CLASS-XIA (2024-25)

SUMMER VACATION HOLIDAY HOMEWORK

SUBJECT	ASSIGNMENTS
ENGLISH	1.A recent survey by the Ministry of Health shows that the growing tendency of obesity among children today is caused by addition to junk food and lack of physical exercise. It adversely affects their learning power. Write a speech in 120 -150 words to be delivered in the morning assembly of the school highlighting the importance of good health and motivating the children to eat healthy,balance diet. 2. You have to give a speech on "I love my city" in a function organised by the cultural club of your school write a speech in about 120 to 150 words. You may focus on one or two aspects of your city or present a comprehensive picture, try to visit Manav Sangrhalay, click photographs and paste it in your project. 3. 'Rain harvesting is the only solution to water crisis in the present times.' Write a debate either for or against the motion in 120 to 150 words .You are Sujata/ Ajith. 4. Which universal truth of life does the poem,'Aphotograph'reflect upon? 5. Draw a character sketch of Khushwant Singh's grandmother as portrayed by him in the lesson,' The portrait of a Lady'
HINDI	1.अपने प्रिय समाचारपत्र या पत्रिका के बारे में 300 शब्दों की एक टिप्पणी लिखिए उसमें उसकी खूबियों और खामियों को स्पष्ट कीजिए। यह भी बताइए कि आप वह समाचारपत्र या पत्रिका कब से पढ़ रहे/रही हैं? क्या आप रोज़ अखबार पढ़ते/पढ़ती हैं? क्या आप पूरा अखबार/पत्रिका पढ़ते/पढ़ती हैं? क्या आपको लगता है कि आपका पसंदीदा अखबार/पत्रिका आपको सूचना, शिक्षा और मनोरंजन देता है? 2. दिए गए तीन विषयों में से किसी एक विषय पर संवादों की सहायता से संक्षिप्त स्क्रिप्ट लिखिए- क) नदियों में प्रदूषण ख) नल से लगातार बहता हुआ पानी ग) स्कूली बच्चों पर बस्ते का बोझ प्रश्न-3. आपके आसपास किसी ऐसी चीज पर एक लेख लिखें जो आपको किसी वजह से वर्णनीय प्रतीत होती हो। वह कोई चाय की दुकान हो सकती है, कोई सैलून हो सकता है, कोई खोमचे वाला हो सकता है या किसी खास दिन पर लगने वाला हाट- बाजार हो सकता है। विषय का सही अंदाजा देने वाला शीर्षक अवश्य दें तथा चित्र चिपकाएँ ।

	प्रश्न-4. आप अखबार के मुख्य पृष्ठ पर कौन-से छह समाचार शीर्षक /सुर्खियां (हेडलाइन) देखना चाहेंगे । उन्हें लिखिए तथा समाचार पत्र का नाम देते हुए मुख्यपृष्ठ (फ्रंट पेज) तैयार कीजिए। प्रश्न-5. परियोजना कार्य
MATHEMATICS	**Q.1 Write the solution set of the equation $x^2 + x - 2 = 0$ in roster form** **Q.2 Write the set {x : x is a positive integer and $x^2 < 40$} in the roster form.** **Q.3 Which of the following are sets ? Justify your answer. (i) The collection of all the months of a year beginning with the letter J.** **(ii) The collection of ten most talented writers of India.** **(iii) A team of eleven best-cricket batsmen of the world.** **(iv) The collection of all boys in your class.** **(v) The collection of all natural numbers less than 100.** **(vi) A collection of novels written by the writer Munshi Prem Chand.** **(vii) The collection of all even integers.** **Q.4 Let A = { a, e, i, o, u} and B = { a, b, c, d}. Is A a subset of B ? No. (Why?). Is B a subset of A? No. (Why?)** **Q.5 Given the sets A = {1, 3, 5}, B = {2, 4, 6} and C = {0, 2, 4, 6, 8}, which of the following may be considered as universal set (s) for all the three sets A, B and C (i) {0, 1, 2, 3, 4, 5, 6} (ii) φ (iii) {0,1,2,3,4,5,6,7,8,9,10} (iv) {1,2,3,4,5,6,7,8}** **Q.6 Let A = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10} and B = { 2, 3, 5, 7 }. Find A ∩ B and hence show that A ∩ B = B.** **Q.8 . If A and B are two sets such that A ⊂ B, then what is A ∪ B ?** **Q.9 If R is the set of real numbers and Q is the set of rational numbers, then what is R – Q?** **Q.10 . Let A and B be two sets such that n(A) = 3 and n(B) = 2. If (x, 1), (y, 2), (z, 1) are in A × B, find A and B, where x, y and z are distinct elements.** **Q.11 The Cartesian product A × A has 9 elements among which are found (–1, 0) and (0,1). Find the set A and the remaining elements of A × A.** **Q.12 Let A = {1, 2, 3,....,14}. Define a relation R from A to A by R = {(x, y) : 3x − y = 0, where x, y ∈ A}. Write down its domain, codomain and rang** **Q.13 Determine the domain and range of the relation R defined by R = {(x, x + 5) : x ∈ {0, 1, 2, 3, 4, 5}}.**

	Q.14 Let R be the relation on Z defined by R = {(a,b): a, b ∈ Z, a − b is an integer}. Find the domain and range of R. **Q.15 .** If the set A has 3 elements and the set B = {3, 4, 5}, then find the number of elements in (A×B)
BIOLOGY	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 2. Write Practical Activities in Practical File. 3. Prepare Unit 1
PHYSICS	(A) Write the following Activities in activity file: **SECTION- A** 1.To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm. 2.To measure the force of limiting friction for rolling of a roller on a horizontal plane 3.To study the variation in range of a projectile with angle of projection. **SECTION- B** 1.To observe change of state and plot a cooling curve for molten wax. 2. To study the effect of detergent on surface tension of water by observing capillary rise. 3. To observe the decrease in pressure with increase in velocity of a fluid. (B) Prepare the following chapters. 1.Units and Measurement 2. Motion in a straight line. concepts of Average speed, average velocity, acceleration differentiation and integration based questions of velocity and acceleration. Derivatives of equation of motion by calculus method and its numericals. Position-time, velocity- time graph for moving objects.
CHEMISTRY	1. Prepare Investigatory Project on any one topic 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

Topics of Investigatory Project:
i) To determine the hardness of water.
ii)To compare the foaming capacities of different sample of soaps.
iii) To detect the presence of adulteration in samples of chilli powder,turmeric powder and pepper.

SUBJECT ASSIGNMENT-
Chapter- 1 Some Basic Concept Of Chemistry
Answer the following questions –
1.How many significant figures should be present in the answer of the following calculations?

$$\frac{2.5 \times 1.25 \times 3.5}{2.01}$$

2. If 4 g of NaOH dissolves in 36 g of H_2O, calculate the mole fraction of each component in the solution. Also, determine the molarity of solution (specific gravity of solution is 1g mL^{-1}).

Think and answer-
 . a)Name the most reactive element which can be cut with the help of knife?
   b) what this element catches fire, when comes in contact with water?

Chapter – 2 Structure of atom
Answer the following question-
1. Why electrons first field in 4s and then in 3d orbitals?
2.What will be the value of four quantum numbers for the last electron of a magnesium atom?
Think and answer-
Why the electron revolving around the positive nucleus does not fall in it?

CRITICAL THINKING WORKSHEET-
(Answer the following questions with appropriate reason)
1.Two students performed the same experiment separately and each one of them recorded two readings of mass which are given below. Correct reading of mass is 3.0 g. On the basis of given data, mark the correct option out of the following statements.

Student	Readings	
	(i)	(ii)
A	3.01	2.99
B	3.05	2.95

(i) Results of both the students are neither accurate nor precise.

(ii) Results of student A are both precise and accurate.

(iii) Results of student B are neither precise nor accurate.

(iv) Results of student B are both precise and accurate

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2. A measured temperature on Fahrenheit scale is 200 °F. What will this reading be on Celsius scale?

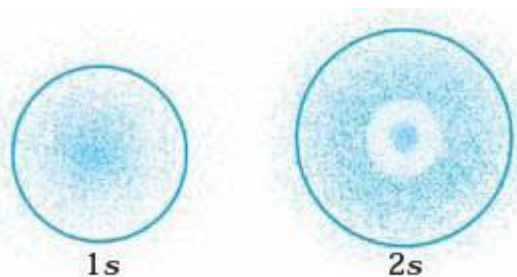(i) 40 °C (ii) 94 °C (iii) 93.3 °C (iv) 30 °C

3. What will be the molarity of a solution, which contains 5.85 g of NaCl(s) per 500 mL?

(i) 4 mol L^{-1} (ii) 20 mol L^{-1} (iii) 0.2 mol L^{-1} (iv) 2 mol L^{-1}

4. The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What will be the molecular formula of the compound?
(i) $C_9H_{18}O_9$ (ii) CH_2O (iii) $C_6H_{12}O_6$ (iv) $C_2H_4O_2$

5. The probability density plots of 1s and 2s orbitals are given in Fig. 2.1

1s   2s

Fig. 2.1

The density of dots in a region represents the probability density of finding electrons in the region.
On the basis of above diagram which of the following statements is incorrect?
(i) 1s and 2s orbitals are spherical in shape.

(ii) The probability of finding the electron is maximum near the nucleus.

(iii) The probability of finding the electron at a given distance is equal in all directions.

(iv) The probability density of electrons for 2s orbital decreases uniformly as distance from the nucleus increases.

6. Out of the following pairs of electrons, identify the pairs of electrons present in degenerate orbitals :

(i) (a) $n = 3$, $l = 2$, $m_l = -2$, $m_s = -\dfrac{1}{2}$

(b) $n = 3$, $l = 2$, $m_l = -1$, $m_s = -\dfrac{1}{2}$

(ii) (a) $n = 3$, $l = 1$, $m_l = 1$, $m_s = +\dfrac{1}{2}$

(b) $n = 3$, $l = 2$, $m_l = 1$, $m_s = +\dfrac{1}{2}$

(iii) (a) $n = 4$, $l = 1$, $m_l = 1$, $m_s = +\dfrac{1}{2}$

(b) $n = 3$, $l = 2$, $m_l = 1$, $m_s = +\dfrac{1}{2}$

(iv) (a) $n = 3$, $l = 2$, $m_l = +2$, $m_s = -\dfrac{1}{2}$

(b) $n = 3$, $l = 2$, $m_l = +2$, $m_s = +\dfrac{1}{2}$

7. Consider the isoelectronic species, Na^+, Mg^{2+}, F^- and O^{2-}.
The correct order of increasing length of their radii is .
(i) $F^- < O^{2-} < Mg^{2+} < Na^+$ (ii) $Mg^{2+} < Na^+ < F^- < O^{2-}$
(iii) $O^{2-} < F^- < Na^+ < Mg^{2+}$ (iv) $O^{2-} < F^- < Mg^{2+} < Na^+$

8. Justify the given statement with suitable examples— "the Properties of the elements are a periodic function of their atomic numbers".

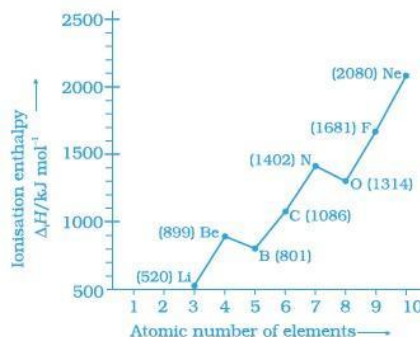9. Explain the deviation in ionisation enthalpy of some elements

Fig. 3.2

from the general trend by

10. An element belongs to 3rd period and group-13 of the periodic table. Which of the following properties will be shown by the element?
(i) Good conductor of electricity (ii) Liquid, metallic

(iii) Solid, metallic   (iv) Solid, non metallic

PHYSICAL EDUCATION	**Multiple choice questions** **Q1. The aim of physical education is to improve the physique by activities a. Political b. Physical c. Psychological d. Economic**

	Q2. What is the main goal of physical education? a. physical development b. Mental development c. Social Development d. all round development **Given below are the questions labeled as Assertion (A) and Reason (R). Select the most appropriate answer from the options given below:** **a. Both (A)and (R)are true and (R) is the correct explanation of (A).** **b. Both (A)and (R)are true, but (R) is not the correct explanation of (A).** **c. (A) is true, but (R) is false.** **d. (A) is false, but (R) is true.** **Q3.Assertion (A): Physical education is the development of built it qualities in the child through physical activities.** **Reason: Physical education helps achieve all round development.** **Q4. Assertion (A): Training of mind is not possible by keeping the body separate. Reason (R): The body is the basis and the mind is its integral part.** **Q5. Write a note on the teaching career in physical education.** **Q6. Write a note on the medical career in physical education.** **Q7. Write a short note on khelo india programme.** **Q8. Write fact and objective of fit india programme.** **Q9. Write benefits and paste pictures of following Asanas - i. Tadasna ii.Padmasana. Q10. Prepare practical record files according to prescribed syllabus.** **Q11. Write the importance of physical activity during the COVID-19 pandemic**
INFORMATICS PRACTICES	## Ch- 1 Computer System ## Answer the following Questions: **Q1. Briefly explain the basic architecture of a computer.** **Q3. What is the function of CPU in a computer system? What are its subunits?** **Q2. Distinguish between CPU and ALU.** **Q3. What is the meaning of the term volatile primary memory? What can be done to overcome the problems of volatility ?** **Q4. Distinguish between internal and external memory.** **Q5. What is the role of memory in a computer functioning? What types of memory does the computer work with ?** **Q6. What is GPU? How is it useful?** **Q7. What is the significance of SoC ?** **Q8. What is system software? What role does it play in the functioning of the computer?**

Q9. Discuss the role of utility software in the context of computer performance.

Q10. What is the importance of an OS ?

Ch-2 Getting started with python

Q1 = What is a cross-platform software?

Q2 = What are the advantages of Python programming language ?

Q3 = What are some limitations of Python programming language?

Q4 = In how many different ways, can you work in Python?

Q5 = What are advantages/disadvantages of working in Interactive mode in Python?

Q6 = What are the advantages/disadvantages of working in script mode in Python ?

Q.7 Type following code (as it is) in the new window opened by IDLE

print ("Hello Nathan", "Hello Lalit")

greet1 = "Hello Nathan"

greet2 = "Hello Lalit"

name1 = "Nathan"

name2 = "Lalit"

print (greet1, greet2)

print ("Hello", name1, ",", name2)

name1 = "Purvi"

name2 = "Hunar"

print ("Hello", name1, ",", name2)

* Save program file:- Save the file by pressing Ctrl+S or File → Save command

* Run program:- Click Run → Run Module command or press F5.

	Notice the output and compare it with code.
DATA SCIENCE	**Ch-1 Ethics in Data Science** **Answer the Following Questions:** 1) Explain in detail how data has evolved over time. 2) Explain with relevant examples why data scientists need to understand data and follow data ethics? 3) What is data governance framework? 4) What are some of the benefits of implementing data governance framework? **Higher Order Thinking Skills (HOTS)** **answer the questions below in no less than 200 words.** 1) What, according to you, should be the ethical principles for conducting research that involves dealing with other people's data? 2) Should there be differences in expectations about what is ethical online versus offline regarding handling of data? **Applied Project** Suppose you have visited a restaurant for dining. At the end of the meal, the restaurant manager provides you with a form wherein you need to fill up your details along with your contact number. According to the manager, the purpose for collecting this data is to enable them to inform us of the exciting deals as and when they come up. Explain in detail, the precautions you need to take before handing out your details to the restaurant manager. **Ch-1 Assessing Data** **Answer the Following Questions:** 1) Write down three instances of stories and justify why you think they are stories? 2) Write down three facts and justify why you think they are facts? 3) What is correlation? (Support your answer with two examples of correlation) 4) What is the difference between positive and negative correlation? 5) What is causation? (Support your answer with two examples of causation) **Higher Order Thinking Skills (HOTS)** **answer the questions below in no less than 200 words.** 1) Is there a correlation between speaking and writing skills of an individual?

	2) If outdoor runners have higher skin disease occurrences due to time exposure in the sun, think of an independent variable that can be used to test the relationship between running and skin diseases. What alternatives can one look for to negate the problem arising out of running outdoors in the sun? 3) Suppose you are reading a newly published fiction of your favorite author. The story turns out to be thoroughly engrossing, according to you. Describe your personal experience while reading the book about the time you took to complete the reading.(In the description, please mention whether it felt like it is taking too long to complete or was it the other way around). Once you have described your experience, kindly note down **what you can infer from this.** **Applied Project** Consider a company manufacturing metal utensil for home cookware. The company has a factory in which 200 workers work on an everyday basis. Describe in detail how the set-up of the factory (proper equipment, safety measure and infrastructure) has a correlation and causal relationship with workers of the factory. Also, try to derive the correlation between workers of the factory, the profitability and sustenance of the company. One should also think about the end product the customers will be using and what difference it may cause to their lives.

CLASS TEACHER- MR. ANIL KUMAR TIWARI