



**The International
School of Bombay**

NURTURE • CHALLENGE • SUCCESS



Summer Assignment

Class-11 (Science)






HOLIDAY HOMEWORK

SUBJECT - ENGLISH

General Instruction:

All the questions mentioned below should be written in fair copy.

1. Spend some time with your Grandparents, Pen down your experience and support the same with pictures.
 2. Write a short poem on any one of the following:
 - a. Ageing
 - b. Life with Animals
 - c. Nature's blessings
 3. Draw the Mind Map of the story 'The Portrait of a Lady'.
 4. Draw the character sketch of Mourad and Uncle Khusrove.
- 



HOLIDAY HOMEWORK

SUBJECT - BIOLOGY

A. Write the following experiments in your practical manual.

(Note -Use only blue and black pen, draw diagrams neatly with pencil)

1. Study and describe locally available common flowering plants, from family Solanaceae.
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoen /lily leaves or fleshy scale leaves of onion bulb).
5. Study of distribution of stomata on the upper and lower surfaces of leaves.
6. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.
7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.

B. Study and Observe the following (spotting):

1. Parts of a compound microscope





2. Specimens/slides/models and identification with reasons – Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
3. Virtual specimens/slides/models and identifying features of – Amoeba, Hydra, liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.
5. Different types of inflorescence (cymose and racemose)
6. Human skeleton and different types of joints with the help of virtual images/models only.



HOLIDAY HOMEWORK

SUBJECT - MATHEMATICS

General Instruction:

Write the following activities in your activity notebook.

Activity-1 To find the number of subsets of a given set and verify that if a set has n number of elements, then the total number of subsets is 2^n

Activity-2 To verify that for two sets A and B , $n(A \times B) = pq$ and the total number of relations from A to B is 2^{pq} , where $n(A) = p$ and $n(B) = q$

Activity-3 To represent the set theoretic operations using venn diagrams.

Activity-4 To plot the graphs of $\sin x$, $\sin 2x$, using the same coordinate axes.






HOLIDAY HOMEWORK

SUBJECT - PHYSICS

General Instruction:

Write the following experiments in physics practical file (except calculation and result part).

1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Calipers and hence find its volume.
 2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.
 3. To determine volume of an irregular lamina using screw gauge.
 4. To determine radius of curvature of a given spherical surface by a spherometer.
 5. To determine Young's modulus of elasticity of the material of a given wire.
 6. To determine the surface tension of water by capillary rise method.
 7. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
 8. To determine specific heat capacity of a given solid by method of mixtures.
- 

HOLIDAY HOMEWORK

SUBJECT - CHEMISTRY

General Instruction:

Write the following experiments in the chemistry practical file.
(except the calculations and result part).

1. Determination of melting point of an organic compound.
2. Determination of boiling point of an organic compound.
3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.
4. Experiment based on pH
 - a) Comparing the pH of solutions of strong and weak acids of same concentration. Study the pH change in the titration of a strong base using universal indicator.
 - b) Study the pH change by common-ion in case of weak acids and weak bases.
5. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.
6. Using a mechanical balance/electronic balance.
7. Preparation of standard solution of Oxalic acid.
8. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.
9. Preparation of standard solution of Sodium carbonate.
10. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.




Prepare a project on the following topics given below:

TOPICS FOR THE PROJECT:

Select any one Scientific investigation involving laboratory testing and collecting information from other sources.

- Checking the bacterial contamination in drinking water by testing sulphide ion.
- Study of the methods of purification of water
- Testing the hardness, presence of Iron, Fluoride, Chloride etc. depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).
- Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it.
- Study the acidity of different samples of tea leaves.
- Determination of the rate of evaporation of different liquids. Study the effect of acids and bases on the tensile strength of fibers.
- Study of acidity of fruit and vegetable juices.

Table of contents

1. Certificate
 2. Declaration
 3. acknowledgment
 4. Aim of Project
 5. Objective of the Project
 6. Introduction
 7. Apparatus Required
 8. Procedure
 9. Observation
 10. Conclusion
 11. Precaution
 12. Bibliography
- 

HOLIDAY HOMEWORK

SUBJECT - COMPUTER SCIENCE

Practical Portfolio

Python Programming

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number.
- Input three numbers and display the largest / smallest number.
- Generate the following patterns using nested loops:

Pattern-1

```
*  
**  
***  
****  
*****
```

Pattern-2

```
12345  
1234  
123  
12  
1
```

Pattern-3

```
A  
AB  
ABC  
ABCD  
ABCDE
```



- Write a program to input the value of x and n and print the sum of the following series:

> $1 + x + x^2 + x^3 + x^4 + \dots x^n$

> $1 - x + x^2 - x^3 + x^4 - \dots x^n$

> $x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \dots \frac{x^n}{n}$

> $x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots \frac{x^n}{n!}$

- Determine whether a number is a perfect number, an Armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.
- Compute the greatest common divisor and least common multiple of two integers.
- Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
- Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.
- Find the largest/smallest number in a list/tuple
- Input a list of numbers and swap elements at the even location with the elements at the odd location.
- Input a list/tuple of elements, search for a given element in the list/tuple.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.

HOLIDAY HOMEWORK

SUBJECT - ENTREPRENEURSHIP

Prepare a project on the following topics given below:

Topics for the Project:

1. Visit of the District Industries Centre and prepare a report of activities and programs undertaken by them
2. Conduct a case study of any entrepreneurial venture in your nearby area.
3. Field Visit: Visit any business firm near your locality; interact with the owner of the business firm and prepare a field report on parameters like: type of business, scale of business, product/service dealing in, target customer, problems faced and measures to solve the faced challenges.
4. Learn to Earn
5. Know your State Handicraft and Handlooms as a means of economic activity for the livelihood of people and intellectual property rights attached to them for the promotion of local specific skills.

Expected Checklist for the Project Work:

1. Introduction of topic/title
2. Identifying the product/service/entrepreneur
3. Identify the State handicraft
4. Various stakeholders and effect on each of them
5. Use of different tools for market assessment and it's analysis
6. Calculation of various costs involved in the selling process
7. Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file
8. Presentation and writing that is succinct and coherent in project file
9. Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.