CLASS-XII A (2024-25)

HOLIDAY HOMEWORK

SUBJECT	ASSIGNMENTS
ENGLISH	1.The order from Berlin banning teaching of French stunned everyone ,Comment.(Word limit 150 to 200 words) 2. Draw a character sketch of M.Hamel as it is shown in," The Last Lesson. 3.Prepare a project on " Linguistic Chauvinism", related to the lesson written by Alphonse Daudet. 4. Describe the contrast of the scene inside the car with the activities going on outside.Describe the use of images that the poet employs to strike that contrast.(Refer poem - My mother at Sixty six) 5. Describe Charlie .Do you think him being on the third level at the grand Central station was a"Waking-dream wish fulfilment?What did his stamp collecting point to ? 6. The modern consumerist world is full of fear, insecurities, stress and wars. What are the ways in which we try to combat them? Answer with reference to "The third level.

PHYSICS	(A) Write the following activities in thin activity file
	<u>Section - A</u>
	1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
	2. To assemble the components of a given electrical circuit.
	3. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.
	<u>Section- B</u>
	1. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
	2. To observe diffraction of light due to a thin slit.
	3. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.
	<u>(B) Prepare Investigatory project</u>
	1. Prepare Investigatory Project.and compile it according to the prescribed format
	• Cover page • Certificate
	• Acknowledgment • Index
	• Introduction
	• Content (including pictures/graphs/tables/survey report etc.)
	• Case Study • Bibliography
	(C) Prepare worksheet of chapter 1 and 2

| CHEMISTRY | 1) Prepare Investigatory Project on any one topic and compile it according to the prescribed format.
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● Study of the presence of oxalate ions in guava fruit at different stages of ripening.
● Study of quantity of casein present in different samples of milk.
 ● Preparation of soybean milk and its comparison with natural milk with respect to curd formation, the effect of temperature, etc.
● Study of the effect of Potassium Bisulphate as a food preservative under various conditions (temperature, concentration, time, etc.).
● Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
● Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
● Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), and Illaichi (cardamom).
 ● Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chili powder and pepper.

2) Write down answers of the following reasoning questions based on Unit-1 Solutions:
1.Explain why on addition of 1 mol of NaCl to 1 liter of water, the boiling point of water increases, while addition of 1 mol of methyl alcohol to one liter of water decreases its boiling point.
2.Why are aquatic species more comfortable in cold water in comparison to warm water?
3.How does sprinkling of salt help in clearing the snow covered roads in hilly areas? Explain the phenomenon involved in the process.
4.Why soda water bottle kept at room temperature fizzes on opening?
 5.Out of 1 M glucose and 2 M glucose, which one has a higher boiling point and why? |

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| BIOLOGY | 1. Prepare Investigatory Project.and compile it according to the prescribed format
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 2. Write Practical Activities in Practical File.
 3. Prepare Unit 1 & 2 |

MATHEMATICS	Q.1 If a matrix has 8 elements, what are the possible orders it can have? What if it has 5 elements?

Q.2 Construct a 2×3 matrix $A = [a_{ij}]$ whose elements a_{ij} are given by:

(i) $a_{ij} = i \times j$

(ii) $a_{ij} = 2i - j$

Q.2 Show that satisfies the equation $A^2 - 3A - 7I = 0$ and hence find A^{-1}.

Q.3 Find X and Y

$$2X + 3Y = \begin{bmatrix} 2 & 3 \\ 4 & 0 \end{bmatrix}, \quad 3X + 2Y = \begin{bmatrix} -2 & 2 \\ 1 & -5 \end{bmatrix}.$$

Q.4 The number of all possible matrices of order 3×3 with each entry 0 or 1 is:

Q.5 A trust fund has ` 30,000 that must be invested in two different types of bonds. The first bond pays 5% interest per year, and the second bond pays 7% interest per year. Using matrix multiplication, determine how to divide ` 30,000 among the two types of bonds. If the trust fund must obtain an annual total interest of: (a) `1800 (b) `2000

Q.6 . If A, B are symmetric matrices of same order, then $AB - BA$ is a (A) Skew symmetric matrix (B) Symmetric matrix (C) Zero matrix (D) Identity matrix

Q.7 If the matrix A is both symmetric and skew symmetric, then (A) A is a diagonal matrix (B) A is a zero matrix (C) A is a square matrix (D) None of these

Q.8 Find the equation of the line joining A(1, 3) and B (0, 0) using determinants and find k if D(k, 0) is a point such that area of triangle ABD is 3sq units

Q.9 Find equation of line joining (1, 2) and (3, 6) using determinants.

Q.10 The sum of three numbers is 6. If we multiply third number by 3 and add second number to it, we get 11. By adding first and third numbers, we get double of the second number. Represent it algebraically and find the numbers using matrix method.

Q.11 Examine the consistency of the system of equations

1. $x + 2y = 2$

$2x + 3y = 3$

2. $2x + 3y + 3z = 5$

$x - 2y + z = -4$

$3x - y - 2z = 3$

3. $x - y + z = 4$

$2x + y - 3z = 0$

PHYSICAL EDUCATION	1. As the Sports Captain of your school, you are involved in the selection of students for participating in District /Region/Zone matches subsequently. List out the criteria you will employ for selection of Individual Games/Sports Team Games/Sports.
	2. Visit a nearby stadium and talk to women athletes. Collect data of 5 such athletes in their teens. Are they facing any problem related to their health, diet etc? Discuss about it in the class.
	3. Talk to few people doing yoga at park, ask them the asanas, kriya and pranayam they do in their yoga routine and make a list of it.
	4. Prepare practical record files according to prescribed syllabus.
	5. Classify the names as type of nouns (eg. Parvatasana - mountain: Object; Ushtraasana Camel: animal)

IP	Ch-1 Python Pandas-1
	Q1. Write Python code to create a Series object Temp1 that stores temperatures of seven days in it. Take any random seven temperatures.
	Q2. Write Python code to create a Series object Temp2 storing temperatures of seven days of week. Its indexes should be 'Sunday'. Monday'. 'Saturday'.
	Q3. A series object (say T1) stores the average temperature recorded on each day of a month. Write code to display the temperatures recorded on:
	(i) First 7 days
	(ii) Last 7 days.
	Q4. Series objects Temp1, Temp2, Temp3, Temp4 store the temperatures of days of week1, week2, week3, weeken4 respectively. Write a script to
	(a) Print the average temperature per week
	(b) Print average temperature of entire month.
	Q5. Write a program that stores the sales of 5 fast moving items of a store for each month in 12 Series objects, i.e., S1 Series object stores sales of these 5 items in 1st month, S2 stores sales of these 5 items in 2nd month, and so on.
	The program should display the summary sales report like this:
	Total Yearly Sales, item-cerise (should display stem of items' sales over the months)
	Maximum sales of item made: <name of item that was sold the maximum in whole year>
	Maximum sales for individual items
	Maximum sales of item 1 made: <month in which that item sold the maximum>
	Maximum sales of item 2 made: <month in which that item sold the maximum>
	Maximum sales of item 3 made: <month in which that item sold the maximum>

Data Science	
	Ch-1 Data Governance Answer the questions below in no less than 100 words. 1. What are some of the aspects covered by data governance? 2. Write a short note on the California Consumer Privacy Act. 3. Write a short note on the General Data Protection Regulation. Higher Order Thinking Skills(HOTS) Answer the questions below in no less than 200 words. 1. In 2019, Canva, which is a famous website used for design, suffered a data breach that impacted more than 100 million users. The breach caused data such as email addresses and passwords to be leaked. Considering this situation, discuss how the website can prevent further leaks based on ethical guidelines. 2. Write a short note on how children are at higher risk of being manipulated on the internet. Applied Project Discuss how data governance and data best practices are followed at your school. Applied Project Discuss how data governance and data best practices are followed at your school. Ch-2 Exploratory Data Analysis Answer the questions below in no less than 100 words. 1. What are some of the differences between univariate and multivariate analysis? Give some examples. 2. What are the ways to handle missing data? 3. What are some of the methods for univariate analysis? 4. What are the steps for cleaning raw data? Higher Order Thinking Skills(HOTS) Answer the questions below in no less than 200 words. 1. What problems can outliers cause? 2. Why should irrelevant observations be removed from the data? 3. How can we use unsupervised learning for EDA? Applied Project