SACRED HEART SCHOOL

(Affiliated to CBSE, New Delhi, up to +2 Level)

HOLIDAY HOMEWORK (2026-27)

CLASS:- XII(Science)

English

1. Prepare a PPT
   What to do? Make a PPT/ Collage on the poem Keeping Quiet using appropriate pictures.
   Where to do? In a Pen drive/A4 Sheet
   Parameters: Originality of idea, Creativity and Presentation.
2. Comic Strip
   What to do? Make a comic strip of the chapter Tiger King.
   Where to do? In English Notebook
   Parameters:- Content, creativity, relevance.
3. Being Innovative with ideas:-
   What to do? What could be the alternate ending of the lesson The Third Level?
   Where to do? In English Notebook
   Parameters: Creativity, content and appropriateness
4. Read any one chapter of your choice and write the review.
   A) The Rattrap.
   B) The Enemy
   What to do? Write the review of the lesson in 200-250 words keeping in mind the given aspects.
   Information about the writer
   Summary
   Favourite character and his/her role in the story
   Analysis of the story
   Where to do? In English notebook.
   Parameters for Assessment: Content, language and accuracy.
5. Interview:-
   What to do? Conduct an interview of any elderly person of your area and video record it/ pen it down in your English notebook.
   Where to do? In pen drive/English Notebook.
   Parameters for Assessment: Content, presentation and creativity.

Mathematics

Q1.)An inspection was conducted in a government school at Delhi. The inspection team visited Class XII and selected two sets A, B of the students each.
$A = \{b_1, b_2, b_3\}$ and $B = \{g_1, g_2, g_3\}$where b_i, g_i represent particular boy, girl respectively. where i = 1, 2, 3
Based on the above information, answer the following questions
(i) How many relations can be defined from A to B?
(ii) How many functions can be defined from A to B?
(iii) Find the number of reflexive relation from A to B?

Q2.)Gautam buys 5 pens, 3 bags and 1 instrument box and pays a sum of Rs 1600. From the same shop, Vikram buys 2 pens, 1 bag and 3 instrument boxes and pays a sum of Rs 190. Also, Ankur buys 1 pen, 2 bags and 4 instrument boxes and pays a sum of Rs 250. Let the cost of 1 pen, 1 bag and 1 instrument be Rs x, Rs y and Rs z respectively. Based on the above information, answer the following questions:
(i) Convert the above given situation into a matrix equation of the form AX = B
(ii) Find |A|
(iii) Find A^{-1}

Q3.)In a school, madam Sunita take lecture in class XII. In this class, students divided into two groups A and B. Group A has 20 students and group B has 25 students.
The relation between students of these groups are defined as R: Group A →group B on R: A → B
$R = \{(x, y) : x \in A \text{ and } y \in B$
(i) Find the number of elements in Co-domain of R: A → B

(ii) Find the type of relation of the set of all identity elements.

Q4.) A student in class XII is studying the concept of matrices. He comes across matrices A and B, defined as

$$A=\begin{bmatrix}1 & -1 & 2\\ 0 & 2 & -3\\ 3 & -2 & 4\end{bmatrix}, B=\begin{bmatrix}-2 & 0 & 1\\ 9 & 2 & -3\\ 6 & 1 & -2\end{bmatrix}$$

later on, he uses the product AB in solving the system of equations

x + 3z = 9, -x + 2y - 2z = 4 and 2x - 3y + 4z = -3

Based on the above information, answer the following questions:

(i) Find the product AB

(ii) Find the value of A^{-1}

(iii) What is the solution of the given system of equations?

or

Find the value of x + y + z

Q5.) Sketch the graph of $\sin^{-1}x, \cos^{-1}x, \tan^{-1}x, \sec^{-1}x, cosec^{-1}x \text{ and } cot^{-1}x$ in its domain.

PHYSICS

Q1 practical 1 find the resistance per unit length using ohm's law

Q2 find the unknown resistance using metre bridge

Q3 find figure of merit using galvanometer by half deflection method

CHEMISTRY

Project and practical

Three practical in chemistry lab manual

1.Titration of 0.5 M oxalic acid solution.

2.Titration of 0.1 M mohr's salt solution.

BIOLOGY

Practical copy work

Experiment 1: to prepare a temporary Mount to observe pollen germination

Experiment 2: to study the plant population density by quadrate method

Experiment 3 : to study the plant population frequency by quadrate method

Experiment 4: prepare a temporary Mount of onion root tip to study mitosis

Experiment 5 : to isolate DNA from available plant material like pea seed, spinach, onion etc

Experiment 6: to show the pollen germination on stigma through permanent slide

Experiment 7: to identify the stages of gamete development from permanent slide

Experiment 8: to study the TS of blastula through permanent slide

Experiment 9: to study the Pedigree chart of colour blindness

Experiment 10: to study the plant found in Xeric condition

Experiment 11: to study the animal found in aquatic condition

Experiment 12: to identify common disease causing organism like ascaris causing ringworms through permanent slide

Physical Education

Q1.)Prepare Practical Record File.

Computer Science

Q1:A student writes the following program:

```
def calculate(a, b=5):
    return a * b
print(calculate(4))
print(calculate(4, 3))
```

(a) Identify the type of parameter used for b.

(b) Write the output of the program.

(c) Explain how default parameters improve programming efficiency.

Q2:Riya creates two functions in a program. One function uses a global variable, while another uses a local variable. She explains that using proper variable scope prevents confusion and errors.

(a) Why is it important to use local variables whenever possible?

(b) Which programming value is reflected by proper use of variable scope?

(c) Give one real-life example where limited access (scope) is useful.

Q3:A school wants to calculate total marks of students using a reusable function.
Write a Python function that:

- accepts marks of three subjects as parameters,
- returns the total marks,
- and displays the result for one student.