

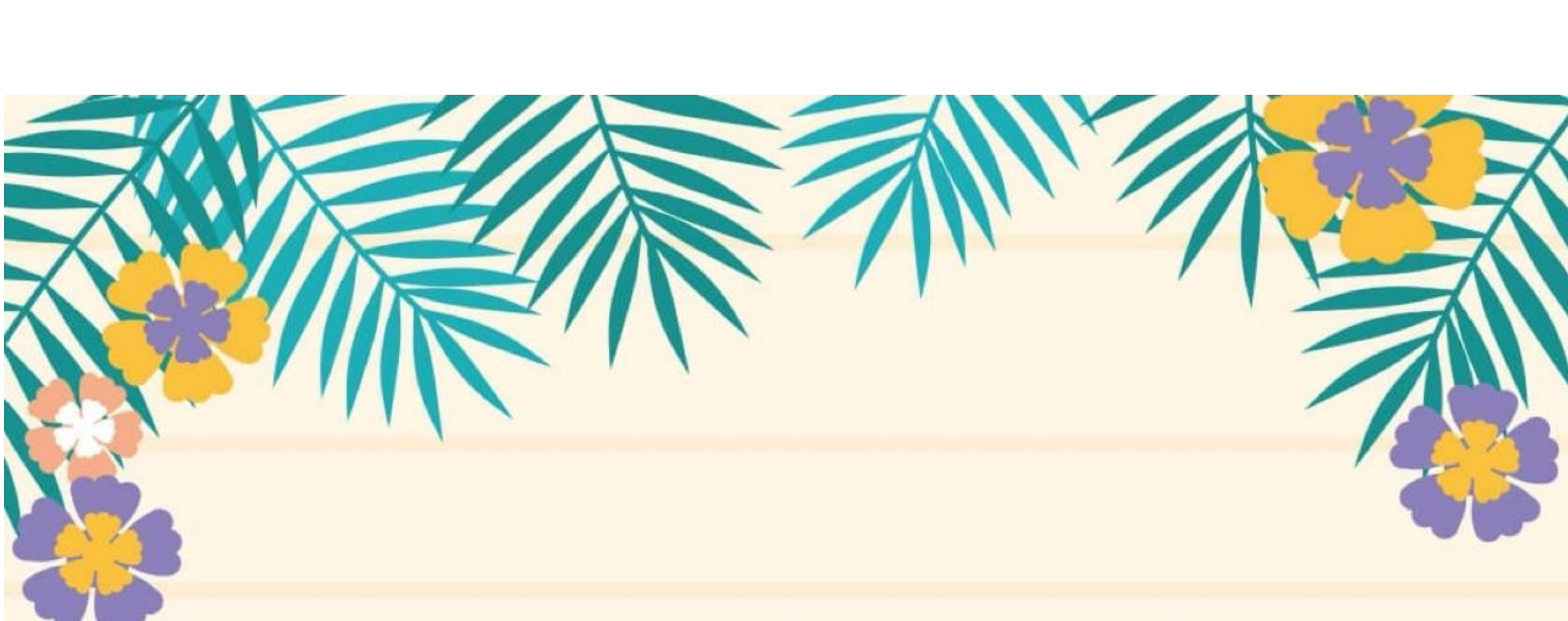
**Ghaziabad
Public School**



Transforming Education, Empowering Students

SUMMER HOLIDAY HOMEWORK

GRADE: XI-SCI




To be ready for tomorrow's opportunities, do your homework today. Learn, refine your skills and focus on your growth.

Dear Students,

Summer has arrived and brought with it your amazing and fun-filled holidays. Summer break is a well-deserved opportunity to relax and unwind by indulging in various activities. Your Holiday Homework has been specially designed for you to be creative, innovative and imaginative while completing your tasks. It will also enable you to recapitulate what was taught in the classrooms. We hope you will play, learn, research, analyze, experiment, imagine, think, value, appreciate and above all enjoy during your holidays. Wishing you happy holidays!

Instructions for the students:

- * Mention date and day when you do your work.
 - * Use your creativity and imagination wherever required.
 - * Submit your holiday homework when the school re-opens.
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1.TOPIC- LET'S EXPLORE!!!!

Read the Newspaper daily and write only one news article under the given headings like National, International, Sports, Glamour, Business, Editorials, Classifieds, Health and express your views on it and compile it in a file .

2. Read the autobiography of any famous personality of your choice and write a book review .

Note- Do the given tasks in A4 Size sheets only.

3.Complete the following Worksheet Units of Together with English-1,2,19,20,21,32,33,62,63,64 and 72

SUB: PHYSICS-042

1. Write the activities(6 activity-3 from section A and 3 from section B) in the activity file as per the list provided in the lab Manual.
2. Make a project file and working model on any one from the following topic that already assigns to each and every student.
 - Gravitation
 - Application of Pascal's law
 - Newton's laws of motion
 - Motion (rotational & circular motion)
 - Projectile Motion
 - Mechanical properties of solid.
 - Thermal properties of matter.
 - Bernoulli principles
 - Kepler's law
 - Oscillation.

SUB: CHEMISTRY-043

PROJECT WORK:

A)Choose any topic and make a project file. **Use A4 size sheets** for the project including various newspaper clippings , image latest discoveries and inventions relevant to the topic. **Follow the given headings in the project: (Introductory page, certificate, acknowledgement, index/ content, introduction, aim, chemical required, procedure/ experiment ,observation, result, conclusion, bibliography)**

1. Analysis of Water Quality Using Chemical Tests:
2. Extraction and Identification of Natural Dyes:
3. Checking the bacterial contamination in drinking water by testing sulphide ion.
4. Study the methods of purification of water.
5. Content of Cold Drinks Available in the Market
- 6.Determination of caffeine in tea samples
7. Determination of contents of toothpaste

8. Nicotine in tobacco.
 9. Determine the quantity of casein in milk
 10. Development of a daily-use sunscreen soap
 11. Does Toothpaste Prevent Bacteria Growth?
 12. Does Cooking Methods Affect Vitamin C in Carrots
 13. Does the Amount of Ammonia Affect Forming Salt Crystals
 14. Comparative study and qualitative analysis of different brands of hair dye.
- B) prepare a 3D Model of a modern periodic table.

OR

Prepare a 3D model of five 3d orbitals.

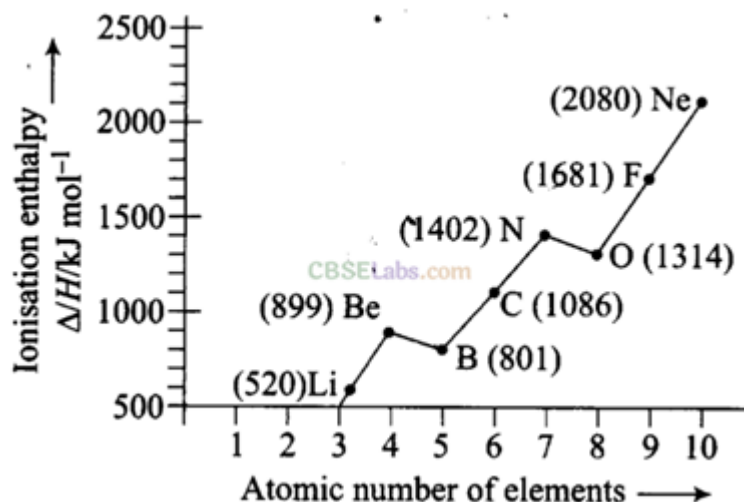
C) Revise all the April and May syllabus. (CH- 1,2 & 3)

Practice these questions and write in your notebook.

1. Calculate the amount of carbon dioxide that could be produced when
 - (i) 1 mole of carbon is burnt in air.
 - (ii) 1 mole of carbon is burnt in 16 g of dioxygen.
2. How much copper can be obtained from 100 g of copper sulphate (CuSO_4)? (Atomic mass of Cu= 63.5 amu)
3. Express the following in scientific notation:
 - (i) 0.0048 (v) 6.0012 (ii) 234,000 (iii) 8008 (iv) 500.0
4. Round up the following upto three significant figures:
 - (i) 34.216 (ii) 10.4107 (iii) 0.04597 (iv) 2808
5. In the reaction, $A + B_2 \longrightarrow AB_2$, identify the limiting reagent, if any, in the following mixtures
 - (i) 300 atoms of A + 200 molecules of B
 - (ii) 2 mol A + 3 mol B
 - (iii) 100 atoms of A + 100 molecules of B
6.
 - i) Calculate the number of electrons which will together weigh one gram.
 - ii) Calculate the mass and charge of one mole of electrons.
7. How many protons and neutrons are present in the following nuclei
8. The mass of an electron is 9.1×10^{-31} kg. If its kinetic energy is 3.0×10^{-25} J, calculate its wavelength.
9. Which of the following are iso-electronic species ?
 Na^+ , K^+ , Mg^{2+} , Ca^{2+} , S^{2-} , Ar.
10. An atom of an element contains 29 electrons and 35 neutrons. Deduce (i) the number of protons and (ii) the electronic configuration of the element.
11. Explain why the electron gain enthalpy of fluorine is less negative than that of chlorine.

12. Among the elements B, Al, C and Si,
 (a) which element has the highest first ionization enthalpy
 (b) which element has the most metallic character?
 Justify your answer in each case.

13. Explain the deviation in ionization enthalpy of some elements from the general trend by using the given figure.



14. Explain the following:

- (a) Electronegativity of elements increases on moving from left to right in the periodic table.
 (b) Ionisation enthalpy decreases in a group from top to bottom.

15. How does the metallic and non metallic character vary on moving from left to right in a period?

SUB: MATHS-041

Task 1: Concept Review and Assignment

Revise chapter 1 on Sets and Chapter-3 on Trigonometry function from your NCERT text book. Complete the assigned Assignment in Mathematics Note book.

Task 2: Mathematical Exploration at Jantar Mantar

Visit Jantar Physically or Virtually using Google Earth and explore the mathematical instrument available there. Gather information about the mathematical principles used in constructing Jantar Mantar. Compile this information on a light green pastel sheet along with pictures and write-ups.

Answer the following questions (based on mathematics and mathematical Principal's used)

1. What is the significance of the name ' Jantar Mantar'?
2. Evaluate the accuracy of the Samrat Yantra Sundial.
3. Identify and briefly describe the astronomical instruments at Jantar Mantar.
4. Explain the importance of the Ram Yantra.
5. Discuss the purpose of the Chakra Yantra.

CHAPTER-3 : TRIGONOMETRIC FUNCTIONS

ASSIGNMENT: IMPORTANT QUESTION FOR EXAMINATION

- 1). Find the value of Trigonometric function: (i) $\sin 765^\circ$. (ii) $\tan 19\pi/3$.
- 2). Prove that $\cot^2 \pi/6 + \operatorname{cosec} 5\pi/6 + 3 \tan^2 \pi/6 = 6$.
- 3). Prove that $\sin (n+1)x \sin (n+2)x + \cos (n+1)x \cos(n+2)x = \cos x$.
- 4). Prove that $\sin^2 6x - \sin^2 4x = \sin 2x \sin 10x$.
- 5). Prove that $\sin 2x + 2 \sin 4x + \sin 6x = 4 \cos^2 x \sin 4x$.
- 6). Prove that $\cos 6x = 32 \cos^6 x - 48 \cos^4 x + 18 \cos^2 x - 1$
- 7). Find the general solution (i) $\sin x + \sin 3x + \sin 5x = 0$ (ii) $\sec^2 x = 1 - \tan 2x$
- 8). Find the value of $\tan \pi/8$.
- 9). If $\tan x = 3/4$, $\pi < x < 3\pi/2$, find the value of $\sin x/2$, $\cos x/2$, and $\tan x/2$.
- 10). Prove that $(\cos x - \cos y)^2 + (\sin x - \sin y)^2 = 4 \sin^2 (x-y)/2$
- 11). Prove that $\sin 3x + \sin 2x - \sin x = 4 \sin x \cos x/2 \cos 3x/2$.
- 12). Prove that $(\cos x + \cos y)^2 + (\sin x - \sin y)^2 = 4 \cos^2 (x+y)/2$.
- 13). Prove that $\cos 4x = 1 - 8 \sin^2 x \cos^2 x$.
- 14). Find the value of $\sin 75^\circ$
- 15). Show that $\tan 3x \tan 2x \tan x = \tan 3x - \tan 2x - \tan x$.
- 16). A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second?
- 17). The minute hand of a watch is 1.5 cm long. How far does its tip move in 40 minutes?
- 18). If the arcs of the same lengths in two circles subtend angle 65° and 110° at the centre, find the ratio of their radii.
- 19). Convert in to radian: (i) 25° (ii) 240° (iii) $-47^\circ 30'$
- 20). Convert in to degree : (i) $5\pi/3$ (ii) $7\pi/6$ (iii) -4

PRACTICE WORKSHEET (CH-1 SETS)

IMPORTANT QUESTION FOR EXAMINATION:-

- 1). In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?
- 2). In a group of students, 100 students know Hindi, 50 know English 25 know both. Each of the students knows either Hindi or English. How many students are there in the group?
- 3). In a committee, 50 people speak French, 20 speak Spanish and 10 speak both Spanish and French. How many speak at least one of these two languages?

- 4). In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product C. If 14 people liked product A and B, 12 people liked products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked product C only.
- 5). Show that $A \cap B$ need not imply $B=C$
- 6). Show that if $A \subset B$, then $C-B \subset C-A$
- 7). Two finite sets have m and n elements. The total number of subsets of the first set is 56 more than the total number of subsets of the second set. Find the value of m and n .
- 8). Write down set builder form- $\{2,4,8,16,32\}$
- 9). In a survey of 25 students, it was found that 15 had taken mathematics, 12 had taken physics and 11 had taken Chemistry, 5 had taken mathematics and chemistry, 9 had taken mathematics and physics, 4 had taken physics and Chemistry and 3 had taken all the three subjects. Find the number of students that had (i) only Physics (ii) Only Chemistry (iii) Only Mathematics (iv) Phy and che but not Mathematics. (v) Maths and Physics but not chemistry. (vi) Only one of the subjects (vii) at least one of the three subjects (viii) none of the subjects.
- 10). In a class of 35 students, 17 have taken mathematics but not Economics. Find the number of students who have taken both mathematics and Economics and the number of students who have taken Economics but not Mathematics, if it is given that each student has taken either Mathematics or Economics.

SUB: BIOLOGY-044

A- WORKING OR 3D MODEL (any one)

Mitosis and meiosis, Bacteriophage, glycolysis, Bacteria cell, Euglena, kidney, Endocrine glands, kidney, plant cell, animal cell

B- CHAPTER WISE ASSIGNMENT

Chapter 1 The Living World

- Q1. What is meant by living? Give any four defining features of life forms.
- Q2. Brinjal and potato belong to the same genus *Solanum*, but to two different species. What defines them as separate species?
- Q3. What are taxonomical aids? Give the importance of herbaria and museums. How are Botanical gardens and Zoological parks useful in conserving biodiversity?
- Q4. *Brassica Campestris* Linn
- Give the common name of the plant.
 - What do the first two parts of the name denote?
 - Why are they written in italics?
 - What is the meaning of Linn written at the end of the name?

Chapter 2 Biological Classification

Q1. A virus is considered as a living organism and an obligate parasite when inside a host cell. But viruses are not classified along with bacteria or fungi. What are the characteristics of viruses that are similar to non-living objects?

Q2. Diatoms are also called 'pearls of ocean', why? What is diatomaceous earth?

Q3. In the five kingdom system of Whittaker, how many kingdoms are eukaryotes?

Q4. Make a list of algae and fungi that have commercial value as a source of food, chemicals, medicines and fodder.

Q5. Apart from chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red and brown algae that are responsible for their characteristic colours?

Do the above questions with answers in the class notebook and learn it.

SUB: PHYSICAL EDUCATION-048

Do in lab manual

• Practical 1: Fitness test (SAI Khelo India Test)

• Practical 2: Procedure for Asanas, Benefits and contraindications for any two asanas for each lifestyle disease.

• Practical 3: Basketball / Volleyball (Do any 1)

i) History

ii) Rules

iii) Skills

iv) Terminologies

v) Labelled diagram of field and equipments

vi) Famous personality

vii) Award name

• Learn chapter = 1, 2 and 3

SUB: HINDI CORE-302

ग्रीष्म अवकाश गृह कार्य

प्रश्न 1 निम्नलिखित विषयों पर पत्र लिखिए।

(क) समुचित सफाई व्यवस्था न होने के कारण अपने क्षेत्र में फैली गंदगी की शिकायत करते हुए दिल्ली नगर निगम के स्वास्थ्य अधिकारी को पत्र लिखिए।

(ख) किसी समाचार-पत्र के संपादक को पत्र लिखिए जिसमें दिल्ली में बढ़ती हुई अपराधवृत्ति की ओर अधिकारियों का ध्यान आकृष्ट कराया गया है।

प्रश्न 2 निम्नलिखित अप्रत्याशित विषयों पर 150 शब्दों में लेख लिखिए

(क) बाजार एक जादू है

(ख) जल है तो जीवन है

प्रश्न 3 भक्ति कालीन कवियों की पाँच कविताओं का सचित्र वर्णन कीजिए।

प्रश्न 4 पाठ्य पुस्तक में कराया गया संपूर्ण कक्षा कार्य याद करें।

निर्देश- सभी प्रश्नों के उत्तर रंगीन A4 शीट पर लिखकर एक फाइल तैयार कीजिए।

SUB: PAINTING-049

- Visit the National Museum and National Gallery of Modern Art (NGMA) and collect data from the artifacts and paintings of your course of study.
- Do sketch any one artifact from these museums and do it on your practice art file.
- Complete your portfolio: 4 still life drawings and 4 landscape/composition drawings on A2 size pages.