**PRABHU DAYAL PUBLIC SCHOOL, SHALIMAR BAGH**

**HOLIDAY HOMEWORK 2024-25**

**CLASS-XII**

# "Success is the sum of small efforts repeated day in and day out."

**Dear Parents,**

Summer Vacation is a time for the children to enjoy and relax. These days are precious and valuable and can be made most from if judiciously used. We should always remind ourselves that children will not remember us for the gifts we shower upon them but will always cherish the time we spent with them. It is time to nurture young minds, inculcate moral values and narrate family anecdotes to keep them in touch with their roots.

It's summertime again! The time to strengthen family bond, tying threads of family tree, sharing joys and sorrows and having a good time together.
*Here are a few tips to make the vacation a fruitful time for your child:*

➢ Look for interesting books and read as much as you can about the places and people. Take good care of your health and hygiene. Avoid heavy and oily food and increase intake of fresh fruits and water to keep yourself well hydrated and energetic.
➢ Use Holiday Homework as an opportunity to spend quality time together. The role of the parent is to be a facilitator and guide to steer the child in the right direction.
➢ Encourage your child to take up yoga or any other form of healthy activity during the vacation.
➢ Involve children in household chores.
➢ Enjoy walking with them in parks and appreciate nature.

## General instructions:

In order to keep our students well engaged and to revise and be thorough with the portions we have completed so far, we are sending the Summer Holiday Homework. We request parents to encourage the kids to finish their homework during the summer holidays. This will help them to have a revision of all the portions without over burdening them. Original work by the child shall be acknowledged and assessed.

Follow the guidelines given by teachers to complete specific activities.

## Happy holidays!

# ENGLISH

Select **any one topic of your choice** and prepare the Project Work for CBSE Practical Exam.
Do as Holiday Home Work.

1. The impact of globalization on the economy and society.

2. Exploring the role of technology in education.

3. Climate change: Causes, effects, and solutions.

4. Gender equality and women empowerment.

5. Mental health awareness and strategies for coping with stress.

6. The future of work: Automation, AI, and employment trends.

7. The role of media in shaping public opinion and democracy.

8. The impact of social media on interpersonal relationships.

9. Urbanization: Opportunities and challenges in developing countries.

10. Cybersecurity: Threats and preventive measures.

11. Present a brief report on the life and works of any ONE of the poets/authors of your choice.( from the prescribed texts)

12. Child Labour -a stumbling block on the road to development.


# PHYSICS

The holiday homework in Physics is comprised of below mentioned parts. You are expected to do all of them and submit in accurate form after your summer vacations get over:

1. Make complete Physics Practical file and Activity file in separate files respectively. The pdfs for the same are already provided to you. On the plain side of your file, for each experiment, make empty Observation table and write all points of the Observation with blanks. They will be filled after you perform the practical in Physics lab. Similarly, calculations and graphs will be done with your own readings.

2. Prepare complete Project report for the investigatory project allotted to you. Once the project is performed in the lab, then only write readings, do calculations and draw graphs respectively in your project report.

3. Do all the intext solved examples of Chapter 1 and Chapter 2 of NCERT in your homework notebook.

4. Do all the end chapter exercise given at the end of Chapter 1 and Chapter 2 of your NCERT in your homework notebook. Don't do Additional exercise which is also there after each chapter of NCERT.

NOTE: FOR POINTS 3 AND 4, THERE IS NO NEED TO MAKE SEPARATE HOLIDAY HOMEWORK NOTEBOOK. DO THEM IN YOUR REGULAR HOMEWORK NOTEBOOK OF PHYSICS

## CHEMISTRY

Prepare a CHEMISTRY INVESTIGATORY PROJECT on the topic assigned to you by the subject teacher in the class. Use A4 size sheets for the project including various newspaper clippings, images, latest discoveries and inventions relevant to the topic. Follow the given headings in the project:
a) INTRODUCTORY PAGE
b) CERTIFICATE
c) ACKNOWLEDGEMENT
d) INDEX/CONTENTS
e) INTRODUCTION
 f) AIM
 g) CHEMICALS REQUIRED
h) PROCEDURE/EXPERIMENT(S)
i) OBSERVATIONS
j) RESULT
k) CONCLUSION
l) BIBLIOGRAPHY

2. Revise the portion of syllabus completed in the class and write at least 2 questions daily of the chapters
i. Haloalkanes and Haloarenes
ii. Alcohol ,Phenol and Ether

## COMPUTER SCIENCE

Do the following assignment in CS notebook.
Programming language-python
1 a) Write any two features of dictionary, list and tuples?
b) What are actual and formal parameters?
c)Explain default  arguments?

d) Expalin following file modes .-
r,rb,r+,rb+
w,wb,w+,wb+
a,ab,a+,ab+
e) list different  file operations.
f) what is file handle?
g) Explain scope of a variable in python by giving an example.

2. write a program to find the maximum element in the list entered by the user.

3. Write a program to perform linear search.

4. Write a function to find the sum of all values which are ending with 3 from a list.
Function is receiving list as parameter.

5. Write a program to input 3 students names and their age to store it in dictionary
and print the age of a particular student.

6. Write a program which accepts a number from the user and print the frequency of
the number in the list lst given under, if the number is not in the lst it should print
"number not available".

7a) Write a program to perform write ,append and read operation in the text file.

b) Write a function BTCount() in Python, which should read each character of a text
file "TESTFILE.TXT" and then count and display the count of occurrence of
alphabets B and T individually (including small cases b and t too).

c) Write a function in Python that counts the number of "Me" or "My" words present
in
a text file "STORY.TXT". If the "STORY.TXT" contents are as follows:
"My first book was Me and My Family. It gave me chance to be Known to the
world."
The output of the function should be:
Count of Me/My in file: 4

8 A binary file "STUDENT.DAT" has structure (admission_number, Name,
Percentage). Write a  function countrec() in Python that would read contents of the
file "STUDENT.DAT" and display the details of those students whose percentage is
above 75. Also display number of students scoring above 75%

9 Write a function which receive  x and n as parameters and return the sum of the
following series: $1+x+x2+x3+x4+. \ldots\ldots.xn$

10.Write a program to read a text file by using the following read methods-
read()
read(n)
readline()
readlines()

11. Design  PPT containing around 10 slides on the topic "unidentified gadget /App/ site used for noble cause"Holiday Home work

## BIOLOGY

1.   Learn the concepts taught in class.

2. Read and understand the investigatory project.

3. Solve HOTS questions from the chapter taught in class.

4. Complete writing down the practical exercises in record file.

5. Practice drawing the diagrams and labeling them.Holiday Homework

## PHYSICAL EDUCATION

Practical -2 Procedure for Asanas, Benifits and Contradiction for any three Asanas for each Lifestyle Disease

Practical -3 Anyone One IOS recognised sports/game of your choice, Labelled diagram of field and equipment. Also mention it's rules, terminology and skills

# MATHEMATICS

Q.1 Let A={1,2,3,4..........9} and relation R on AXA defined a by(a,b) R (c,d) if a+d=b+c for all (a,b),(c,d) $\in$ AXA, show that R is an equivalence relation. Also find the equivalence class of (2,5).

Q2. If R be the relation defined on Q (set of rational numbers) as aRb $\iff$ |a-b| $\leq \frac{1}{2}$ then show that R is not transitive.

Q3. Is the function f : N $\rightarrow$ N, where N is the set of natural numbers is defined by

$$f(x) = \begin{cases} n^2 & ,n \text{ is odd} \\ n^2 + 1, & n \text{ is even} \end{cases} \text{ onto?}$$

Q4. Let R be a relation on the set A of real numbers be defined as (a,b) $\in R$ $\implies 1 + ab > 0$ for all a , b $\in$ A . Show that R is not transitive.

Q.5  Let A=R-{2} ,B=R-{1} , if f:A→B , f(x)=$\frac{x-1}{x-2}$ then f is a bijective function.

Q-6  A function f is defined on all real numbers except 2/3 as f(x)=$\frac{4x+3}{6x-4}$ , then show that f is one-one and onto function.

Q-7 Solve for x,   $(\tan^{-1} x)^2 + (\cot^{-1} x)^2 ) = \frac{5\pi^2}{8}$

Q-8  Prove that $2\tan^{-1}\left(\frac{1}{5}\right) + \sec^{-1}\left(\frac{5\sqrt{2}}{7}\right) + 2\tan^{-1}\left(\frac{1}{8}\right) = \pi/4$

Q9 Draw the graphs of $\sin^{-1} x$ , $\cos^{-1} x$ $and$ $\tan^{-1} x$.

Q-10 Solve for x,   $\cos^{-1}\left(\frac{x^2-1}{x^2+1}\right) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{1-x^2}\right)$ =$2\pi/3$

Q.11 Find the minimum and maximum value of $(\sin^{-1} x)^2 + (\cos^{-1} x)^2$

Q-12  Write in simplest form $\sin^{-1}\left(\frac{12x+5\sqrt{1-x^2}}{13}\right)$

Q.13 f:R→ R,f(x)=|x| , show that f is neither one-one nor on to function.

Q.14 A=$\begin{bmatrix} 1 & 2 & 1 \\ 1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$ $and B = \begin{bmatrix} 9 & -3 & 6 \\ 6 & -2 & -2 \\ -3 & 7 & -2 \end{bmatrix}$, find AB , hence solve the equations.   X+2y+z=7,  x+3z=11,  2x-3y=1

Q.15If A=$\begin{bmatrix} 1 & -2 & 0 \\ 2 & 1 & 3 \\ 0 & -2 & 1 \end{bmatrix}$, find $A^{-1}$, hence solve the system of equations

X+2y=3 , 2x-y+2z=1, 3y+z=3

Q.16 If $\begin{bmatrix} 1 & 2 \\ 2 & 5 \end{bmatrix} A \begin{bmatrix} 1 & -2 \\ 1 & 1 \end{bmatrix} = \begin{bmatrix} 3 & 1 \\ 4 & 2 \end{bmatrix}$ .find matrix A.

Q17. If A and B are skew symmetric matrices of same order then nature of AB+BA?

Q18. Using matrix, solve the equations: $2/x-3/y+3/z=10$ ; $1/x+1/y+1/z =10$ ; $3/x-1/y+2/z=13$

Q19. Prove that diagonal elements of a skew symmetric matrix are zero.

Q20. Express given matrix as a sum of symmetric and skew symmetric matrix

$$A= \begin{bmatrix} 1 & 2 & 3 \\ 5 & 6 & 7 \\ -1 & 0 & 1 \end{bmatrix}$$