

GURUKUL INTERNATIONAL SCHOOL, Haldwani
HOME WORK FOR WINTER BREAK (2024-25)

Class - XI Science

ENGLISH-

- 1 Below are listed some task for creative writing. Do them daywise in A4 sheets and compile together.
DAY 1: Someone who inspires you
DAY 2: Your future goals
DAY 3: Things that make you happy.
DAY 4: List any 10 facts about yourself
DAY 5: A letter to your favourite person
- 2 Prepare a project work on 'Silk Road' under the following headings:
 - a) About the author
 - b) Characters
 - c) Narrator's experience of Stony Plain
 - d) The encounter with snow
 - e) Author's reaction on reaching home
 - f) Problems at Darchen and meeting with Norbu.
 - g) His dream of Kora
- 3 Write the autobiography of 'TIME MACHINE' in about 120-150 words.
- 4 **ASL -Speaking Skills**
Write the speech of any great and famous leader who inspires you in 300 words in your English notebook and learn it for assessment of speaking skills (ASL)

MATHEMATICS –

- 1 A certain number of persons are sitting in a linear row facing the north. Three persons are sitting between X and T, who is sitting adjacent to Q. X is on the left of Q. H is sitting 2nd to the right of Q. Two persons are sitting between H and S who is sitting at one of the ends. S is not sitting adjacent to Q, who is sitting 2nd to the right of L. L is sitting exactly in the middle of the row. J is sitting 6th from the left end. X is not sitting to the right of J. Two persons are sitting between J and R. Two persons are sitting between X and K.
How many persons are sitting to the left of Q ?
- 2 Statements: $Y < E \leq O, L > X \leq T < E, K \geq D > B, U \leq G < B = N$
Conclusions: I. $D > U$
- 3 $5 \in 8 \% M V \forall \textcircled{4} \# \mu @ 2 3 Z B N \text{£} \beta 9 X C \$ \infty 6 7 \& *$
 - i) How many symbols are there in the series each of which is immediately preceded by a consonant and immediately followed by a symbol ?
 - ii) Which amongst the following element is 8th to the left of 4th number from right end ?
 - iii) How many elements are there between M and C if all the symbols are dropped down from the given series?
- 4 In a family, there are 9 family members having 3 generations. Male members will be lesser than female members. N is mother in law of P who is son of S. C's father has only one son who is married to D. N is mother of C. Q is sister in law of D. D is aunt of L who is unmarried. L is grandchild of N. M is not married to S. C is father of T who is grandson of M. M is married to C's mother.
How is T related to C ?
- 5 **AIL (Art Integeration Learning)**
To find number of different routes from a particular place to the state capitals of Meghalaya and Arunanchal Pradesh. NOTE: ODD Roll Numbers to work for Maghalaya and EVEN Roll Numbers to work for Arunanchal Pradesh.

OR

Select any one parabolic bridge each in Haryana and Telangana. Find the equation of parabola for those bridges.

PHYSICS–

- 1 What is meant by thermal stress? Find the thermal stress developed in a steel rail Of length 5m and area of cross section 40 cm^2 that is prevented from expanding while temperature rises by 10°C . The coefficient of thermal expansion of steel is $1.2 \times 10^{-5} \text{ K}^{-1}$. Also find the amount of external force required to bend the rails.
- 2 Show that the coefficient of area expansion, $(\Delta A/A)/\Delta T$, of a rectangular sheet of the solid is twice its linear expansivity α .
- 3 A blacksmith fixes iron ring on the rim of the wooden wheel of a bullock cart. The diameter of the rim and the iron ring are 5.243 m and 5.231 m respectively at 27°C . To what temperature should the ring be heated so as to fit the rim of the wheel ?
- 4 What are the factors on which the quantity of heat required to raise the Temperature of a substance depend ? Give the relation to find the same. Define specific heat capacity of a substance.

- 5 Name the substance which has high specific heat capacity. Also explain why in Desert areas, the earth surface warms up quickly during the day and cools quickly at night ?
- 6 A sphere of aluminium of 0.047 kg placed for sufficient time in a vessel containing Boiling water, so that the sphere is at 100°C. It is then immediately transferred to 0.14 kg copper calorimeter containing 0.25 kg of water at 20°C. The temperature of water rises and attains a steady state at 23°C. Calculate the specific heat Capacity of aluminium.
- 7 Define normal melting point of a substance. ? What are the two states of the substance which are in thermal equilibrium at melting point of a substance? Plot a graph showing the variation of temperature with time in case of water. Also Briefly explain what will you understand from the graph?
- 8 What is meant by regelation? Also state why skating is possible on snow?
- 9 What is meant by triple point of a substance? State for what values of Temperature and pressure the triple point of water exists ?
- 10 Explain Carnot cycle along with p-V diagram. Prove that the efficiency of a Carnot engine depends only on absolute temperature of high and low thermal energy reservoir.

CHEMISTRY –

- 1 Write the products of the followings
 - a) Butyne reacts with Na/liquid NH₃
 - b) But-2-ene reacts with HCl
 - c) Benzene reacts with ozone followed by Zn/ H₂O
 - d) Combustion of propyne
- 2 Write the mechanism of bromination of ethane.
- 3 Chromatography method becomes the highly used technique in analysis and purification world. Justify it.
- 4 Make a project on any one of the following topics-
 - a) Study of the acidity of different samples of tea leaves and reasons for the variation in colour of tea prepared from these leaves.
 - b) Study the rates of evaporation of different liquids.
 - c) Study of the acids and mineral contents of vegetables and fruits.
 - d) To study the methods of purification of water.

BIOLOGY –

- 1 Give reason for the following questions
 - a) Diffusion of carbon dioxide by diffusion membrane per unit difference in partial pressure is much greater compared to oxygen .
 - b) Fossa ovalis is the reminiscent of foramen ovale in heart.
 - c) Sino – atrial node is natural pacemaker of heart.
- 2 Given below are the three health issues, knowing their consequences recognize the diseases their causes and treatment.
 - i) In his drawing Aman asked the children to paint an apple tree while all the Other children were busy painting, he saw little Aryan struggling with selection of colours. He was not able to distinguish between red and green.Aman called his parents &discussed the matter with them.
 - ii) Mr. Sharma is a old man with a weakness for sweets and fried foods. His idea of exercise is to walk to the Kitchen for more potato chips, chocolate and ice creams to eat while he is watching sports on television. Lately. He’s been troubled by chest pains when he walks upstairs. His son Rajeev was worried about his father’s health and took him to the doctor. The doctor advised him to refrain from frying food and scheduled cardiac angiography for next week.
 - iii) Ravi served as a medical officer in a remote village. He observed that most of his patients had a swollen throat. He tried treating his patients and simultaneously sought the help of his friend associated with an NGO in the city to spread health awareness. Together, they organized campaigns to make the people aware of their health condition and tried to implement a simple control measure to rectify the condition by supplementing a mineral in their diet.
- 3 **Art Integrated learning**
Prepare a project showing the exact position/ location of organs in human body including all the systems such as Digestive system, Cardiovascular system, Respiratory system , Excretory system, Reproductive system. Display this AIL in chart.

PHYSICAL EDUCATION

- 1 Based on your research, discuss the connection between physical exercise and mental well-being. How does regular physical activity affect stress, anxiety, and depression in teenagers? Provide examples of physical activities that can help improve mental health.
- 2 Write an essay on the benefits of aerobic exercises for cardiovascular health. How do activities like running, swimming, or cycling improve heart function and lung capacity? Include any relevant studies or scientific data you find in your research.

- 3 After participating in a team sport for a week, describe how it affected your teamwork, communication, and overall physical fitness. What skills did you develop during this time? How does team sports participation contribute to personal and social growth?
- 4 Research the importance of flexibility in maintaining joint health and preventing injuries. What are the best practices for improving flexibility, and what impact does it have on performance in sports or physical activities.
- 5 Write a report on how nutrition impacts athletic performance and recovery. What should an athlete's diet include before and after intense physical activity to maximize performance and recovery? How do proteins, carbohydrates, fats, and hydration play different roles?

HINDI –

- 1 'खान पान की बदलती तस्वीर' विषय पर एक आलेख लिखिए।
- 2 किसी समाचार पत्र के संपादक को एक पत्र लिखिए जिसमें यातायात जाम की समस्या और सुझावों का उल्लेख हो।
- 3 जीवन में आत्मविश्वास का महत्त्व विषय पर एक रचनात्मक लेख लिखिए।
- 4 'मेरे जीवन का सबसे सुखद दिन' विषय पर डायरी लेखन कीजिए।
- 5 परीक्षा के दौरान तनाव की स्थिति से कैसे निपटा जा सकता है ? अपने सुझाव दीजिए।

COMPUTER–

- 1 Ritika downloaded some attachments from internet onto her computer. When she open those attachments ,she found multiple copies of same file opened. Also after some time her system started rebooting itself. What do you think has happened to her files and to her computer. Explain.
- 2 Give one word answer
 - i) It is doing business online.
 - ii) It is the crime committed using computers and internet
 - iii) The programmer that breaks into secure systems with non-malicious intentions.Write a Python program that defines a function to generate random passwords of a specified length. The function takes an optional parameter length, which is set to 8 by default. If no length is specified by the user, the password will have 8 characters.
- 4 **AIL based question**
Draw a flow chart of Python program that creates a password strength meter. The program should prompt the user to enter a password and check its strength based on criteria such as length, complexity, and randomness. Afterwards, the program should provide suggestions for improving the password's strength.