

KULACHI HANSRAJ MODEL SCHOOL

HOLIDAYS HOMEWORK

- **Session 2019-20**

CLASS X

Interdisciplinary Project is an amalgam of two or more academic disciplines into one activity. It is an attempt to integrate all the subjects of Class IX & X students, as a single Holiday Assignment so that their efforts culminate into a thorough knowledge of their respective topics.

The objective of Interdisciplinary research is to produce a cognitive advancement in the form of new understanding collaboration or research which results in new solutions to particular problems and intellectual questions.

Integration is a process by which ideas, data and information, method and role, concepts and theories from various disciplines will be synthesized, connected & blended.

**MAIN THEME- INTERNATIONAL YEAR OF PERIODIC TABLE The International Year
of the Periodic Table
A Common Language for Science**

The Periodic Table of Chemical Elements is one of the most significant achievements in science, capturing the essence not only of chemistry, but also of physics and biology.

1869 is considered as the year of discovery of the Periodic System by Dmitri Mendeleev. 2019 will be the 150th anniversary of the Periodic Table of Chemical Elements and has therefore been proclaimed the "International Year of the Periodic Table of Chemical Elements (IYPT 2019)" by the United Nations General Assembly and UNESCO.

English

Q1.The following chapters from 'First Flight' and 'Footprints Without Feet' to be completed in Academic Support Material (ASM)....Mks-10 ..Rubrics

- Completion-4
- Neatness-2
- Timely submission-2
- Correctness-2

Chapters-First Flight

- A Letter to God
- Nelson Mandela: A Long Walk to Freedom
- Dust of Snow
- Fire and Ice
- A Tiger in the Zoo

Footprints Without Feet

- A Triumph of Surgery
- The Thief's Story
- The Midnight Visitor

Q2. On closely observing the periodic table , you will notice that its structure resembles the English letter 'U' . In your summer break, learn about Homophones, Homonyms and Homographs and create a similar table. On the right side of the table, write 10 Homophones. On the left side of the table, write 10 Homonyms and at the bottom, write 10 Homographs. Given below are the definitions that will help you. (5 mks)

Rubrics

Creativity and neatness - 2 marks

Content - 3 marks

A homophone is a word that has the same sound as another word but is spelled differently and has a different meaning:

to/two/too

there/their/they're

pray/prey

A homograph is a word that has the same spelling as another word but has a different sound and a different meaning:

lead (to go in front of)/lead (a metal)

wind (to follow a course that is not straight)/wind (a gust of air)

bass (low, deep sound)/bass (a type of fish)

Homonyms are two words that are spelled the same and sound the same but have different meanings. A simple example of a homonym is the word "pen." This can mean both "a holding area for animals" and "a writing instrument." Another example is "book," which can mean "something to read" or "the act of making a reservation."

Q3 Read the passage carefully and answer the following questions.

(5 marks)

Periodic Table

The periodic table is a table in which all of the known elements are listed. The table arranges the elements in order of increasing proton number to show the similarities of chemical elements. Therefore elements with structural similarities & atomic number are placed together. These elements can be placed into two different categories, metals & non-metals. These elements can then be sub divided into 4 groups; Alkali, non-metals, transition & inner-transitions. If read horizontally the size of the atoms increases from metals to non-metals, yet when read vertically, all of the elements in the same group have the same number of electrons, which means they all

behave in the same manner.

The first man to describe the periodic table was Dmitri Ivanovich Mendeleev, who was interested in chemistry. Mendeleev was determined to prove that elements in fact followed certain patterns. Mendeleev used the properties of the 57 known elements to group them. He used the first version of the periodic table to place elements where they seemed to belong. He also left blank spaces in the appropriate squares. After the elements had been laid out he was able to, in detail, predict the chemical & physical tendencies of the elements. Hydrogen didn't fit into his pattern so he put it in a box of its own. A new row was started each time an element was discovered with properties similar to those in the first row. When read top to bottom there are various similarities to be found in the table, identical as to when read left to right. This is the basis for the modern periodic table.

Questions

1. How does the periodic table arrange its elements?
2. What are the four sub-divisions of elements?
3. Who was the first man to describe the periodic table and what was his interest?
4. What is the basis for the modern periodic table?
5. Find words from the passage which mean
 - (a) Having made a firm decision
 - (b) An account of a matter from a particular person point of view

Note :Q2 and Q3 must be attempted in the Writing Skills Register.

German

Reading

Read the text given in the book in Simon Modul.

Read about contribution of German scientists in development of periodic table.

Write a small text(50-60) words as a Summary of your reading in German.

Writing

Write Emails given in following papers.

<https://drive.google.com/file/d/0B4BEsTy6OTx1Z1BxcFg1Wk1aakpSeEF3SU1PUUtYTmNWU1Q4/view?usp=drivesdk>

Dein Onkel hat ein neues Haus in Jaipur gekauft. Er organisiert eine Party in Jaipur. Aber du kannst nicht gehen, du hast Prüfungen. Schreibt dazu einen Dialog. (50-60 Wörter)

Grammar

Learn forms of verb is all the verbs given in the back.

Learn all verbs with prepositions given at back of book.

Vocabulary

Write names of any 10 elements of periodic table in German.

Find and write 5 new words everyday in your Notebook.

Assessment Rubric

Neatness -3

Originality-5

Timely submission-2

Mathematics

CLASS 10

(A) Trends in the Periodic Table

1) Complete the following table for the first 20 elements of Periodic Table:

Element name	Element Symbol	Atomic number	Atomic radius(pm)	Atomic mass(amu) (Round off to the nearest whole number)

2) Draw a line in the middle of a piece of graph paper, separating page into top and bottom. On the top plot a graph of atomic mass(y-axis) vs. atomic number(x-axis). On the bottom plot a separate graph of atomic radius (y-axis) vs. atomic number(x-axis).

For each graph connect successive dots with straight lines. Also ensure that identical atomic numbers are plotted on the same vertical position on the sheet (i.e. atomic number 1 in the top graph should be on the same line as atomic number 1 in the bottom graph).

3) Examine your graph of atomic mass vs. atomic number and answer the following:

- a) Which elements are found at the main peaks in your graph?
- b) Which elements are found at the main valleys in your graph?

4) Examine your graph of atomic radius vs. atomic number and answer the following:

- a) Which elements are found at the main peaks in your graph?
- b) Which elements are found at the main valleys in your graph?

5) Generally as you go from left to right across a period in the periodic table, what happens to the atomic radius? What happens to the atomic mass?

Rubrics for assessment :

Submission on time : 2 marks

Collection of Data : 2 marks

Graphical Representation of Data.

: 4 marks

Correctness : 2 marks

TOTAL MARKS : 10

(B) Do Assignments of the following chapters from Academic Support Material in your Assignment Register:

- a) Arithmetic Progressions
- b) Introduction to Trigonometry
- c) Some Applications of Trigonometry

TOTAL MARKS : 10

SCIENCE Class 10

International Year of Periodic Table (IYPT -2019)

1. Periodic Table of Elements – Research Project

Title: “ **Adopt an element**”

Choose any one element from the Periodic Table. Design an ‘**Element Graphic Organiser**’ and a “**Flash Card**’ for your element as per the following details

Project Details:

STEP ONE: RESEARCH

- Find more information about your element through reading books, magazines or Internet.
- Record the information in the ‘Graphic Organiser’ provided below.

Element Graphic Organizer

Basic Facts	Element Name & Symbol	
	Element family	
	Atomic Number	
	Atomic Mass	

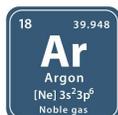
	Classification (Metal, non-metal or Metalloid)	
	My element is in Group No. ___ and Period No. ___ of the Periodic Table	
Interesting Facts	When it was discovered?	
	How was it discovered? (or who discovered it?)	
	Where is the element's name from? Why is it named that?	
	Where in the world it is typically found?	
Physical Properties	Colour	
	Texture	
	Luster	
	Hardness	
	Density	
	Phase in room temperature (25°C)	
	Melting Point	
	Boiling Point	
Chemical properties & uses	Common Compounds in which it is found (include common names & their chemical formulae)	
	Any 3 uses of the element	
Books & websites used Bibliography:		

STEP TWO :- DESIGN

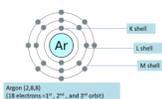
- Present the basic information of the selected element as a FLASH CARD (size : post card size)
- You can make the flash card creative by adding pictures, etc.
- Students can use any coloured sheet and depict the basic information of the element on front and back side of the card, as shown below:

Example of Flash Card

Example: Front side of flash card: (basic information about the element like atomic number, atomic mass, electronic configuration, etc)



Back side of flash card: (Structure of atom, include number of electrons, protons and neutrons, valence electrons and valency)



Rubrics: 10 marks (for the project work)

Research work	:	3
Creativity	:	2
Visual Presentation (of the flash card)	:	3
Timely submission	:	2
Total		10

2. Attempt the following worksheets from the Academic support material and submit it to your respective science teacher.

PHYSICS : Worksheet No. 1 to 5
CHEMISTRY : Worksheet No. 1 to 5
BIOLOGY : Complete the worksheets related to chapter Life Processes.

Marks allotted: 10 marks

PHYSICS : 3 MARKS
CHEMISTRY : 3 MARKS
BIOLOGY : 4 MARKS

कक्षा: - दसवीं
विषय:- हिंदी
ग्रीष्मावकाश):- कार्य

1)रासायनिक तत्वों की आवर्त - तालिका (पीरियोडिक टेबल ऑफ द एलिमेंट) में से कोई 15 तत्व चुने:-

उनके हिंदी नाम , प्रतीक व अवस्था (गैस / ठोस / द्रव) बताते हुए उनकी हमारे दैनिक जीवन में उपयोगिता व उपलब्धता का संक्षिप्त में उल्लेख कीजिए ।

2)किसी एक तत्व को विषय बनाकर या तत्वों के महत्व व उपयोगिता एक कविता भी लिखें।

3)आहार (भोजन) में आवश्यक तत्वों पर चर्चा करते हुए डाक्टर और रोगी के बीच हुई बातचीत को संवाद के रूप में लिखें ।

4)फल , सब्जियों ,दालों व अन्य खाद्य - सामग्रियों से मिलने वाले तत्वों का सचित्र (चित्र स्वनिर्मित) उल्लेख करें ।

(कोई पाँच खाद्य सामग्री)

5) हिंदी शैक्षणिक सहायक सामग्री (ASM)

पृष्ठ संख्या-32-36,49-54

सामान्य निर्देश

*सभी कार्य ए-4 आकार के सफेद पृष्ठों पर साफ, सुंदर और व्यवस्थित ढंग से करें।

*प्रत्येक कार्य नवीन पृष्ठ से आरंभ करें।

मूल्यांकन के आधार बिंदु

विषय-वस्तु।	3
भाषा व प्रस्तुति	3
कार्य की पूर्णता।	2
समयबद्धता।	2

Computer Science

Rubrics: 10 marks (for the Holidays work)

Research work	:	3
Creativity	:	2
Visual Presentation (of the Poster)	:	3
Timely submission	:	2
Total		10

- Q1. Explain what, why and where we implement Artificial Intelligence?
- Q2. Describe any five applications of Artificial Intelligence in daily life?
- Q3. Describe the need of Artificial Intelligence ethics?
- Q4. Write an article in notebook about the problem which you have encountered and how you wish to solve it using Artificial Intelligence?
- Q5. Make a poster in Notebook for a job advertisement describing "Future Job Ad"(Think 2029- ten years later).Your job ad should include information about the company that is hiring and what kind of skills that they are looking for in their employees.
- Q6. How Artificial Intelligence helps in domain like Healthcare, Transport and security. Make a periodic table for advantage and disadvantages of Artificial Intelligence in each domain.

Social science

Minerals & Sustainable Development

The Earth's crust is made up of different type of minerals embedded in the rocks. Minerals are an indispensable part of our lives. Almost everything we use, from a tiny pin to a towering building or a big ship, all are made from minerals.

The periodic table is a table in which all of the known elements are listed. These elements can be placed into different categories- Metals & Non Metals.

Closely observe the periodic table and answer the following:

- (A) Define minerals. Draw a classification of minerals.
- (B) Identify the chemical symbol, atomic weight and three uses of each of the following minerals: -
 - I. Iron
 - II. Manganese
 - III. Copper
 - IV. Bauxite
 - V. Calcium
- (C) India is fortunate to have fairly rich and varied mineral resources. However, these are unevenly distributed.
On the political map of India locate the major regions rich in the above listed minerals.
- (D) Resources are vital for any development activity. But irrational consumption and over utilization of resources lead to social-economic and environmental problems.

In this background, there is an urgent need to develop a sustainable path of energy development. India is presently one of the least energy efficient countries in the world. We have to adopt a cautious approach for the judicious use of our limited resources.

- Suggest five ways of energy conservation along with related pictures.
- Define sustainable development. How can we use mineral resources more sustainably?

GUIDELINES

- 1) The project should be of 10 to 15 pages.
- 2) The project should be handwritten.
- 3) Make your project attractive by adding relevant images/maps/newspaper cuttings.
- 4) It must include-
 - Cover page
 - Acknowledgement
 - Index
 - Bibliography
- 5) References-
 - Contemporary India part II
 - www.nationalgeographic.org › education
 - <https://sustainabledevelopment.un.org> ›
 - <https://www.google.co.in/url?sa=t&source=web&rct=j&url=http://ris.org.in/sdg/india-and-sustainable-development-goals-way-forward&ved=2ahUKEwiqsbOfopriAhWTknAKHSbZCvYQFjAZegQIAhAB&usg=AOvVaw3CGxW0s9K7vmf1QFGoaxm4>

[Rubrics](#)

Content Accuracy and Originality	3 Marks
Analysis	3 Marks
Presentation & Creativity	3 Marks
Viva	1 Mark