

BCM School, Basant City, Pakhowal Road, Ludhiana
Summer Break Holiday Homework (2026-27)
Grade XI Non Medical

PHYSICS

1. Assignment

An assignment consisting of 20 questions (covering all varieties of examination-based questions) will be provided.

2. PPT Presentation

Prepare a PowerPoint Presentation of 12–15 slides on any one of the following topics:

1. Forces in Balance: The Art of Resolution of Forces

(Applications of resolution of forces in daily life)

2. Vector Fusion: Understanding Composition of Vectors

(Applications of vector addition in physics and real life)

3. Newton in Action: Understanding the Laws that Govern Motion

(Real-life applications and analysis of Newton's Laws of Motion)

4. Riding the Curve: Science of Circular Motion

(Centripetal force, banking of roads, satellites and amusement rides)

5. Momentum Matters: The Physics of Impact and Motion

(Impulse and conservation of momentum in sports, rockets, collisions and safety devices)

CHEMISTRY

Task 1: Chemistry in Daily Life Project

Theme: Chemistry Around Us

Choose any one topic:

- Role of chemistry in food preservation

- Chemistry behind cosmetics and perfumes
- Chemicals used in household cleaning products
- Chemistry of medicines and antibiotics
- Chemistry in agriculture (fertilizers/pesticides)

Submission Format: PPT / Infographic / Project File

Include:

- ✓ Introduction
- ✓ Scientific explanation
- ✓ Uses and advantages
- ✓ Harmful effects (if any)
- ✓ Conclusion with suggestions

Task 2:

Solve NCERT questions of chapters done in class in a separate notebook.

Task 3:

Make a A4 size chart on any one element of periods table, containing important information regarding that element like its discovery, uses, sources, etc.

Task 4:

Prepare a “Chemistry Formula Handbook” containing all important formulas, constants, and definitions learned.

MATHEMATICS

Q1. if set $A \subset B$. then, find the value of (i) $A \cup B$ (ii) $A \cap B$.

Q2. Let $n(A) = m$ then, find the no. of subset of set A, which are non-empty.

Q3. Let $n(A) = p$ and $n(B) = q$, then find the no. of subsets of $A \times B$ also no. of subsets which are non empty.

Q4. Let no. of elements in set A are 3, then find the no. of subsets of $A \times A \times A$, which are non-empty.

Q5. Find the domain and range of the following functions

(i) $-\sqrt{x - \frac{3}{2}}$ (ii) $\sqrt{x + 4}$ (iii) $\sqrt{81 - x^2}$ (iv) $\sqrt{x + 1}$ (v) $\sqrt{x^2 - 9}$

(vi) $|x + 7/2|$ (vii) $-|x + 7|$ (viii) $|x - 17|$ (ix) $-|x - 2|$

Q6. Evaluate the following :

(i) $\sin \frac{\pi}{12}, \cos \frac{\pi}{12}, \tan \frac{\pi}{12}, \cot \frac{\pi}{12}, \sec \frac{\pi}{12}, \operatorname{cosec} \frac{\pi}{12}$

(ii) $\sin \frac{\pi}{8}, \cos \frac{\pi}{8}, \tan \frac{\pi}{8}, \cot \frac{\pi}{8}, \sec \frac{\pi}{8}, \operatorname{cosec} \frac{\pi}{8}$

Q7. Prove that:

(i) $\sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ = \frac{3}{16}$

(ii) $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ = \frac{1}{16}$

(iii) $\cos 10^\circ \cos 30^\circ \cos 50^\circ \cos 70^\circ = \frac{3}{16}$

(iv) $\cos \frac{\pi}{7} \cos \frac{2\pi}{7} \cos \frac{4\pi}{7} = -\frac{1}{8}$

(v) $\frac{\sec 8x - 1}{\sec 4x - 1} = \frac{\tan 8x}{\tan 2x}$

(vi) $\sqrt{2 + \sqrt{2 + \sqrt{2 \cos 4x}}} = \cos 2x$, where $0 < x < \frac{\pi}{4}$

(vii) If $x + y + z = 2\pi$, then find the value of $\tan \frac{x}{2} + \tan \frac{y}{2} + \tan \frac{z}{2}$

(viii) If $A = \sin^2 x + \cos^4 y$ then find the range of A

(ix) Find the solution $2 \cos^2 \frac{x}{2} \sin^2 x = x^2 + x^{-2}$, x lies in first quadrant.

(x) Find the value of $\sqrt{3} \operatorname{cosec} 20^\circ - \sec 20^\circ$

(xi) Solve $\tan x + \sec x = 2 \cos x$, x lies in $[0, 2\pi]$

(xii) Evaluate $3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6 x + \cos^6 x)$.

ENGLISH

To promote critical thinking, creativity, and independent learning by exploring literary texts, themes, or current social issues using language skills (reading, writing, speaking, and presentation).

1) Project Topics

1. Book Review / Literary Analysis

Choose a novel, play, or collection of short stories or poems. Write a book REVIEW OF THE SAME ON A4 size sheet which must include -

Analyze: Plot Characters Themes

Style and tone

Your personal opinion

Example: "The Diary of a Young Girl" by Anne Frank or "To Sir, With Love" by E.R. Braithwaite.

2. Biographical Study

Research and write about a famous literary figure (author or poet). Include: Life history Major Works Writing style

Influence on literature

Example: Rabindranath Tagore, Ruskin Bond

3. Theme-Based Project

Choose a theme like:

Gender equality Climate Change Mental health Technology in modern life

Collect articles, poems, short stories, and visuals related to that theme and write your reflections in 120 words

2) Project Format:

Your project should include:

Cover Page (with title, name, roll number, class, and school) Index / Table of Contents

Acknowledgement Introduction Main Content / Research / Analysis Conclusion

Bibliography Appendix (if needed)

3) Presentation Guidelines:

Word limit: Around 200-250 words.

Medium: Neatly handwritten or typed

Visuals: Use pictures, graphs, or charts to enhance appeal. Originality: Avoid copying

4) Oral Presentation

Be prepared to give a 3–5-minute presentation of your project in class.

Talk about what you did, what you learned, and your experience doing the project.

PHYSICAL EDUCATION

Practical-1:

Fitness tests administration.

Practical-2:

Procedure for Asanas, Benefits

& Contraindication for any five Asanas for each lifestyle disease.

Practical-3:

Any one game of your choice out of the list above. Labelled diagram of field & equipment (Rules, Terminologies & Skills).

- PROJECT FILE ON IPL 2026.

- MINIMUM 20 PAGES

INFORMATICS PRACTICES

Write Python programs for the following problem statements in IP Register

1. Write a Python program to accept student details such as name, age, class, and percentage from the user and display them properly.
2. Write a Python program to input two numbers and perform addition, subtraction, multiplication, and division.
3. Write a Python program to calculate the area of a circle, rectangle, and triangle using user input.

4. Write a Python program to convert temperature from Celsius to Fahrenheit and Fahrenheit to Celsius.
5. Write a Python program to swap two numbers entered by the user.
6. Write a Python program to check whether a number is even or odd.
7. Write a Python program to check whether a person is eligible for voting or not.
8. Write a Python program to check whether a number is divisible by both 5 and 11.
9. Write a Python program to convert rupees into dollars.
10. Write a Python program to calculate the area and circumference of a circle.

MUSIC

Students have to prepare the project file.

Guidelines for preparing file.

1. Practical file should be hand written.
2. File should be presented neatly.

Contents for project will be

1) Talas along with single, double, tigan, chogun

- Teen Tala
- Ek Tala
- Char Tala

2) Ragas: Full description and Notation

- Bhairavi

- Bhimpalasi

3) Students will prepare a creative collage and painting on chart paper using pictures of Indian music instruments and famous vocal artists.

HAPPY HOLIDAYS

KATHAK

Draw pictures on A2 sheet

1. Ruchika - Kathak girl images
2. Mannat - Kathakali
3. Sanjana - Bharatanatyam
4. Gurleen - Kuchipudi
5. Kiranjot - Manipuri
6. Lovenoor - Odissi
7. Shrishti - Mohiniattam
8. Manpreet - Sattriya
9. Mandeep - Asamyukta Hasta Mudras
10. Tanvi - Samyukta Hasta Mudras
11. Namanjot - Chart of शिरो भेद

Instructions:

1. Use A2 size sheet only.
2. Work should be neat, colorful, and labeled properly.

3. Write your name, class, and roll no. at the bottom of the sheet.

Acknowledgment:

This homework is compulsory. Submit on the first day after holidays.

Happy Holiday and Happy Learning!!

PSYCHOLOGY

Dear Students,

Complete the following holiday homework neatly and sincerely to enhance your understanding of psychological concepts and practical skills.

Part A: Case Profile

Prepare one detailed Case Profile using Observation, Interview, and Psychological Testing on the topic allotted by the teacher.

Case Profile should include:

1. Introduction
2. Objectives
3. Identification Data
4. Observation Report

5. Interview Schedule
6. Psychological Assessment
7. Analysis and Interpretation
8. Suggestions
9. Conclusion
10. Bibliography

Part B: Revision Work

Revise the following chapters thoroughly from the NCERT Psychology textbook and Notes.

Chapter 1 - Understanding Psychology

Chapter 2 - Methods of Enquiry in Psychology

Chapter 3 - Human Development

Important Note

A written test based on Chapters 1 to 3 will be conducted immediately after the summer break. Students are advised to revise all chapters thoroughly and come well prepared.

Instructions

- All work must be handwritten.
- Maintain neatness and proper presentation.
- Use proper headings and margins.
- Submit the completed holiday homework after the summer vacation.

Happy Holidays and Happy Learning! 🇮🇳

PAINTING

INSTRUCTIONS-

- ALL 2 Projects of Holidays H..W are compulsory.
- Work should be Presentable and neat, only presentable work should be accepted.

Project 1 -Make 1 Landscape on A2 sized sheet,1 Still -Life sheet on A2 sized sheet,1 Composition on A2 sized sheet.

Project 2- Make a beautiful Assignment file with pictures on any topic from your syllabus/chapter(1 to 7)choose any one.

YOGA

🌸 practical File

👉 Surya Namaskar

👉 Five Asana

👉 Two Pranayam

👉 Two Bandh

👉 Two Mudra

🌸 prepare a project file your favourite Asana & Pranayam