

GURUKUL INTERNATIONAL SCHOOL, Haldwani
HOME WORK FOR WINTER BREAK (2023-24)

Class - XI Sci

ENGLISH-

- 1 Below are listed some task for creative writing. Do them daywise in A4 sheet 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 Plane
 - d) The encounter with snow
 - e) Author's reaction on reaching Hor
 - 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.
NOTE : All work should be hand written.
Insert proper pictures wherever necessary (in project)

MATHEMATICS –

- 1 If a, b, c are in G.P. and $a^{1/x} = b^{1/y} = c^{1/z}$, prove that x,y,z are in A.P.
- 2 Sum the series $3.8 + 6.11 + 9.14 + \dots$ To n terms.
- 3 Find the equation of the perpendicular bisector of the line segment joining the points A (2, 3) and B (6, -5).
- 4 Find the equation of the line mid - way between the parallel lines $9x + 6y - 7 = 0$ and $3x + 2y + 6 = 0$.
- 5 Find the vertex, axis, focus, directrix, latus – rectum of the following parabola. Also draw their rough sketches
 - i) $4y^2 + 12x - 20y + 67 = 0$
 - ii) $x^2 + 2y - 3x + 5 = 0$
- 6 Find the equation of the circles which pass through the origin and cut off equal chords of length 'a' from the straight lines $y = x$ and $y = -x$.

PHYSICS–

- 1 Explain the meaning of the coefficients of linear (a), superficial (B) and volume expansion (y) of a solid material. Establish relationship among a, B and y.
- 2
 - a) Discuss the anomalous expansion of water.
 - b) Discuss the variation of the density of liquids with temperature.
- 3 A drop of oil placed on the surface of water spreads out, but water drops dropped in oil are compressed. Explain both the phenomena.
- 4 Two uniform solid spheres of same radius R, but of masses M and 4M are fixed at a distance 6 R apart. A projectile of mass m is projected from the surface of the lighter sphere (mass M) directly towards the centre of the heavier sphere (mass 4 M). Find expression for the minimum speed v of the projectile so that it reaches the surface of the heavier sphere. (Neglect the effect of gravity)
- 5 What is meant by 'centre of mass' of a system? Obtain expressions for the centre of mass of a system consisting of two particles. What is the physical significance of the centre of mass of a system?
- 6 Prepare a project file on the topic given
 - i) Pressure
 - ii) Equation of continuity
 - III) Bernoulli's Theorem and its two applications
 - iv) Stokes Theorem
 - iv) Terminal Velocity

CHEMISTRY –

- 1 Two liquids (A) and (B) can be separated by the method of fractional distillation. The boiling point of liquid (A) is less than boiling point of liquid (B). Which of the liquids do you expect to come out first in the distillate? Explain.
- 2 Why do alkenes prefer to undergo electrophilic addition reaction while arenes prefer electrophilic substitution reactions? Explain.
- 3 Alkynes on reduction with sodium in liquid ammonia form trans alkenes. Will the butene thus formed on reduction of 2-butyne show the geometrical isomerism?
- 4 An unsaturated hydrocarbon 'A' adds two molecules of H₂ and on reductive ozonolysis gives butane-1,4-dial, ethanal and propanone. Give the structure of 'A', write its IUPAC name and explain the reactions involved.
- 5 In the presence of peroxide addition of HBr to propene takes place according to anti Markownikoff's rule but peroxide effect is not seen in the case of HCl and HI. Explain.
- 6 Prepare a project file (investigatory project) .
Note: Prepare a separate file for holiday H.W. and project.

BIOLOGY –

- 1 As a part CBSE Art Integrated Program prepare a project file on given topics integrated with art.
- 2 Describe the subphases of prophase I. Enumerate the chromosomal event during each stage.
- 3 Take one cucumber, Apple, tomato, chili and lemon. Cut the transverse and longitudinal section of each fruit observe the arrangement of seeds. Draw the diagram.
- 4 On an educational trip to Uttarakhand ketki and friends observe that many local peoples were having swollen necks. Please help ketki and a friends to find out the solutions to the following questions.
 - a) Which probable disease are these people suffering from ?
 - b) How is it caused ?
 - c) What effect does this condition have on pregnancy ?
- 5 Give the production of ATP from the products of kreb's cycle using the diagram of ETS.
- 6 What are the main parts involved in initiating a pressure gradient between the lungs and atmosphere during normal respiration.

OR

- 1 Distinguish between vital capacity and total lung capacity, D- wave and T-wave and IRV and ERV.
- 7 Explain the hormones of the adrenal gland and their action on target tissue in a tabular form.

PHYSICAL EDUCATION

- 1 Describe Changing Trends in sports and games in terms of changes in playing surface, wearable gears, equipment technological advancements.
- 2 Draw a labelled diagram 400 m track and field with computations
- 3 What is circulatory system ? Explain the structure, location and functions of hearts.

HINDI –

- 1 अपने नगर के जलापूर्ति अधिकारी को पर्याप्त और नियमित रूप से पानी न मिलने की शिकायत करते हुए पत्र लिखिए।
- 2 'ऑनलाइन खरीदारी समय की मांग' विषय पर एक रचनात्मक लेख लिखिए।
- 3 अपने क्षेत्र में पेड़ पौधे के अनियंत्रित कटाव को रोकने के लिए अपने जिलाधिकारी को एक प्रार्थना पत्र लिखिए।
- 4 आप रोहित/रोहिणी हैं किसी प्रतिष्ठित स्कूल में हिंदी के अध्यापक/अध्यापिका के लिए अपना स्ववृत्त (बायोडाटा) तैयार कीजिए।
- 5 जीवन में सदाचार और शिष्टाचार के महत्व को बताते हुए एक आलेख लिखिए।
- 6 'हमारी संस्कृति हमारी पहचान' विषय से संबंधित पोस्टर बनाइए।

COMPUTER–

- 1 Write a brief note on python.
- 2 Write a program that returns the largest even number in the list of integers.If there is no even number in the input, print " No even element".
- 3 Write a program to print table of a number using looping statement.
- 4 Write a program to enter a age of a person and check whether he/ she is eligible to cast a vote or not.
- 5 Write a program to swap two numbers.
- 6 Write an expression to create a Tuple and dictionary in python with examples.

Note : Do all the above given work in a practical notebook and paste or write the output on the blank side of the practical note book.