

Winter Vacation Projects

Sainik School Imphal

Subject: Biology

Class : XII

1. Study of the Effect of Avenue Tress on Temperature under canopy and outside.
XII A (3674 to 3699) ; XII B (3677 to 3705)
2. Study of Pollination in Sunflower and Legume.
XII A (3701 to 3723) ; XII B (3708 to 3734)
3. Study of Drug Resistance in Bacteria using Antibiotics.
XII A (3727 to 3752) ; XII B (3738 to 4076)
4. Study of Coaguable and Non – Coaguable Milk proteins.
XII A (3756 to D – 259)

WINTER VACATION ASSIGNMENTS (2021-22)

CLASS XII (A & B)

SUBJECT : MATHEMATICS

1. PROJECT WORK : Using graph –demonstrate a function which is invertible .
2. PROJECT WORK :Explore the principal value of the function $f(x) = \sin^{-1} x$ using a unit circle.
3. PROJECT WORK :Explain the concept of increasing and decreasing function using geometrical significance of $\frac{dy}{dx}$.

Illustrate with proper example.

4. PROJECT WORK :Illustrate the concept of definite integral $\int_a^b f(x)dx$ expressing as a limit of sum and verify it by actual integration.
5. PROJECT WORK :Explain the concept of maximum and minimum of a function using first derivative test and visualize it by graph .
6. PROJECT WORK :Make a LINEAR PROGRAMING PROBLEM of income and expenditure in different heads of your family and find a solution how to maximise the saving of your family.

PROJECT NO 1 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3674,3675,3676,3685,3688,3690,3691,3693,3698,3699,3701) =11 nos

PROJECT NO 2 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3702,3703,3706,3711,3714,3716,3720,3721,3723,3727,3729) =11 nos

PROJECT NO 3 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3733,3735,3736,3739,3740,3747,3749,3752,3756,3973,3975) =11 nos

PROJECT NO 4 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3980,3677, 3679,3680,3681,3682,3683,3684 ,3686 ,3697,3705) =11 nos

PROJECT NO 5 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3708,3710,D-258,D-259, 3717,3719,3722,3724,3725,3730,3731) =11nos

PROJECT NO 6 WILL BE DONE BY THE CADETS WITH FOLLOWING ADM NOS (3734,3738,3742,3743,3748,3750,3753,3754,3755,3981,4076)= 11 nos

SAINIK SCHOOL IMPHAL

(Session: 2021-22)

Class: XII (English)

Home assignments to be completed by cadets during winter vacation.

(Following question No. 1 and 2 are for both section **A** and **B**)

1. Write an essay on the following topic:

My dream of joining NDA (series of action plan).

(In about 500 words)

2. ***Why are PREPOSITIONS important in English language? Define each of their kinds with examples.***

(In about 500 words)

Following question No. 3 and 4 are for **section - A**

Make videos of yourself speaking on each of the following topics in about 500 words:

3. ***Importance of English language: How to become a good orator.***
4. ***Problems between Israel and Palestine.***

Following question No. 5 and 6 are for **section - B**

Make videos of yourself speaking on each of the following topics in about 500 words:

5. ***Chinese warfare technique vis-a vis India.***
6. ***Benefits of women's entry into NDA.***

(Answer to question No. 1 and 2 should be submitted to me personally **after** the winter vacation. However, the videos of question No. 3, 4, 5, and 6 should be sent to me **before** you report back to School. In case of any doubt, feel free to give me a call: **8414880669**).

SAINIK SCHOOL IMPHAL
WINTER VACATION ASSIGNMENT
CLASS: XII (2021-22)

A detail project report written in A4 size paper on the project assigned should be submitted on reporting back to the school after winter vacation or when you're ask to submit. List of projects along with adm. no of cadets to which the project is assigned is given below:-

Sr. No	Project Name	Adm. No
1	<u>PROJ-1:</u> Design an electric circuit study effect of intensity of light (by varying distance of the source) on an LDR.	3674, 3675, 3676, 3685, 3688 3690, 3691, 3693, 3698, 3699 & 3701
2	<u>PROJ-2:</u> Design an experimental set up to observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.	3702, 3703, 3706, 3711, 3714 3716, 3720, 3721, 3723, 3727 & 3729
3	<u>PROJ-3:</u> Design an experimental set up to observe diffraction of light due to a thin slit.	3733, 3735, 3736, 3743, 3748, 3750, 3753, 3754, 3755 3981 & 4076
4	<u>PROJ-4:</u> Design an experimental set up to study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).	3677, 3679, 3680, 3681, 3682 3683, 3684, 3686, 3697, 3705 & 3708
5	<u>PROJ-5:</u> Design a refracting telescope with combination of at least two lenses.	3710, 3717, 3719, 3722, 3724 3725, 3730, 3731, 3734, 3738 & 3742
6	<u>PROJ-6:</u> Design a bridge rectifier and differentiate it from full wave rectifier.	3739, 3740, 3747, 3749, 3752, 3756, 3973, 3975, 3980, D-258 & D-259

SAINIK SCHOOL IMPHAL

Winter Vacation Home Work

Subject: Chemistry

Class : XII

1. Report about various insecticides, pesticides and weedicides used in agricultural activities in Manipur. Write about the impact of these chemicals on ecological balance particularly on soil and aquatic biodiversity.

XII A (3674 to 3699); XII B (3677 to 3705)

2. Comment on different type of fertilizers used in agricultural activities and their classification. Write the effect of excessive used of fertilizer on soil and preventive measures.

XII A (3701 to 3723); XII B (3708 to 3734)

3. Report about the various bleaching agents used in various industries like in sugar mills, paper industry and textile mills.

XII A (3727 to 3752); XII B (3738 to 4076)

4. Write about the manufacturing of Potassium Permanganate from Pyrolusite. How it can be used oxidising agent in acid, neutral and alkaline medium?

XII A (3756 to D-259).