KĀSIGA SCHOOL

DEHRADUN

Holiday Homework Summer Break 2020

HOLIDAY HOMEWORK GRADE 12 (SCIENCE)
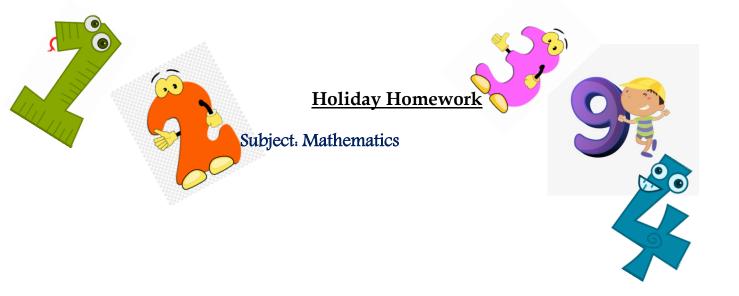
ENGLISH

Time away from the classroom is often the greatest gift for project planning.

Holiday Homework Class 11&12

1. **Complete all the assignments for the topics covered so far in the notebook.**
2. **Critique one of the following movies in about 200-250 words. Prepare to deliver the same as an integral part of your Speaking Assessment that carries 10marks.**
   The Sound of Music, Inception, Gravity, Interstellar, Life of Pi, The Mysterious Island, Hugo, Hook.

General guidelines on how to critique a movie:

- Choose a movie.
- Specify the issues you are going to discuss and analyze in your paper.
- Watch the movie two-three times: first–to get a general idea of the film; second time–to pay attention to the points that come into your sphere of interest and/or to note the details you weren't able to notice the first time.

- Concentrate on specific movie characters.
- See if the way the characters dress, talk, act, or look corresponds with the image they should be projecting towards the viewer.
- Remember that the better the characters are developed, the more character-driven the story is.
- Consider that the right motivation of the characters makes the audience believe the story and its development; moreover, it helps to understand the real motives, which should be understandable to the viewers.

- Decide whether the plot is predictable.
- Define whether some actions were unpredictable; if they were, then they provided you with some food for thought to make assumptions and express your views considering an unexpected turn of events or simply shocked you.
- Remember that the structure encompasses 3 acts: introducing the main characters, mounting tension through the story (lead up to the climax of the story), and bringing the movie to an end.
- See if the plot corresponds to characters' motivations.
- Mind that before the ending there should be a culmination of the story when the tension reaches the highest point.

- Remember that good dialogues should not be protracted as they are to sound natural.
- See if there is a logical development of the conversation.

Holiday Homework

Class XII will complete their Mathematics Lab Manual during the holidays.

PHYSICS

Project -2020

"Physics is a tortured assembly of contrary qualities: of scepticism andrationality, of freedom and revolution, of passion and aesthetics, and of soaringimagination and trained common sense."
Leon M Lederman (Nobel Prize for Physics, 1988)

Aim:

*engage in independent research with intellectual initiative and rigour
*develop research, thinking, self-management and communication skills
*reflect on what has been learned throughout the research and writing process.

Assessment objectives:

1.Knowledge and understanding:

(i)To demonstrate knowledge and understanding of the topic chosen.

(ii)To demonstrate knowledge and understanding of subject specific terminology and/or concepts.

(iii)To demonstrate knowledge and understanding of relevant and/or appropriate research sources and/or methods used to gather information.

2.Application and analysis:

(i)To select and apply research that is relevant and appropriate to the topic.

(ii)To analyse the research effectively and focus on the topic.

3.Synthesis and evaluation:

(i) To be able to discuss the research in terms of a clear and coherent reasoned argument in relation to the topic.

(ii)To be able to critically evaluate the arguments presented in the project report.

(iii)To be able to reflect on and evaluate the research process.

(iv)To be able to present information in an appropriate academic format.

(v) To understand and demonstrate academic integrity.

List of topics:

Suggested Investigatory Projectsas per syllabus document CBSE, 2020-21
1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
(a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).
(b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equi convex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To design an appropriate logic gate combination for a given truth table.
5. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
6. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
7. To estimate the charge induced on each one of the two identical styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.
8. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
9. To study the earth's magnetic field using a tangent galvanometer.

List of other appropriate topics

1. To study charging and discharging action of a capacitor.
2. To experimentally determine the time constant (t) of a slow RC circuit and verify the value using the actual formula.
3. To design a transformer and to determine its efficiency.
4. To design an AC/DC generator and to study factors which affect induced electricity.
5. To generate and to detect electromagnetic waves.
6. To design a microscope/telescope using spherical lenses of suitable focal length.

7. To study diffraction pattern of light using diffraction grating and to determine wavelength of light used using Bragg's formula.
8. To study (theoretical model) diffraction pattern of different electromagnetic waves and to choose a suitable e m wave (in terms of wavelength/frequency) for better communication in hilly regions.
9. To design suitable theoretical model of atomic/nuclear multipurpose power plant.
10. To design and study half wave/full wave rectifier.

A project report should contain following

Page1. Title page: Should contain Subject and topic in font size 18 at the top followed by session, Submitted by (Name of the student) , submitted to(teacher name) in font size 16

Page2. Certificate(written at the centre top of the page in font size 18)

This is to certify that…(Name of the candidate)………Roll Number…..(Board roll no)…is appearing for AISSCE-2021 as regular student from Kasiga School has submitted Physics project work on the topic……..(topic name)…….under the supervision of Mr R C Balodi (all in font size 16)

Internal Examiner Signature   **External Examiner Signature**

School stamp

Signature of principal

Page3.Acknowledgement: In this section student will acknowledge to all who helped him/her directly /indirectly.

For example a topic and its subtopics are mentioned below. Page number should be marked on each page. Sub topics are mentioned in next page but subtopics may vary from topic to topic. (detailed report can be shared on request)

How does rotation radius affect the forced generated by a rotor?

Contents

CHEMISTRY

1. Do the NCERT exercise questions in your assignment notebook for Chapter 4, 10 and 11.

2. The project report to be prepared is given as follows-

S.No.	Name of student	Project title
1.	Aditya Pandey	Determination of contents of cold drinks.
2.	Bibek Shreshtha	Project on measuring the amount of acetic acid in vinegar.
3.	Devang Maheshwari	To determine caffeine in tea samples.
4.	EshaanMarvania	To study the effect of metal coupling on rate of corrosion.
5.	Frank Vithani	Project to check the ions present in toothpaste.
6.	Jasline Gill	Determine the quantity of casein in milk.
7.	Kunwar Aditya	Project on Chocolate analysis.
8.	Richa Roy	To prepare Cuprammonium threads from filter paper
9.	Sahitya Gupta	Project on synthesis of Aspirin
10.	Siddhart Sud	To compare the neutralizing ability of antacid tablets.
11.	Vansh Dhingra	Investigation on foaming capacity of different soaps.
12.	Yesha Gupta	To study effect of heat on Vitamin C in tomatoes.

NOTE- Do not change the project title on your own, if you want to change the topic you need to inform me. Also no two students can have the same topic as per CBSE.

Instructions for the Project-

1. The project report should be of minimum 10 pages, it has to be printed, colored and attractive with pictures of relevant themes related to your topic.

2. The following sequence has to be followed while making the project and each heading should be done on separate sheet-

   i.   Cover page
   ii.   Certificate
   iii. Acknowledgment
   iv.   Index/Contents

Sites to refer-

projects.icbse.com/subject/chemistry

www.seminarsonly.com/...Projects/Chemistry/Chemistry-Investigatory-Projects-Experi*...*

https://www.scribd.com/doc/31194873/Investigatory-Project-Chemistry-Class-XII

COMPUTER SCIENCE

Some sample lab assignments are as follows:

5.1. Programming in Python:

- Recursively find the factorial of a natural number.
- Read a file line by line and print it.
- Remove all the lines that contain the character `a' in a file and write it to another file.
- Write a Python function sin(x, n) to calculate the value of sin(x) using its Taylor series expansion up to n terms. Compare the values of sin(x) for different values of n with the correct value.
- Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
- Write a recursive code to find the sum of all elements of a list.
- Write a recursive code to compute the nth Fibonacci number.
- Write a Python program to implement a stack and queue using a list data-structure.
- Write a recursive Python program to test if a string is a palindrome or not.
- Write a Python program to plot the function $y = x^2$ using the pyplot or matplotlib libraries.
- Create a graphical application that accepts user inputs, performs some operation on them, and then writes the output on the screen. For example, write a small calculator. Use the tkinter library.
- Open a webpage using the urllib library.
- Compute EMIs for a loan using the numpy or scipy libraries.
- Take a sample of 10 phishing e-mails and find the most common words.

5.2. Data Management: SQL and web-server

- Find the min, max, sum, and average of the marks in a student marks table.
- Find the total number of customers from each country in the table (customer ID, customer name, country) using group by.
- Write a SQL query to order the (student ID, marks) table in descending order of the marks.
- Integrate SQL with Python by importing the MySQL module
- Write a Django based web server to parse a user request (POST), and write it to a CSV file.

6. Project

The aim of the class project is to create something that is tangible and useful. This should be done in groups of 2 to 3 students, and should be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, Of course to do some of this projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves.

If three people work on a project for 6 months, at least 500 lines of code is expected. The committee has also been made aware about the degree of plagiarism in such projects. Teachers should take a very strict look at this situation, and take very strict disciplinary action against students who are cheating on lab assignments, or projects, or using pirated software to do the same. Everything that is proposed can be achieved using absolutely free, and legitimate open source software.

PHYSICAL EDUCATION

Physical Education project work

A) Students need to make project file (choose file specially made for Physical Education)based on Athletics, Yoga and any one game of your choice.

B) Choices should be made from any one of these major games -. cricket, football, basketball and swimming

C) Things to write- History, rules and regulations, famous tournaments worldwide, records and measurement