area of floor

Volume of room

Activity-2

Prepare a simple pendulum using thread and a small object. Observe time period for different lengths and write your conclusion.

Activity-3

Observe five objects around you and classify them as:

Scalars

Vectors

### **Section-D : Project Work**

Prepare any ONE project on chart paper or file:

Applications of Physics in Daily Life

Renewable Sources of Energy

Modern Means of Communication

Role of Physics in Medical Science

Physics Behind Sports Activities

You may include pictures, diagrams and newspaper cuttings.

### **Section-E : Diagram Practice**

Draw and label neatly:

Vernier Calipers

Screw Gauge

Simple Pendulum

Parallelogram Law of Vectors

Motion Graphs:

Distance-Time Graph

Velocity-Time Graph

Example of graphable function:

### **Submission Guidelines**

Homework must be submitted in the first week after summer vacation.

File/notebook should be neat, covered and properly indexed.

Parents' signature is compulsory on the last page.

**“Physics is not only a subject, it is the understanding of nature.”**

## COMPUTER SCIENCE:

To reinforce the topics covered in Chapter 1: Computer System Overview, you are required to complete the following holiday homework. These tasks will help you develop both theoretical understanding and practical programming skills.

### **Part A: Computer System Overview – Creative & Research-Based Tasks**

Choose any one task from the following:

1. Poster Creation:

Topic: "Generations of Computers & Their Features"

Highlight hardware evolution, key technologies, and applications.

You may design the poster digitally (using Canva/MS PowerPoint) or make a handmade one.

2. Presentation/Report:

Topic: "Types of Software (System Software, Application Software, Utility Programs, Open Source vs Proprietary Software)"

Include definitions, examples, images/logos, and comparisons.

Format: PPT (5–8 slides) or Report (300–400 words)

3. Info graphic or Chart:

Topic: "Components of a Computer System – Input, Output, Memory, Storage, CPU"

Explain each component with a diagram or flowchart.

## PHYSICAL EDUCATION :-

Practical file(major game)

- . Major game history
- . Measurement
- . Terminology
- . Rules regulation
- . International game name
- . International Stadium name
- . Draw ground/court
- . Major game equipment's

## PSYCHOLOGY :-

### **1. Section- A**

Read and prepare chapter 1 and 2 and prepare 40 MCQs. 20 from each chapter. It should include

- Assertion reason,
- Case based MCQs.

It should be done in the classwork copy.

### **2. Section- B**

Watch any one of the movies (Inside out, Tare Zameen par, 12th fail, 3idiots) and submit a psychological report for the same. It should be done in a practical file.

- i. Introduction
- ii. About the Movie
- iii. Psychological Themes
- iv. Behaviour Analysis
- v. Emotions and Mental Health

- vi. Psychological Concepts Used
- vii. Personal Learning
- viii. Conclusion
- ix. Bibliography

**Watch a documentary on Arunachal Pradesh tribe and throw light on its cultural differences, personality differences and emotional intelligence.**

**3. Section- C**

- i.** Try to do yoga and meditation and Avoid using phone for one day. Write your observations about these experiences in 100-200 words.
- ii.** Conduct an experiment on any of the psychological topics (infants, old age, adolescent issues etc) it should include Independent variable, dependent variables, control variables, and extraneous variables.

BHAVDIYA PUBLIC SCHOOL