# BANASTHALI PUBLIC SCHOOL

## SUMMER HOLIDAY HOMEWORK, SESSION 2024-25

**Circular No. BPS/24-25/13(XI Sci.)** **Date: 24.05.2024**

## CLASS – XI (SCIENCE)

**The summer days are back again!!**
**And its vacation time again!**
**There's sun and shade**
**And water to wade**
**Time for some fun and frolic**
**With ice creams to lick**
**Activities to indulge in**
**Places to explore**
**Yes!! It's vacation time again!!!**


**Dear Parents**

We believe children are natural learners and have an innate curiosity. They take pleasure in discovery. Hence, we have made an endeavour to induce and enhance thinking skills in them by making them be actively doing things for themselves. Through a lot of physical activity, movement, exploring and first-hand learning by doing things on their own, we facilitate that their learning goes into their long-term memory. We are sure you are there with us in this endeavour of ours.

**SUMMER VACATION** of the Session 2024-25, for the students of **CLASS XI** will commence from **27th May 2024 (Monday) to 30th June 2024 (Sunday)**. The classes will resume from **01st July 2024 (Monday)** onwards. However, the **school office** will remain open from **8:30 a.m. to 12:30 p.m**. on all working days during summer vacation.

**Dear Student**

Summer vacation is that time of the year when we have the time of our life. We relax, spend time with our family and friends and visit places galore. It's also the time to explore our talents, learn new skills and engage in different activities.

Some suggestions to make the summer break time more special and exciting for you.

1. Learn a new sport or skill and engage in physical activities.
2. Learn dignity of labour by doing things yourself.
3. Plant a sapling and take care of it.
4. Spend quality time with your family members.

**GENERAL INSTRUCTIONS:**

1. Complete the C.W./H.W. of all the subjects, in the respective subject notebook in neat and clean Handwriting, if still pending.
2. Holiday Homework will be a part of Internal Assessment. It must be done properly according to the instructions given by the teachers. Beautiful and systematic work will carry extra marks.
3. After summer vacation, the Summer Holiday Homework Notebook/Scrapbook/Project File/Lab Manuals (which-ever applicable) must be submitted in the School for Internal Assessment.
4. Parents kindly make sure your ward completes all the work assigned. Work to be done on regular basis.
5. Do project work of all subjects in respective Notebook provided in the Book set.

# Wishing every child, constructive holidays!

<table>
<tr><th>Subject Name</th><th>Details</th></tr>
<tr><td>English</td><td>Complete the Assignment given in <u>Annexure I</u> in class work register.</td></tr>
<tr><td>Physics</td><td>Complete the Assignment given in <u>Annexure II</u> in class work register.</td></tr>
<tr><td>Mathematics</td><td>Do MCQs, Assertion Reason and Case Study in assignment notebook of the following Chapters:<br>(a) Ch. 1: Sets (b) Ch. 2: Relations and Functions<br>(b) Ch. 5: Linear Inequality<br><u>Lab Manual Activities</u><br>Complete the Lab manual activities in Lab Manual:<br>(a) To represent theoretic operations using Venn diagram.<br>(b) To verify that for two sets A and B n(A × B) = pq and the total numbr of relations from A to B is $2^n$</td></tr>
<tr><td>Computer Science</td><td>Complete Unsolved Book Exercise of Chapter 3 & 4 in Class Register.<br><u>Project/ Practical Work</u><br>Note: Create a power point presentation and printed project file containing detailed description & working of project with the help of screen shots of code and output as well.<br>Font Style: Times New Roman<br>Font Size(Content): 14, Font Size(Headings): 16/18
<table>
<tr><th>S. No</th><th>Topic</th><th>Roll. No.</th></tr>
<tr><td>1.</td><td>Quiz Application: Build a quiz application that presents questions to users and evaluates their answers. You can have multiple-choice questions, true/false questions, and even include a scoring system.</td><td>(1 to 7)</td></tr>
<tr><td>2.</td><td>Visitor management system app for a school: It involves creating a mobile application that facilitates the check-in and check-out process for visitors, provides essential information to school staff, and ensures the security of students and faculty.</td><td>(8 to 15)</td></tr>
<tr><td>3.</td><td>Game Development with Pygame: Create games using the Pygame library. You can start with simple games like Pong, Snake, or Tetris, and then explore more complex game development concepts like collision detection, game physics, and AI opponents.</td><td>(6 to 21)</td></tr>
<tr><td>4.</td><td>School Timetable Generator: Develop a program to generate school timetables for different classes and subjects. The program should take inputs such as available classrooms, teachers' schedules, and subjects, and generate optimized timetables without clashes.</td><td>(22 to 24)</td></tr>
<tr><td>5.</td><td>Student Feedback System: Design a system for collecting feedback from students about their classes, teachers, and school facilities. Students can anonymously submit feedback, and administrators can view and analyze the feedback to make improvements.</td><td>(25 to 28)</td></tr>
<tr><td>6.</td><td>School Bus Tracking System: Create a system to track school buses and ensure the safety of students during transportation. Parents and school administrators can track the real-time location of buses, receive notifications for arrivals and departures, and view historical route data.</td><td>(29 to 35)</td></tr>
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<tr><td>Biology</td><td>Complete the Assignment given in <u>Annexure III</u> in concerned class work register as directed in the Annexure.</td></tr>
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| **Physical Education** | Learn & Revise the whole syllabus covered in the class so far.<br>**Practical Work**<br>Write Practicals 1 to 3 in the lab manual. Draw/ Paste neat diagrams also in the Practicals.<br>**Practical 1**: Labelled diagram of 400m track & field with computations.<br>**Practical 2:** Describe changing trends in Sports & Games in terms of changes in playing surface, Wearable gears, equipment, technological advancements.<br>**Practical 3:** Basketball is IOA recognised Sport/Game. Make a Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills. |
| **Chemistry** | **Theory-Assignment**<br>**1.** Define molecule of an element and molecule of a compound with four examples each.<br>**2.** What will be the mass of one atom of C-12 in grams?<br>**3.** Calculate the mass percent of calcium, phosphorus and oxygen in calcium phosphate $Ca_3(PO_4)_2$.<br>**4.** 45.4 L of dinitrogen reacted with 22.7 L of dioxygen and 45.4 L of nitrous oxide was formed. The reaction is given below:<br>$2N_2(g) + O_2(g) \rightarrow 2N_2O(g)$<br>Which law is being obeyed in this experiment? Write the statement of the law?<br>**5.** If two elements can combine to form more than one compound, the masses of one element that combine with a fixed mass of the other element, are in whole number ratio.<br>**(a)** Is this statement true?<br>**(b)** If yes, according to which law?<br>**(c)** Give one example related to this law.<br>**Project Work**<br>**1.** Prepare an Investigatory project on any topic from NCERT.<br>**2.** All solved examples, in text and text questions of chapter 1 and 2 from NCERT book to be done in separate register.<br>**3.** Show the positive aspects of chemistry on the following:<br>**(a)** Environment **(b)** Pollution **(c)** Marine life<br>**(d)** Flora and fauna **(e)** River **(f)** Eating habits |
| **Hindi** | **1. निम्नलिखित विषयों में से किसी एक विषय पर आकर्षक परियोजना तैयार करें:**<br>**(क)** हिंदी साहित्य का इतिहास **(XI A)**<br>**(ख)** हिंदी भाषा का क्रमिक विकास **(XI D, Roll No.: 1 - 12)**<br>**(ग)** मुंशी प्रेमचंद **(XI D, Roll No.: 13 - 23)**<br>**(घ)** वरिष्ठ नागरिकों की समस्याएँ एवं समाधान **(XI C)**<br>**2.** अपने आस-पास के किसी पार्क में जाकर अपने द्वारा किए गए वृक्षारोपण एवं उसकी देखरेख के अनुभवों का सचित्र वर्णन करें।<br>**3. निम्नलिखित विषयों पर सारगर्भित लेख लिखें:**<br>**(क)** मिट्टी तेरे रूप अनेक<br>**(ख)** आधुनिकता की दौड़ में पीछे छूटते जीवन मूल्य<br>**4.** प्रथम इकाई परीक्षा का पाठ्यक्रम याद करें। |
| **Gen. Comp.** | Create a Project File which covers the following topics with explanation in brief and paste or draw related pictures in interleaf project file:<br>**(a)** Basic Components of Computer System **(b)** Input-Output Devices<br>**(c)** Computer Memory **(d)** Software & its types |
| **Gen. Studies** | Make a Project File (Interleaf) of 10-15 Pages on the topic given below as per your Roll No.:<br>**(a)** New Technologies in Agriculture to save Environment. **(Roll No.: 1-17)**<br>**(b)** Role of Science & Technology which makes human life easier. **(Roll No.: 18-35)** |

## ASSIGNMENT – ENGLISH ANNEXURE- I

Dear Adventurous Scholars,

Prepare to embark on an exhilarating journey of creativity, exploration, and discovery! Your summer holiday homework for the academic session 2024-25 has been carefully crafted to ignite your imagination, enhance your skills and expand your knowledge in English. Brace yourselves for an unforgettable adventure into the realms of literature, art and current affairs.

**I. I. AIL (Art Integrated Projects): Illuminate Your Imagination**

Get ready to dive into the heart of literature and society through captivating projects that blend artistry with academics.

**Project Guideline:**

The Project-Portfolio may include the following:

- Cover page, with title of project, school details/details of students.
- Statement of purpose/objectives/goals
- Certificate of completion under the guidance of the teacher.
- Students Action Plan for the completion of assigned tasks.
- Materials such as scripts for the theatre/role play, questionnaires for interview, written assignments, essays, survey-reports and other material evidence of learning progress and academic accomplishment.
- The 800-1000 words Essay/Script/Report.
- Student/group reflections.
- If possible, Photographs / Drawings that capture the positive learning experiences of the student(s)
- List of resources

**TOPIC 1 -** Flip Book **(Roll No.: 1-12)**

• On different types of boats and ships used by Indian Defence Forces. Mention their functions as well as their role in different wars

**TOPIC 2 -** Travelogue/ Brochure **(Roll No.: 13-24)**

• Prepare a brochure on Lakshadweep islands inviting the visitors. Highlight the major tourist spots and other attractions to allure the visitors

**TOPIC 3 -** Comic Strip **(Roll No.: 25-30)**

• Design a comic strip bringing out the theme of 'A Photograph'.

**II. BBC Assignment:**

1. Pg. No.:135-140 (Poster)
2. Pg. No.:157-161 (Classified Advertisement)
3. Pg. No.:246-249 (Tenses)

## ASSIGNMENT – PHYSICS ANNEXURE- II

**Q1.** If the unit of force is 1 KN, unit of length 1 km and the unit of time is 100s, what will be the unit of mass?

**Q2.** Write two physical quantities having dimensions $[ML^{-1}T^{-2}]$.

**Q3.** Can there be a physical quantity that has no units and no dimensions.

**Q4.** Can a body have zero velocity still be accelerating?

**Q5.** Given a=2t+5.Calculate the velocity of the particle after five sec if it starts from rest.

**Q6.** A body initially at rest is moving with uniform acceleration 'a'. Its velocity after n seconds is 'v'. Find displacement of the body in last 2 sec.

**Q7.** If the first one third of a journey is travelled at 20 km/h, next one third at 40 km/h and the last one third at 60 km/h. Find the average speed of whole journey.

**Q8.** From the top of a tower 100 m in height a ball is dropped and at the same time another ball is projected vertically upwards from the ground with velocity of 25 $ms^{-1}$. Find when and where the two balls will meet. Take g = 9.8 $ms^{-2}$.

**Q9.** Show that a given gun will shoot three times as high when elevated at an angle of 60°as when fired at angle of 30° but will carry the same distance on a horizontal plane.

**Q10.** The surface tension of water is 72 dyne/cm. Express it in S.I units dimensions only.

**Q11.** The frequency 'v' of vibration of a stretched string depends upon_____.

**(a)** its length **(b)** its mass per unit

**(c)** the tensions T in the string obtain dimensionally, an expression for frequency

**Q12.** State in the following cases: whether the motion is one, two or three dimensional.

**(a)** a kite flying on a windy day.

**(b)** a speeding car on a long straight highway

**(c)** a carom coin rebounding from the side of the board.

**(d)** an insect crawling on a globe.

**(e)** a planet revolving around its star.

**Q13.** On a two lane road, car 'A' is travelling with a speed of 36k/h.
Two cars 'B' and 'C' approach car 'A' in opposite directions with a speed of 54k/h each. At a certain instant when the distance AB is equal to AC both being 1km, 'B' decides to overtake 'A' before 'C' does. What minimum acceleration of car 'B' is required to avoid an accident?

**Q14.** A projectile can have the same range R for two angles of projection. If $t_1$ and $t_2$ be the time of flight in the two cases, then prove that:

$$t_1 t_2 = 2R/g.$$

**Q15.** Two vectors, both equal in magnitude, have their resultant equal in magnitude of the either. Find the angle between the two vectors.

## Project Work

1. Make a project on given topic discussed in class.
2. Bring an idea for a working model (in writing for the Science exhibition)

**Topic: Nano Technology**

Sub Topic**:** **(a)** Transport and communication **(b)** Health and Hygiene
**(c)** Sustainable Management **(d)** New Techniques in Agriculture
**(e)** Mathematical Modelling **(f)** Technique to save environment

## ASSIGNMENT – BIOLOGY ANNEXURE- III

**Q1.** Nostoc and Anabaena have specialised cells called heterocyst. What is the function of these cells?

**Q2.** Which group consists of single cell eukaryotes only?

**Q3.** How are bacteria classified on the basis of their shapes?

**Q4.** Why are red tides caused and why they are harmful?

**Q5.** What is the role of Carlous Linnaneous in classification system?

**Q6.** Where do we find plasmid? State the function of plasmid.

**Q7.** Golgi bodies remains in close association with Endoplasmic reticulum. Give reason?

**Q8.** Euglena are mixotrophic. Why? Also identify the outer layer of Euglena.

**Q9.** Draw well labelled diagrams of the following: -

**(a)** Prokaryotic bacteria, **(b)** Mitochondria, **(c)** Chloroplast, **(d)** Euglena

**Q10.** On the basis of position of centromere, explain different types of chromosomes. Also draw the well labelled diagram for the same.

## Activity

Prepare a detailed research paper, ppt and spiral bound file from the topic of your choice.

## Lab Manual

Complete 7 experiments from Section A and 3 spotting from Section B. Leave Observation table blank. It will be filled in the school lab (When school reopens).

## Project Work

Make a project on the given topic discussed in class
Bring working /Non- working model (For the science exhibition)
Topics:

**(a)** Exploring the intersections of science and society
**(b)** Cancer (Representation of cells, tumours, and treatment mechanisms)
**(c)** Sustainable Management.
**(d)** Indigenous development in the field of Health and hygiene.
**(e)** Genetically engineered mouse models.
**(f)** Technique to save environment.

## SYLLABUS FOR UNIT TEST-I, SESSION: 2024-25

| | |
|---|---|
| **ENGLISH** | **English Literature:**<br>**Book: Hornbill:** **Ch. 1:** The Portrait of a Lady **P-1-** A Photograph<br>**Book: Snapshot:** **Ch. 1:** Summer of a Beautiful White Horse<br>**Reading:** Unseen Passage (Case Based),<br>**Grammar & Writing Skills:**<br>Classified Advertisements, Reordering of sentences, Gap Filling, Tenses. |
| **MATHEMATICS** | **Ch. 1:** Sets<br>**Ch. 2:** Relations & Functions<br>**Ch. 5:** Linear Inequalities |
| **PHYSICS** | **Ch. 1:** Units and Measurements<br>**Ch. 2:** Motion in a Straight Line<br>**Ch. 3:** Motion in a Plane (till Pg. No.: 38 -NCERT) |
| **CHEMISTRY** | **Ch. 1:** Some Basic Concepts of Chemistry<br>**Ch. 2:** Atomic structure |
| **BIOLOGY** | **Ch. 1:** The Living World<br>**Ch. 2:** Biological Classification<br>**Ch. 8:** Cell: The Unit of Life |
| **COMPUTER SCIENCE** | **Ch. 1:** Computer System Organisation<br>**Ch. 2:** Data Representation and Boolean Logic<br>**Ch. 3:** Getting Started with Python<br>**Ch. 4:** Python Programming Fundamentals ( Programming concepts only ) |
| **HINDI** | **आरोह(गद्य खंड): पाठ 1.** नमक का दारोगा **पाठ 2.** मियाँ नसीरुद्दीन<br>**आरोह(काव्य खंड):**<br>**पाठ 1.** हम तौ एक(कबीर) एक करि जाना-<br>**पाठ 2.** मेरे तो गिरधर गोपाल दूसरो न कोई (मीरा)<br>**वितान (पूरक पुस्तक): पाठ 1.** भारतीय गायिकाओं में बेजोड़ (लता मंगेशकर)<br>**अभिव्यक्ति और माध्यम : पाठ 1.** जनसंचार माध्यम<br>**रचनात्मक लेखन-** सारगर्भित लेख, अपठित गद्यांश |
| **PHYSICAL EDUCATION** | **Ch. 1:** Changing Trends & Career in Physical Education<br>**Ch. 2:** Olympism Value Education<br>**Ch. 3:** Yoga |