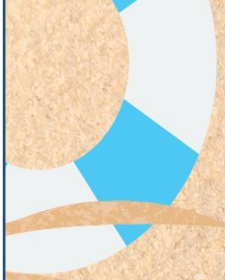
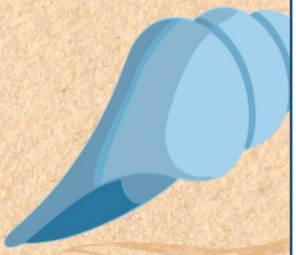
MOTHER INDIA PUBLIC SCHOOL

BAZPUR

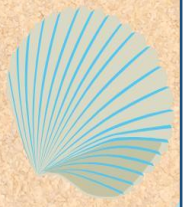




SUMMER

HOLIDAY HOMEWORK

ENJOY



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CLASS – XI SCIENCE

GUIDELINES

Wishing you a joyful and refreshing summer break!
May this holiday be filled with laughter, discovery, and quality time with loved ones. Take time to relax, explore your interests, and enjoy every moment.

Along with fun, use this time to engage in your holiday homework—designed to spark creativity, deepen understanding, and make learning enjoyable. Complete it with sincerity, originality, and pride.

Stay safe, stay curious, and come back recharged, ready for new beginnings!

PHYSICS

Total marks (25)

Time duration (10 hours)

Short answer type questions (20)

1. What is motion in one dimension?

2. Define displacement.

3. What is the difference between distance and displacement?

4. Define speed.

5. Define velocity.

6. What is the difference between average speed and instantaneous speed?

7. Define acceleration.

8. What is uniform acceleration?

9. What is non-uniform acceleration?

10. Write the equation for uniformly accelerated motion: $v = u + at$.

11. Derive the equation $s = ut + (1/2)at^2$.

12. Write the equation $v^2 = u^2 + 2as$.

13. What does the slope of a displacement-time graph represent?

14. What does the area under a velocity-time graph represent?

15. What does the slope of a velocity-time graph represent?

16. A car accelerates uniformly from rest to a speed of 20 m/s in 5 s. Calculate its acceleration.

17. A body is moving with an initial velocity of 10 m/s and acceleration of 2 m/s^2. Find its velocity after 5 s.

18. What is the difference between uniform motion and uniformly accelerated motion?

19. A particle is moving with a constant velocity. What is its acceleration?

20. Can the velocity of an object be negative? Explain.

2. Make a project file on given topics. (05)

Instructions.

1.Project file should be of at least 5 pages

2.Project file should contain pictures regarding your topic

3. Project file should contain name of scientists of whom research papers you're using for your project.

Sonam (units and measurements)

Amaan (units and measurements)

Vipul (units and measurements)

Kanishka (units and measurements)

Tiya (units and measurements)

Darshika (dimensions and their applications)

Umam (dimensions and their applications)

Rashida (dimensions and their applications)

Shikha (dimensions and their applications)

Jashan (dimensions and their applications)

Uditraj (vector quantities)

Ayush (vector quantities)

Shaziya (vector quantities)

Aksha (vector quantities)

Gurleen (vector quantities)

Waseem (differentiation and integration)

Himanshu (differentiation and integration)

Simran (differentiation and integration)

Jagdeep (differentiation and integration)

Alfisha (differentiation and integration)

Sara (motion)

Abhijot (motion)

Arbaz (motion)

Arshi (motion)

Harsh kumar (motion)

Jashanpreet kaur (projectile motion)

MATHEMATICS

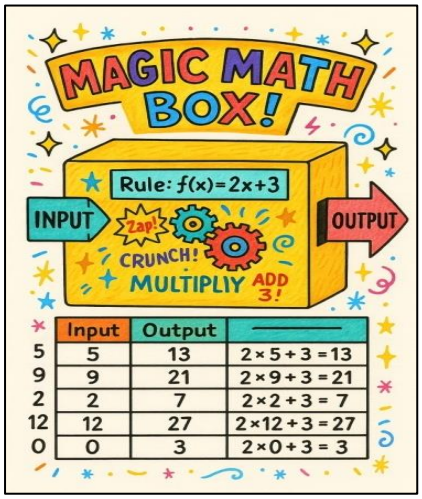
Time Duration: 4 hours

Assessment Criteria:
Cover page: (5 Marks)
Presentation + Creativity (10 Marks)
Content: (10 Marks)
1- Instagram-Style Slides: "Maths in Life"
Create a 5-slide digital post (like an Insta carousel):
1. Cover Slide: "Maths Around Me – Sets & Functions"
2. Slide 2: Sets in My Life (with photos or icons)
3. Slide 3: Venn diagram of my day (morning activities vs evening ones)
4. Slide 4: My Function Journey (e.g., "Wake-up time → energy level")
5. Slide 5: "Why Sets & Functions Matter"
Design using Canva, or PowerPoint.

2-Real-Life Maths Project (Creative Task)
Title: "Sets & Relations Around Me"
Objective: Explore how sets and relations are part of daily life.

Instructions:
Choose any three real-life contexts where sets are used (e.g., friend groups, shopping lists, hobbies, school clubs).
For each context: List the sets and their elements.
Find intersection, union, and complement if applicable.
Represent the sets using Venn Diagrams (draw or use online tools).
Explain one real-life relationship or function (like assigning each subject a teacher).
Presentation: Use A4 sheets or a scrapbook. Add pictures/drawings for creativity.
3-Make Your Own Function Machine

Craft Activity:
Use a shoebox or draw a diagram to make a "Function Machine".
Design a rule (e.g., f(x) = 2x + 3) , f(x) = x
2+ 2. Etc.
Input real-life numbers (like your birthdate digits or ages of friends) and show outputs.
Make it colourful and add fun labels like "Magic Math Box!"



	Input	Output	
5	5	13	2×5+3=13
9	9	21	2×9+3=21
2	2	7	2×2+3=7
12	12	27	2×12+3=27
0	0	3	2×0+3=3

4 -Mathematical Vision Board

Create a collage/poster about your personal goals and passions:

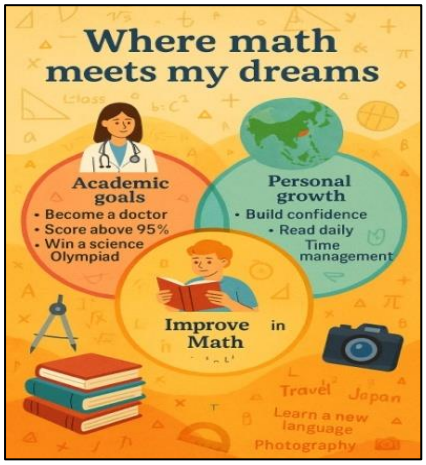
Use sets to group your dreams:

Set A: Academic goals

Set B: Personal growth

Set C: Fun & exploration Use intersections to show goals that overlap (e.g., travel + learning)

Write a small reflection: “Where math meets my dreams”



CHEMISTRY

Instructions:

1.Choose ONE topic from the list below.

2.Prepare any ONE of the following:

A short video (2–5 minutes) explaining or demonstrating the activity/project.

A project report or model with photos and explanations.

A scrapbook or handmade booklet with research, drawings, or activity steps.

3.Submit your work in digital or physical form .

4.Be creative, safe, and accurate. Mention materials used and explain the chemistry behind it.

How to start the video– first introduce yourself, e.g- your name, class, school name and then your topic name.

Marking scheme–

Content of the video– 05marks/ project file-05marks
Presentation of the topic –5 marks
Creativity – 5 marks
Link topic to the real life example – 5 marks
Introduction – 5 marks

Roll no– 1,8,15,22
Topic- Chemistry in Cosmetics
Project/Video Idea: Research ingredients used in shampoos, lotions, lip balms, etc. Activity: Make a natural lip balm or face scrub using home ingredients like beeswax, coconut oil, sugar, etc.

Roll no – 2,9,16,23
Topic- Bioplastics from Natural Products

Activity: Prepare biodegradable plastic from cornstarch and vinegar. Project: Compare it with normal plastic and present the environmental benefits.

Roll no– 3,10,17,24
Topic- Invisible Ink Chemistry
Activity: Use lemon juice, baking soda solution, or milk as invisible ink and reveal using heat or pH indicators. Project: Explain the chemistry behind these inks in a fun video format.

Roll no- 4,11,18,25
TOPIC- Chemistry Behind Perfumes and Flavours
Project/Video Idea: Explore natural sources of esters and their uses in perfumes and food flavouring. Add-on: Try creating a homemade scent using essential oils and alcohol.

Roll no- 5,12,19,26
TOPIC-Chemistry in Your Kitchen: Acids & Bases
Activity/Video Idea: Test the pH of kitchen items like lemon juice, baking soda, soap, vinegar, and saltwater using turmeric, red cabbage juice, or litmus. Project: Create a pH colour chart using natural indicators.

Roll no- 6,13,20,27
Topic- Carbon Compounds Around Us
Project Idea: Prepare a 3D model or video showing carbon compounds in daily life (sugar, alcohol, plastics, proteins, etc.). Activity: Make homemade glue (a polymer) using milk and vinegar.

Roll no- 7,14,21,28
TOPIC- Chemistry of Soft Drinks
Project: Study the composition of soft drinks—CO_2 content, acids, and sugar levels. Activity: Perform an experiment showing CO_2 release from soda using Mentos or by shaking and opening a bottle.

BIOLOGY

Chapters Covered:

1. Breathing and Exchange of Gases

2. Body Fluids and Circulation

3. Excretory Products and Their Elimination

Part A: Theory-Based Questions

1. Short Answer Questions: (5 Marks)

Define external respiration and internal respiration.

Describe the role of hemoglobin in oxygen transport.

Differentiate between open and closed circulatory systems.

What is the significance of the lymphatic system?

Define ultrafiltration in the nephron.

2. Long Answer Questions: (10 Marks)

Explain the mechanism of breathing in humans.

Discuss the cardiac cycle with suitable diagrams.

Explain the structure and function of the nephron.

Illustrate the oxygen dissociation curve and discuss the factors affecting it.

3. Diagram-Based Questions: (2 Marks)

Draw and label the human respiratory system.

Draw the structure of the human heart and label the chambers and valves.

Illustrate a nephron and label its parts.

Part B: Application-Based Questions

1. Case Studies: (3 Marks)

A person suffers from emphysema. Explain how this affects gas exchange.

Discuss the physiological changes occurring in the body during vigorous exercise.

2. Problem-Solving:

Calculate the cardiac output if the heart rate is 72 beats per minute and stroke volume is 70 mL.

A patient shows an increase in blood urea levels. What might be the possible reasons?

Part C: Practical Work and Projects

1. Lab Activity: (2 Marks)

Measure your pulse rate before and after exercise and record the difference.

2. Project Work: (3 Marks)

Prepare a comparative chart of different blood groups and their compatibility.

Create a model or diagram showing the mechanism of urine formation.

Submission Guidelines:

Use A4 sheets for written work.

Diagrams should be drawn using a pencil and properly labelled.

Mention your name, class, and roll number on the cover page.

The assignment must be submitted within the first week after the summer vacation.

PHYSICAL EDUCATION

Total Time Duration 11 Hrs

1. Calculation of Body Mass Index

Time Duration 3 Hrs

Marks Obtained- 05

Collect the data of Body Weight of subjects

Collect the data of Standing Height of subjects

Points to be describe-

History of Anthropometry.

History and usage of BMI.

BMI result chart.

Who invented BMI?

BMI formula.

2. Calculation of Waist-Hip-Ratio

Time Duration 3 Hrs

Marks Obtained- 05

Collect the Waist measurement of the subjects

Collect the Hip measurement of the subjects

Points to be describe-

History and usage of WHR.

WHR result chart.

Who invented WHR?

WHR formula.

Procedure of taking the measurement of Waist.

Procedure of taking the measurement of Hips.

3. Measurement of cardio-vascular fitness- Harvard step test

Time Duration 3 Hrs

Marks Obtained- 10

Collect the data by conducting the Harvard Step Test on subjects

Points to be describe-

Procedure of Harvard step test

Resting heart rate

Duration of exercise

How to calculate the pulse after 1 to 1.5 min

General instructions-

Write down the procedure of above mentioned tests.

Conduct the tests on at least 05 people.

Collect the samples and put in the standard scale of tests.

Mention the results and categorize the physical fitness level of subjects.

All the work should be done in Physical Education lab manual.

4. Explain the Shat-Karmas briefly in Lab Manual.

Time Duration 2 Hrs

Marks Obtained- 05

INFROMATION TECHNOLOGY

Make a report on Ms Word regarding Instagram post. What type of content have the highest reach in a month and along with that what time is that post uploaded and how it affects the engagement with the post and print a file of this report. Paste the report in your project file.

Required time for this homework is 20 – 30 minutes daily

Project work/file:

Guidelines for file:

The file should consist of Introduction page, Acknowledgement page, Index, and 6 to 8 pages of proper explanation.

Arts

Roll No – 1 to 7 Computer Organisation

Roll No – 8 to 14 Networking and Internet

Roll No – 15 to 21 RDBMS

Roll No – 22 to 29 Java Introduction

Commerce

Roll No – 1 to 6 Networking and Internet

Roll No – 7 to 12 Computer Organisation

Roll No – 13 to 18 Java Introduction

Roll No – 19 to 22 RDBMS

Science

Roll No – 1 to 6 RDBMS

Roll No – 7 to 12 Java Introduction

Roll No – 13 to 18 Networking and Internet

Roll No – 19 to 25 Computer Organisation

Marks Distribution:-

Neatness(05)

Proficiency(05)

On Time(05)

Accurate Data(05)

Personal effect(05)

HOME SCIENCE

Select two children of different ages from your neighbourhood and write report on their activities and behaviour. (10)

(Students you should select two children of same age from 5 to 6 years/ 10 to 11 years of age. Observe them and record their activities and behaviour and write the report. Report should cover all aspects of their various developmental characteristics (Emotional, Social, Cognitive, and Language) Follow the details given below:

Name
Father's name
Age

Class
School
Contact no
Schedule:

Breakfast Time	
Study Time	
Lunch Time	
Rest Time	
Home work Time	
Playing Time	

According to child schedule table can be changed.

ASSESSMENT OF DIFFERENT DOMAINS OF DEVELOPMENT

Emotional Development		Social Development		Cognitive Development		Language Development		Behavioural Development	
Expression of feelings	YES/ NO	Cooperation	YES/ NO	Solving of simple puzzle(add simple Puzzle)	YES/ NO	Participation in conversation and discussion	YES/ NO	Behaviour with parents	GOOD/AVERAGE/POOR
Using of any coping strategies (sucking thumb, holding a toy, any other)	YES/ NO	Sharing toys and other things with others	YES/ NO	Classification and organization of items in different groups	YES/ NO	Describe events in detail	YES/ NO	Behaviour with siblings	GOOD/AVERAGE/POOR
Understanding other feelings	YES/ NO			Can focus on task for longer periods	YES/ NO			Behaviour with peers	GOOD/AVERAGE/POOR

Assessment criteria
Presentation 5
Content 5
Make any one article from waste products. (5)

Assessment criteria

Material used :- 1

Appearance:- 2

Utility:- 2

Make a Pamphlet/ leaflet/ booklet on the Importance of Healthy Food choices. (10)

Guidelines for making leaflet/pamphlet/ booklet

A4 size sheet should be used

Handmade pictures should be added

No printout cutting is allowed

Assessment criteria

Content :- 2

Text and Graphics:- 2

Effectiveness:- 2

Visual appeal and design:- 2

Completeness of information:-2

NOTE: For queries can contact on 9997119599