

SRI GURU HARKRISHAN PUBLIC SCHOOL, DUGRI ROAD, LDH

SUMMER BREAK ASSIGNMENTS (2025-26)

CLASS XI



Dear Parents

Greetings !!!

As already intimated, the Summer Break is scheduled from **2nd June 2025 till 5th July 2025**. Summer Vacation has always been considered to be the most desirable period looked forward by children; when they can go beyond academics and embark on a journey of fun and adventure by reading books, exercising, meditating, and channelizing one's energy in a positive manner.

The Summer Break Assignments are designed in such a way that the students will learn by doing. The parents are requested to help the students in completing all the Assignments in a neat and clean handwriting. These assignments carry weightage so it is important for everyone to deposit them immediately after the Summer Break gets over.

We wish everyone a wonderful and well deserved Summer Break! May it be filled with relaxation, fun and creating cherished memories.

HAPPY SUMMER BREAK !!!



Regards  
Principal

# **HOLIDAYS HOMEWORK**

## **Grade (XI)**

### **Subject – Physics**

#### **Project Work: Physics Around You**

- **Suggested Topics (Choose any 1):**
  - **Physics of Sports (e.g., football, cricket)**
  - **Physics in Musical Instruments**
  - **Applications of Newton's Laws in Real Life**
- **Task: Create a short project (6–8 pages) with pictures, explanations, and real-life examples.**
- **Objective: Apply physics to daily life and enhance creativity.**
- **Deliverable: A handwritten project report with creativity**

#### **2. Physics on Screen**

- **"Fact or Fiction?" – Movie Physics Analysis**
- **Task: Watch a sci-fi movie ( Interstellar, The Flash, Gravity, Avengers).**
- **Activity: Identify 3 scenes and analyze if the physics shown is real or exaggerated.**  
**Submission: PPT or short report with scenes.**

#### **3. Build Your Own Physics Toy**

##### **Options:**

- **Balloon-powered car (Newton's laws)**
- **Simple periscope (light reflection)**
- **Lifi model**
- **Any model of swing like roller coaster**
- **Water rocket (pressure)**
- **Or any other based on physics principle**

**Submission: Working model + video/photo + 1-page explanation of principles.**

## **Biology**

### **INVESTIGATORY PROJECT - As per C.B.S.E Guidelines**

**Scientific investigations involving laboratory testing and collecting information from other sources.**

**Project must cover the following:-**

- Cover page
- Index
- Certificate
- Acknowledgement
- Objective of project
- Content
- Experiments
- Bibliography/Webliography

**Guidelines for Project :-**

1. Project work should be done on A-4 project sheets in project file.
2. Text should be handwritten supported with relevant figures/ pictures/ diagrams etc.
3. Figures /Pictures etc should be on left side.
4. Starting from first page to concluding page , every related information should be presented in order.

5. There should be at least 10-12 pages in project excluding title (cover page), certificate, acknowledgement, index , bibliography.
6. Try to incorporate creativity and innovation.
7. Ensure timely submission of project work after reopening of the school.
8. Prepare your project file on topic as assigned below

Topic	Name
Analyse the mitosis in onion root tip cells	<b>Abhirami</b>
Leaf shape, venation and margin	<b>Kiranjit Kaur</b>
Various types of flowers based on aestivation	<b>Meenakshi</b>
Effect of exercise on pulse rate and blood pressure	<b>Mehakpreet Kaur</b>
Tissue systems in dicots and monocots	<b>Tarandeep Kaur</b>
Biomolecules	<b>Kiranjit</b>
Body fluids and circulation	<b>Charanpreet</b>
Effects of various factors(e.g. Temperature,pH,antibiotics) on the	<b>Palak</b>

growth and survival of microorganisms like bacteria or fungi	
Effects of different light conditions, nutrients or plant hormones on plant growth and development	<b>Jaskaran</b>
How different factors like temperature or pH affect enzyme activity(e.g., amylase in saliva or catalase in potato)	<b>Rasleen Kaur</b>
Effect of light on seed germination	<b>Siya</b>

- **Cover page should be like the sample shared (add school logo and your school name)**
- **Project report should be compiled in spiral binding.**
- **This project is for your final exams.**
- **Kindly prepare it with full matching standards and full dedication.**

**Task:-** Make a 3D working model of

- Human circulatory system
- Respiratory system
- Excretory system

**Materials:-** Cardboard base, strips , colourful paper, glue etc.

You can take help from the link given below:-

- <https://youtu.be/Zv5nvY9kuD4?si=HVTUeKPF0dAxEU0y>
- <https://youtube.com/shorts/19xd8mzG-Sw?si=i1mqj-scPuyLD63q>
- <https://youtu.be/zLW45KLaoSA?si=-bv98UODtC66X6WL>

**Outcome:-** Students will be able to develop observation ,analysis and model-building skills.

# CHEMISTRY

## TASK-1

1. RESEARCH AND PROJECT:- Prepare a investigatory Project on Emerging Technologies in chemistry by choosing any one of the following topics:-

- ☐ Nanozymes - Nanozymology
- ☐ Chemiluminescence
- ☐ VR enabled Modelling

SUBMISSION :- (i) The project should be relevant and creative.

(ii) Use A4 size coloured / white sheets

(iii) Write only on one side of sheet.

(iv) Follow the Sequence :-

(a) Acknowledgement

(b) Index

(c) Content

(d) Bibliography.

## TASK-2

2. PORTFOLIO:- Prepare a Portfolio on a topic- Collect 15 Samples of medicinal drugs from nearest medical store or from your home. Write the salts present in them and also classify them on the basis of Analgesics, Antibiotics, Tranquilizer's, Antiseptics and Antihistamines.

SUBMISSION :- (i) The Portfolio report can be handwritten/ typewritten with pictures.



- (ii) In case of typewritten, use fontsize 12.
- (iii) Write only on one side of sheet.
- (iv) Use A-4 size coloured/white sheets.

### TASK-3

#### 3. WORKING MODEL:-

- Design the 3-D working model of "Rutherford 's Model of an Atom".Roll numbers(1- 12)
- Make a 3-D working model of " Bohr's Model of an atom" .  
Roll numbers (13 onwards )
- REVISE THE SYLLABUS TILL DONE AND SOLVE THE  
ASSIGNMENTS THAT ALREADY SHARED IN CLASS GROUP.



## ENGLISH

Reading comprehension

Read anyone short Story from your English reader hornbill and Snapshots and write summary in 150 to 200 words.

Frame new vocabulary words with meanings.

Your personal opinion or lesson learned

Writing Skills

Write a debate or article on the topics given below

Social media boon or bane

Climate change and youth responsibility

Importance of reading in the digital age

Importance of mental health

Practice Five exercises from a grammar Book or workbook

Tenses

Determiners and Reordering of sentences

CLASS: 11

## MATHEMATICS

### LAB ACTIVITIES

Note-Do all the activities in your lab manual

#### Lab Activity 1

Objective: To find the number of subsets of a given set and verify that if a set has  $n$  number of elements, then the total number of subsets is  $2^n$ .

#### Lab Activity 2

Objective: To verify that for two sets  $A$  and  $B$ ,  $n(A \times B) = pq$  and the total number of relations from  $A$  to  $B$  is  $2^{pq}$ , where  $n(A) = p$  and  $n(B) = q$ .

#### Lab Activity 3

Objective: To identify a relation and a function.

#### Lab Activity 4

Objective: To find the values of sine and cosine functions in second, third and fourth quadrants using their given values in first quadrant.

#### Lab Activity 5

Objective: To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of  $\pi/2$  and  $\pi$ .

#### Lab Activity 6

Objective: To verify that the graph of given in equality, say  $5x + 4y - 40 < 0$ , of the form  $ax + by + c < 0$ ,  $a, b > 0$ ,  $c < 0$  represents only one of the two half planes.

#### Lab Activity 7

Objective: To construct a Pascal's triangle and to write binomial expansion for given integral exponent.

Lab Activity 8

Objective: To construct different types of conic sections.

Lab Activity 9

Objective: To explain the concept of octants by 3 mutually perpendicular planes in space.

Lab Activity 10

Objective: To write the sample space when a die is rolled once, twice, ..... .

### Assignment -PERMUTATIONS AND COMBINATIONS

1. Evaluate :  $4! - 3!$
2. How many 3-digit numbers can be formed by using the digits 1 to 9 if no digit is repeated.
3. How many chords can be drawn through 21 points on a circle?
4.  $n C 8 = n C 2$ , find  $n C 2$ .
5. There are  $N$  points on a circle, find the number of ways
  - (i) Triangles which can be formed

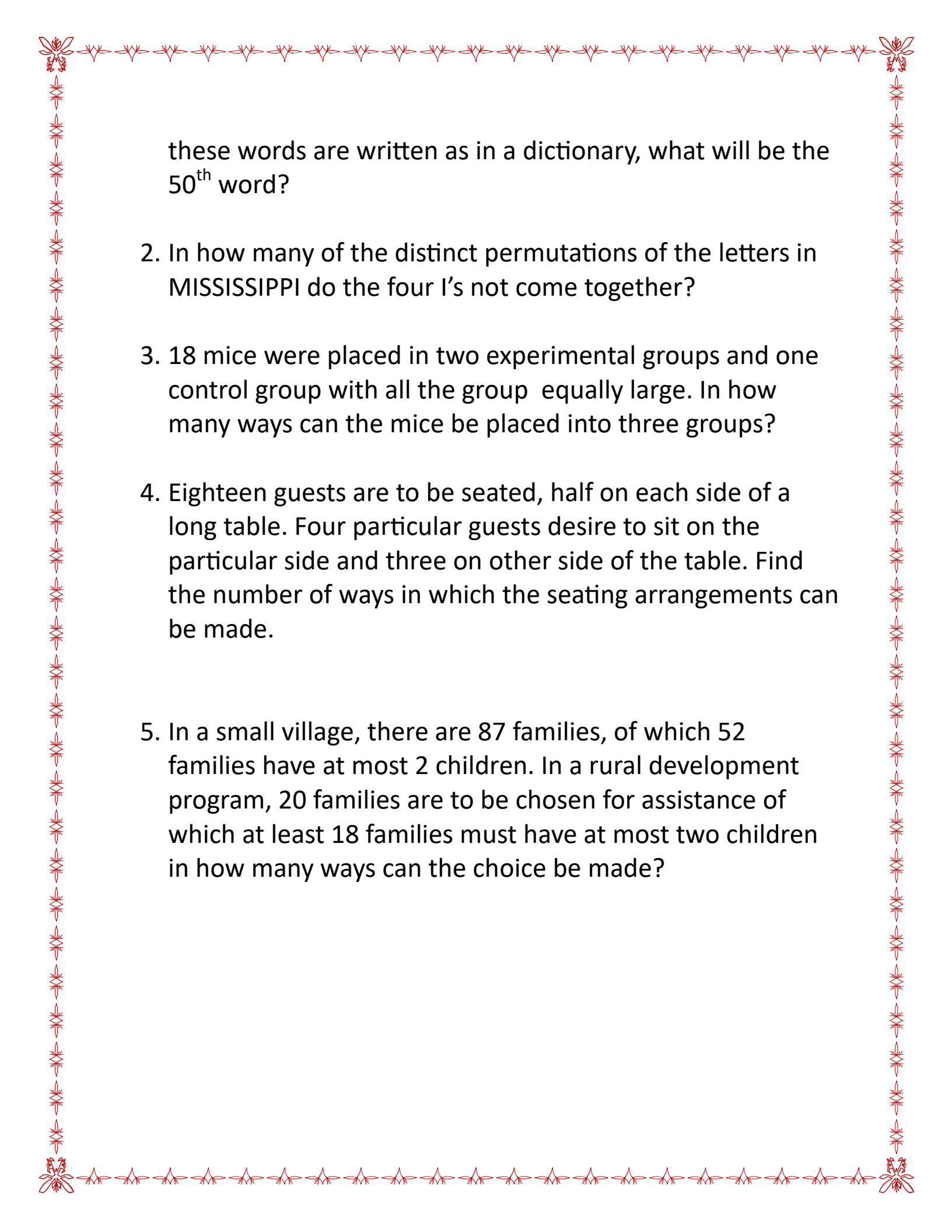
(ii) Lines which can be formed

Level II

1. How many 4-digit numbers that can be formed without the repetition of digits?
2. In how many ways can a student choose a programme of 5 courses if 9 courses are available and 2 specific courses are compulsory for every student?
3. In how many ways can the letters of the word ASSASINATION be arranged so that all the S's are together?
4. In how many ways a committee of 4 members be selected from 5 men and 4 women?
5. If  $M$  parallel lines in a plane are intersected by a family of  $N$  parallel lines, find the number of parallelogram formed.

LEVEL – III

1. Find the number of words with or without meaning which can be made using all the letters of the word AGAIN. If



these words are written as in a dictionary, what will be the 50<sup>th</sup> word?

2. In how many of the distinct permutations of the letters in MISSISSIPPI do the four I's not come together?
3. 18 mice were placed in two experimental groups and one control group with all the group equally large. In how many ways can the mice be placed into three groups?
4. Eighteen guests are to be seated, half on each side of a long table. Four particular guests desire to sit on the particular side and three on other side of the table. Find the number of ways in which the seating arrangements can be made.
5. In a small village, there are 87 families, of which 52 families have at most 2 children. In a rural development program, 20 families are to be chosen for assistance of which at least 18 families must have at most two children in how many ways can the choice be made?

## **Physical Education**

Complete your practical notebook

Practical 1 - fitness tests administration.

Practical 2- Procedure Asanas, benefits and its contradictions  
for any 2 asanas for each lifestyle diseases

Practical 3 - any one IOA recognised spots/games of choice.  
Labelled diagram of field and equipment's also mention its  
rules terminology and skills

Charts on -

Roll number - 1-5 Table tennis (Play field with the  
measurement)

Roll number - 6-10 table tennis (general rules)

Roll number - 11 - 15 Table tennis (fundamental skills)

Roll number - 16 - 20 Table tennis (defensive stocks )

Roll number - 21 - 25 Chart on body mass index BMI

Roll number - 26 -30 yoga( meditation asanas)

Roll number - 31 - 35 yoga (Yogic kriya's)