# SUMMER VACATION

**JYANTI PRASAD DAV PUBLIC SCHOOL**
**GARHI JHANJHARA ROAD, GANAUR**
**(UNDER THE DIRECT CONTROL OF DAV CMC, NEW DELHI)**

## HOLIDAYS' HOMEWORK

## SESSION: 2025-26

## CLASS: XI SCIENCE

FOR ANY QUERY CONTACT: **0130-2450641, 9468043075**

A fully English medium and the best school in area for all round development of students.

## TOGETHER WE CAN

**FROM JUNE 01, 2025 TO JUNE 30, 2025**

*Dear parents*

*We wish you a very happy and fruitful time with your children. Summer vacation is the most awaited time for the students as they want to play, enjoy and relish with their friends, neighbours and relatives. This is a time for them to stay away from the mundane schedule of daily life. They want to enjoy it in leaps and bounds. But we request you to keep their energy channelised. You should be a part of their enjoyment but time and again a check is required. Now it's your responsibility to make them stay connected with their studies along with fun and frolic & encourage them to do their homework in a neat and tidy manner.*

### *Here are some of the suggested activities that you can do as a family:*

*1. Prepare a well-being plan for self.*

*2. Stick to routines or starting new ones.*

*3. Get up and go to sleep at regular times.*

*4. Help them explore new hobbies and interest.*

*5. Do karaoke, read, solve puzzles, play board games, etc.*

*6. Keep a gratitude journal. Writing down three things you are grateful for every day. Congratulate yourself and others on having a "MEGA DAY".*

*7. Take out time for Reading, Music, Dance, Singing, and Laughing.*

*8. Set Challenges- Encourage each other to take up new activities and complete them.*

*9. Be Creative with Space- Find a corner in the house and allow yourself and your children to decorate it.*

*10. Involve your children in household activities also.*

*11 Learn foreign languages through online courses available.*

*12. Take them for outing to place of their interest & let them explore the world.*

*13. Communicate with your children and let them know you fully.*

*As parents you are requested to keep a watchful eye on your children and stop them from engaging in :*

1. *Excessive use of mobile phones.*

2. *Playing online games*

3. *Spending a lot of time alone away from family members.*

Be Safe

*We're doing our homework to make sure we're prepared.* **- Gary Gait**

**Thomas A. Edison says** *"Genius is one percent inspiration and ninety-nine percent perspiration. As a result, a genius is often a talented person who has simply done all of his homework."*

## General Instructions:

1. *Do your Homework in a separate 3 in 1 notebook (classes 1 and 2) & cover it properly.*

2. *Do your Homework in separate 10 rs/- notebooks subject wise (classes 3 to 12) & cover it properly.*

3. *Mention your details on your holiday's homework.*

4. *Start your homework from very beginning of holidays to avoid stress and ensure high quality work as it has been assigned.*

5. *Dedicate a specific time each day on your homework.*

6. *Choose a dedicated area that is free from distraction to focus on your work.*

7. *Present your homework in a neat and logical manner.*

8. *Use clear handwriting, proper formatting and consistent spacing.*

## Note:

➢ **The best holiday homework of each class will be awarded.**

➢ **It is a part of internal assessment for the final examination.**

**Warm Regards**
**PRINCIPAL**

## SUBJECT-ENGLISH

**1.**Read the following carefully and make a question bank containing at least 100 questions to be used in '**Interclass Quiz Competition**'.

**Hornbill**:

Lesson 1-The portrait of a Lady

Lesson 2- We Are Not Afraid to Die..

Poem 1- A Photograph

**Snapshot:**

Lesson 1- The Summer of Beautiful White Horse

Lesson 2-The Address

**2.** Read lesson 'The Ailing Planet...'

and frame notes covering the whole detail given in the lesson.

**3.** On the basis of your reading (Mentioned in question 2), prepare yourselves for an Inter-class Debate Competition on the topic **'Are people to blame for global warming?'** to be held in July (tentative).

**4.** Prepare a poster on ' Unity Against Terrorism' on a chart.

**5.** Prepare a Presentation/lesson plan on '**Tenses**' including definition, types, usages with examples to be presented in class as speaking activity.

**6.** Draft an advertisement (Video) for the promotion of your school. You may work in a group of maximum 5.

The best one will be awarded.

**7.** Make a catchy detailed project on the life & success story of the Founders of the following: (At Least 18-20 pages)

Raymond (1-5)

Godrej     (1-10)

Jaguar     (6-15)

Infosys     (11-20)

Peter England     (11-25)

Oyo Rooms/Hotels     (21-30)

Lakme     (26-35)

Royal Enfield     (31-40)

Airtel     (36-40)

**Every student has to take two topics according to their roll numbers.**

**Note:**

Questions 1-3 are to be done in the Holidays Homework notebook.

Questions 5 & 7 are to be done on A4 assignment sheets in a presentable way. (Use good quality of Assignment sheets and files)

# PHYSICS

**Chapter 1: Units and Measurements**

1. Read Chapter 2 attentively, focusing on the definitions of units, systems of units, and the

importance of measurements in Physics.

**Find out 5 Assertion Reason based Questions.**

**Chapter 2: Motion in a Straight Line**

Read Chapter 2 thoroughly, understanding the concepts of motion in a straight line, uniform and non-uniform motion, and graphical representation of motion.

**Find out 5 Assertion Reason based Questions.**

**2. Problem-solving Practice:**

 - Solve numerical problems based on the equations of motion, covering scenarios of objects moving in a straight line with uniform acceleration.

 - Work through additional practice problems(**NCERT EXEMPLAR** )to strengthen your problem-solving skills in this chapter.

**3. Solve NCERT Exercise of chapter 2** 2.6,2.8,2.10,2.15,2.16,2.17,2.18

**Intext Examples-2.2,2.3,**

**Chapter -3 (Motion in a plane)**

**1.Read the chapter attentively and find out 5 Assertion Reason questions.**

**2.** Solve NCERT Exercise questions

3.6, 3.9, 3.10, 3.12, 3.13,3.17,3.18,3.19

**Intext Examples-3.2, 3.3, 3.4, 3.5, 3.7,3.8**

**Derive following derivations**

1.Discuss projectile motion. What are its characteristics? And derive expressions for path of projectile, time of flight , horizontal range , maximum height and velocity at any instant for angular and horizontal projectile.

2.Discuss analytical treatment of parallelogram law of vector addition.

**Do complete lab manual**

**List of experiments**

**Section -A**

1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.

2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.

3. Using a simple pendulum, plot its graph and use it to find the effective length of second's pendulum.

4..To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination θ by plotting graph between force and Sinθ.

Activities

1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.

2. To determine mass of a given body using a metre scale by principle of moments.

3. To study the variation in range of a projectile with angle of projection.

**Section -B**

1.To find the force constant of a helical spring by plotting a graph between load and extension.

2. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.

3. To study the relation between frequency and length of a given wire under constant tension using sonometer.

Activities

1. To observe change of state and plot a cooling curve for molten wax.

2. To observe and explain the effect of heating on a bi-metallic strip.

3.To study the factors affecting the rate of loss of heat of a liquid.

## CHEMISTRY

1.Complete lab manual as per prescribed curriculum.

2. Prepare project on the following topics as instructed-

> Waste to chemicals: Transforming wastes to energy , fuels and other useful chemicals. (odd roll no's)

> Environmental chemistry( even roll no's)

3.Learn and draw well labelled complete periodic table on chart

**4.** Solve the assignments based on chapter 1,2and 3 in separate thin notebook.

**ASSIGNMENT NO 1**

**1**. Electrons are emitted with zero velocity from a metal surface when it is exposed to radiation of wavelength 6800 Å. Calculate threshold frequency (vo) and work function (Wo) of the metal.

**2.** What is the wavelength of light emitted when the electron in a hydrogen atom undergoes transition from an energy level with n = 4 to an energy level with n = 7 ?

**3.** How much energy is required to ionise a H atom if the electron occupies n = 5 orbit? Compare your answer with the ionization enthalpy of H atom (energy required to remove the electron from n

=1 orbit).

**4**. (i) The energy associated with the first orbit in the hydrogen atom is-2.18 x 10-18 Jatom[1].
What

is the energy associated with the fifth orbit? (ii) Calculate the radius of Bohr's fifth orbit for hydrogen atom.

**5**. What is the energy in joules, required to shift the electron of the hydrogen atom from the first Bohr orbit to the fifth Bohr orbit and what is the wavelength of the light emitted when the electron returns to the ground state? The ground state electron energy is - 2.18 * 10 ^ - 11 ergs.

**6**.The electron energy in hydrogen atom is given by En = (-2.18 x 10-18)/n² J. Calculate the

energy required to remove an electron completely from the n = 2 orbit. What is the longest wavelength of light in cm that can be used to cause this transition?

**7**. What transition in the hydrogen spectrum would have the same wavelength as the Balmer transition n = 4 to n = 2 of He spectrum?

**8.** An element with mass number 81 contains 31.7% more neutrons as compared to protons. Assign the atomic symbol.

**9.**. An ion with mass number 37 possesses one unit of negative charge. If the ion contains 11.1% more neutrons than the electrons, find the symbol of the ion.

**10.** A commercially available sample of $H_2SO_4$ is 15% $H_2SO_4$ by wt. (density = 1.10g/mL). Calculate molarity, molality and mole fraction of $H_2SO_4$ in the given solution.

**11**. When a proton of frequency 1 x $10^{15}$/s was allowed to hit a metal surface, an electron having 1.988 X 10-19 J of kinetic energy was emitted. Calculate the threshold frequency of the metal. Show that an electron will not be emitted if a photon of wavelength 600 nm hits the metal surface.

 **12**.Calculate the number of atoms in each of the following (i) 52 moles of Ar (ii) 52 u of He (iii) 52 g of He.

**13**.A piece of aluminium weighing 2.7g was heated with 100ml of 25% by mass $H_2SO_4$ (density=1.18 g/cm³). After complete dissolution of metal, the solution is diluted further by adding water to 500mL. What is the molarity of free $H_2SO_4$ in the resulting solution?

**14**. Calcium carbonate reacts with aqueous HCI to give CaCl2 and CO2 according to the reaction, CaCO3 (s) + 2 HCl (aq) → CaCl2 (aq) + CO2 (g) + H2O(1) What mass of CaCO3 is required to react completely with 25 mL of 0.75 M HCI?

**15.** Chlorine is prepared in the laboratory by treating manganese dioxide (MnO2) with aqueous hydrochloric acid according to the reaction 4 HCl (aq) + MnO2 (s) → 2H2O (l) + MnCl2 (aq) + Cl2 (g) How many grams of HCI react with 5.0 g of manganese dioxide?

**Assignment no 2**

**1.** Define

i) Photoelectric effect

ii) Black body radiation

**2**. Differentiate

i) Absorption and Emission spectrum

i) Orbit and orbital

**3.** Which is more stable i) Mn2+ or Mn3+ii) Fe2+ or Fe3+? Give reason.

**4.** Among the following pairs of orbitals which orbital will experience the larger effective nuclear charge? (i) 2s and 3s, (ii) 4d and 4f, (iii) 3d and 3p.

**5.** Based on Bohr Bury rules arrange the following orbital's in the increasing order of energy.

(i) 5f, 4d, 7s, 7p (ii) 5p, 4d, 5d, 4f, 6s

**6**. Discuss the similarities and differences (t each) between a 1s and a 2s orbital.

**7.** a) How many electrons in an atom may have the following quantum number?

(i) n = 4 m  s = +1/2 (ii) n = 3,1 = 0

b) What are the atomic numbers of elements whose outermost electrons are represented by

(i) $3s^1$ (ii) $2p^3$ (iii) 3d6

**8**. What are the possible values of I and m for a) n=3 b) n=5

**9**. List the quantum numbers of

a) unpaired electrons in F, Ni2+ b) valence electrons in P, Ca

**10**. Electrons are emitted with zero velocity from a metal surface when it is exposed to radiation of wavelength 6800Ao. Calculate the threshold frequency and work function of the metal.

## ASSIGNMENT :3

**1.** Assign the position of the element having outer electronic configuration (i)$3s^23p^4$   (ii)4f7 5d26s2

**2.** Which of the following species has the largest and the smallest size Mg, Al, $Al^{3+}$

**3**. Arrange the given ions in order of decreasing radii Li, Be,B  giving the reason..

**4.** Why is the second ionisation enthalpy always higher than the first ianisation enthalpy?

**5.** Why is the first ionisation enthalpy of N exceptionally higher?

**6**. Give the order of the first ionisation enthalpies of Na, Mg, Al and Si. Explain your choice.

**7**. Noble gases have larger size than halogens. Explain.

**8**. Write the IUPAC name and symbol for the element having 119 as the mass number. On the basis of the periodic table, predict the electronic configuration of this element and also the formula of its most stable chloride and oxide.

**9.** The formation of $F^-$ (g) from F(g) is exothermic whereas that of O is endothermic. Explain,

**10.** First and second ionisation enthalpies (IE, and $IE_2$) in kJ mol for a few elements are given. below:

| Element | $IE_1$ | $IE_2$ |
|---------|--------|--------|
| A | 419 | 3051 |
| B | 1251 | 2297 |
| C | 2372 | 5250 |
| D | 738 | 1451 |

Which of the above elements is likely to be

(a) a reactive metal

(b) a reactive non-metal

(c) a noble gas

(d) a metal that forms a stable oxide of the formula MO?

**11**. Why is F is more reactive than Cl?

**12**. Negative electron gain enthalpy of fluorine is less than that of chlorine. Why?

**13**. Which element has the electronic configuration (Ar) 3d6?

**14.** Answer the following questions about the elements with the electronic configurations below:

A=3p64s2     B=3p63d104s24p5

(a) Is element A metal, metalloid or non-metal?

(b) Is element B metal, metalloid or non-metal?

(c) Which element has the highest ionization enthalpy?

(d) Which element has the electron gain enthalpy? (e) Which element should be smaller of the two?

**15.**Follow the periodic trends and give a brief explanation for each answer:

(a) Which has the highest first ionization enthalpy: B, Al, C and Si?

(b) Which has the highest electron gain enthalpy: F. CI, I or Br?

(c) Which has the lowest first ionization enthalpy: B, C, N or OP

(d) Which has the largest radius: OF or F

# BIOLOGY

Chapters Covered:

1. The Living World

2. Biological Classification

3. Plant Kingdom

**Section A: Concept-Based Work**

1. Chapter Summaries (in your own words):

Write a short summary for each chapter covering key concepts:

The Living World: What is living? Characteristics, taxonomy, and nomenclature.

Biological Classification: Five-kingdom classification, features of each kingdom.

Plant Kingdom: Algae, Bryophytes, Pteridophytes, Gymnosperms, and Angiosperms.

**Section B: Creative Work**

2. Make a Classification Chart:

Create a colourful flowchart or mind map showing the five kingdoms.

Include examples and key features of each group.

**Section C: Practical/ Assignment**

Prepare your practical record and complete all practical in it.

Complete the given assignment in your homework notebook.

**3. Assignment:**

Explain the rules for Binomial nomenclature with the help of any two example.

What are advantages of using scientific names?

Mention the distinguishing characteristics of cyanobacteria.

Differentiate between i) deuteromycetes and ascomycetes ii) Virus and viroid's

Define red tides, diatomaceous earth, chemoautotrophs and karyogamy.

Explain the following terms: i) Protonema  ii) Prothallus  iii) Gemmae iv) heterospory

v) Oogamy

What are hydrocolloids? Give two examples.

Name two algae that yields agar. Mention two uses of agar.

Give reason- why bryophytes are called amphibians of plants?

Write down scientific names of the following:

Wheat, Tiger, Frog, Earthworm, Cockroach, Rose, China rose, Lizard, Onion, Potato

# MATHEMATICS

## Chapter - 1 (Sets)

Ex.- 1.1 : Full Exercise (all parts)

Ex.- 1.2 : Q - 4, 5, 6 (all parts)

Ex.- 1.3 : Q - 3, 4, 5, 6 (all parts)

Ex.- 1.4 : Q - 1, 4, 6, 7, 9, 11 (all parts)

Ex.- 1.5 : Full Exercise (all parts)

Misc. Ex. : Full Exercise (all parts)

## Chapter - 2 (Relations & Functions)

Ex.- 2.1 : Q - 2, 5, 8, 9, 10

Ex.- 2.2 : Full Exercise

Ex.- 2.3 : Q - 1, 2, 5 (all parts)

Misc. Ex. : Full Exercise

## Chapter - 3 (Trigonometric Functions)

Ex.- 3.1 : Full Exercise

Ex.- 3.2 : Full Exercise

## Note: Learn all Trigonometry Formulae

## Chapter - 4 (Complex Numbers)

All examples of chapter - 4

Misc. Ex. : Full Exercise

## Chapter - 5 (Linear Inequalities)

Ex.- 5.1 : Q - 1, 2, 3, 4, 8, 12, 14, 16, 20, 21, 22, 23, 24, 25, 26

Misc. Ex. : Q - 2, 4, 5, 9, 10, 11, 12, 13, 14

**Note : All questions are compulsory. Test will be held of above questions after Summer vacations.**

## MUSIC

Prepare practical File

1 Tanpura

2 Taal Teen Taal

3. Taal Ektaal

4. Taal Chaar taal

5.Raag bhairavi

6. Raag Bihag

7. Raag Bhimplasi

8. Tansen

9. Pandit Vishnu Narayan Bhatkhande

10. Pandit Vishnu Digamber Pulusker


## INFORMATICS PRACTICE

**Q1. Prepare project reports in Fair Note Book (at least 10 pages each) on the following Topics:**

  i.     Evolution of Computer
  ii.    Types of Memory used in Computer
  iii.   Proprietary and Free/Open Source Software
  iv.    Emerging Trends
  v.     Artificial Intelligence
  vi.    Augmented Reality and Virtual Reality
  vii.   IoT and WoT
  viii.  Sensors
  ix.    Blockchains Computing
  x.     Grid Computing
  xi.    Cloud Services
  xii.   History of Python
  xiii.  Fundamentals of Python

Note: All the details of research work should be handwritten in fair Note Book by the student.

Q2.    Do the unsolved exercise, notes of Ch 1,2 and notes of Ch.3.

Q3     "Big data and data Science are two interrelated terms". Prepare a satisfactory report to justify this statement.

Q4.    A 'Processor' is the main component for doing processing. Prepare a report with satisfactory detail the journey of 'Micro Processor'.

Q5.    Data is the most valuable as well as term these days. Prepare a project report related to data, its importance, storage and vulnerability.


## PHYSICAL EDUCATION

**1**) Complete Note book 1st to 4th lesson.

**2**) Write Practical File.

**3**) Do Case Study of lesson 1st & 4th.

**4**) Learn lesson 1st to 3rd and case study.