

GURUKUL INTERNATIONAL, Haldwani
HOME WORK FOR WINTER BREAK

Class - XI Sci

Set – I (Duration- 01.01.2019 to 05.01.2019)

ENGLISH-

- 1 On the occasion of World Heritage day design a poster highlighting the need to preserve the monuments of our country. You are Amit/Anita the President of the social science club.
- 2 You are Shahid/Sakshi of B-3/230, Vivek Vihar, Delhi last month you bought a Samsung Led TV from Delhi electronics, Patel Nagar. Now it is not working properly. Write a letter in about 120-150 words to the dealer complaining about it.
- 3 The blood stain on the floor near the fireplace was not actually a bloodstain. Elaborate.
- 4 Attempt a brief character sketch of the ghost of Sir Simon Canterville.
- 5 You participated in a career counseling programme organised by careers. India you had the opportunity of listening to professional from various fields like food technology, fashion technology etc. write a report of the programme for career times in about 150-200 words.

MATHEMATICS –

- 1 Find equation of ellipse with focus at (1, 1) and eccentricity $1/2$ and directrix $x - y + 3 = 0$.
- 2 If e and e' be eccentricities of hyperbole and its conjugate . Prove that $\frac{1}{e^2} + \frac{1}{e'^2} = 1$
- 3 Find equation of ellipse whose eccentricity is $1/2$, the focus is $(-1, 1)$ and directrix $x - y + 3 = 0$.
- 4 Find equation of ellipse whose axis are along the coordinate axis, vertices are $(\pm 5, 0)$ foci $(\pm 4, 0)$.
- 5 Show that line joining $(2, -3)$ & $(-5, 1)$ is parallel to the line joining $(7, -1)$ and $(0, 3)$.
- 6 Find angle between x -axis and the line joining the points $(3, -1)$ and $(4, -2)$.

PHYSICS–

- 1 How much below the surface does the acceleration due to gravity become 10% of its value on the surface of earth. Radius of earth = 6.4×10^6 m.
- 2 Find the greatest length of copper wire, that can hang without breaking. Breaking stress = 7.2×10^7 N/m². Density of copper 7.2 g/c.c., $g = 10$ m/s².
- 3 Why does the cotton wick in an oil lamp keep on burning ?
- 4 What are the important properties of striamines ?
- 5 What is latent heat ?

CHEMISTRY –

- 1 Why is a freshly prepared saturated solution of ferrous sulphate used in the Lassaigne's test for nitrogen ?
- 2 Write all the acyclic and cyclic isomers having the molecular formula C_3H_6O .
- 3 Draw the Electrochemical cell with salt bridge.

BIOLOGY –

- 1 Explain with the help of a diagram the structure of any monocotyledonous seed.
- 2 What do you mean by – critical concentration, toxicity of micronutrient
- 3 Explain C_4 cycle with the help of a diagram.
- 4 What is the fate of NH_3 produced by nitrogenase of the bacteria ?

HINDI –

- 1 'कन्या भ्रूण हत्या' विषय पर एक लेख लिखिए।
- 2 निम्नलिखित विषयों पर फीचर लिखिए।
1 बालश्रम की भयावह स्थिति 2 एकल परिवारों में बुजुर्गों की स्थिति
- 3 औपचारिक एवं अनौपचारिक पत्रों के तीन-तीन उदाहरण लिखिए।

Set - II (Duration- 06.01.2019 to 10.01.2019)

ENGLISH-

- 1 On the occasion of the World Heritage day, your school has decided to plan an excursion to the various heritage sites in Delhi. As the Cultural Secretary of the school. Draft a notice inviting the name of the participants for the trip.
- 2 The summer holidays are about to start and you want to utilize the break by learning to operate computers. Write a letter to the Manager. Learn Tech, Delhi, inquiring about the courses they provide and other necessary details.
- 3 Write an article in about 150-200 words about the role that value based education can play in unlifting the degrading standards of the modern society.
- 4 Through "The Canterville Ghost" is a story related to a ghost, it is rather humorous. Elaborate.
- 5 What impression do you form about Mr. Otis after reading the novel ?

MATHEMATICS –

- 1 Find the equation of parabola whose focus is $(-3, 2)$ and directrix is $x + y = 4$.
- 2 If P is a point on hyperbole whose axes are equal, prove that $sp.s'p = cp^2$
- 3 Find equation of parabola whose focus is point $(0, 0)$ and whose directrix is straight line $3x - 4y + 2 = 0$.
- 4 Find the locus of middle points of all chords of parabola $y^2 = 4ax$ which are drawn through the vertex.
- 5 Find equation of parabola whose focus is $(1, 1)$ and tangent at vertex is $x + y = 1$.
- 6 Find the vertex, focus and directrix of the parabola $4y^2 + 12x - 12y + 39 = 0$.

PHYSICS–

- 1 A certain gas at atmospheric pressure is compressed adiabatically so that its volume becomes half of its original volume. Calculate the resulting pressure in nm^{-2} . Take $\gamma = 1.4$ for air.
- 2 What is different between periodic motion & oscillatory motion ?
- 3 Give an expression for total energy of S.H.M.
- 4 Mention the assumptions of kinetic theory of gases ?
- 5 Calculate the work done in breaking a water drop of radius 1 mm into 1000 drops. Surface tension of water = $72 \times 10^{-3} \text{ Nm}^{-1}$.

CHEMISTRY –

- 1 Write the general introduction of Alkali metals and alkaline earth metals.
- 2 Write the biological importance of Mg and Ca.
- 3 Explain the α particle models of Rutherford's.

BIOLOGY –

- 1 Why is abscisic acid also known as stress hormone ?
- 2 Explain the following terms with an example of each –
a) Perianth flower b) Zygomorphic c) epipetalous d) apocarpous e) Imbricate aestivation
- 3 Explain the criteria used to classify animals into different phyla.
- 4 With the help of a diagram only explain the life cycle of Bryophytes & Pteridophytes.

HINDI –

- 1 'अच्छे व्यवहार का जीवन में महत्व' विषय पर अपने विचार लिखिए।
- 2 'हिन्दुस्तान से दूर होती हिंदी' विषय पर आलेख लिखिए।
- 3 'बाढ़ की विभीषिका' अथवा 'मेरा जीवन स्वप्न' विषय पर एक निबन्ध लिखिए।