SRI RAMKRISHAN DAV PUBLIC SCHOOL SURIYA, GIRIDIH

SUMMER VACATION HOMEWORK- (2024-25)

STD: X

MATHEMATICS

1. Given that HCF (306, 657) = 9, find LCM (306, 657).

2. Prove that $3 + 2\sqrt{5}$ is irrational.

3. Check whether 6^n can end with the digit 0 for any natural number n.

4. Find HCF and LCM of 404 and 96 and verify that HCF × LCM = Product of the two numbers.

5. What is the HCF of the smallest prime number and the smallest composite number?

6. Find the value of "p" from the polynomial $x^2 + 3x + p$, if one of the zeroes of the polynomial is 2.

7. Compute the zeroes of the polynomial $4x^2 - 4x - 8$. Also, establish a relationship between the zeroes and its coefficients.

8. Find the quadratic polynomial if its zeroes are 0 and $\sqrt{5}$.

9. α and β are zeroes of the quadratic polynomial $x^2 - 6x + y$. Find the value of 'y' if $3\alpha + 2\beta = 20$.

10. Find a quadratic polynomial whose zeroes are reciprocals of the zeroes of the polynomial $f(x) = ax^2 + bx + c, a \neq 0$.

11. On comparing the ratios a1/a2, b1/b2, and c1/c2, find out whether the following pair of linear equations are consistent or inconsistent.

      (i) 3x + 2y = 5 ; 2x – 3y = 7   (ii) 2x – 3y = 8 ; 4x – 6y = 9

12. Solve the following pair of linear equations by the substitution method.

    (i) x + y = 14 ,   x – y = 4   (ii) 3x – y = 3 ,   9x – 3y = 9

13. Solve 2x + 3y = 11 & 2x – 4y = –24 and hence find the value of 'm' for which y = mx + 3.

14. The coach of a cricket team buys 7 bats and 6 balls for Rs.3800. Later, she buys 3 bats and 5 balls for Rs.1750. Find the cost of each bat and each ball.

15. A lending library has a fixed charge for the first three days and an additional charge for each day thereafter. Saritha paid Rs.27 for a book kept for seven days, while Susy paid Rs.21 for the book she kept for five days. Find the fixed charge and the charge for each extra day.

16. Find the value(s) of k so that the pair of equations x + 2y = 5 and 3x + ky + 15 = 0 has a unique solution.

17. Determine graphically the coordinates of vertices of a triangle, the equation of whose sides are given by   2y – x = 8, 5y – x = 14 and y – 2x = 1.

18. The ratio of incomes of two persons is 9 : 7 and the ratio of their expenditures is 4 : 3. If each of them manages to save Rs. 2000 per month, find their monthly incomes.

19. The students of a class are made to stand in rows. If 3 students are extra in a row, there would be 1 row less. If 3 students are less in a row, there would be 2 rows more. Find the number of students in the class.

20. Solve the following pairs of equations by reducing them to a pair of linear equations:

$$1/2x + 1/3y = 2 , \quad 1/3x + 1/2y = 13/6$$

LAB MANUAL WORK

Do the following activity work in the lab manual book.

1. Pair of linear equation in two variables with unique solutions.
2. Pair of linear equation in two variables with no solution and infinite solution.
3. Verify basic proportionality theorem.
4. To obtain the centroid of the triangle.
5. Equiangular triangles are similar to each other.

ENGLISH

Answer the following questions

1. Justify the title "A Letter to God"

2. Why did Lencho write a letter to God?

3. What does 'Fire' and 'Ice' symbolise?

4. How did the mood of the Poet change?

5. According to Nelson Mandela,what is the definition of courage?

6. What are the twin obligations?

7. Describe the first flight of young Seagull.

8. Justify the triumph of surgery for the treatment of Tricki

9. How did Anil change Hari Singh to become a responsible citizen.

Grammar Section

Write the structure and examples of all Tense.

Writing Section

1.Write a letter to the Editor about the poor condition of hospital in your locality.

2. You are Rakesh/Sonia of Cambridge Senior Secondary school, Noida. Write a letter to the Sales manager, Orient Blackson, Noida, placing an order for some books for your school library.

SOCIAL SCIENCE

1 Prepare a project work on SUSTAINABLE DEVELOPMENT

* Students must write following key points

* (i) Need of sustainable development.

* (ii) Importance of sustainable development

* (iii)Policies initiated to adopt measure for sustainable development.

2.RESOURCES AND DEVELOPMENT (identification only)

* Major Soil Types (map pointing)

3 Prepare a portfolio of RISE OF NATIONALISM IN EUROPE.

   GENERAL INSTRUCTIONS

*Project should be handwritten

*Eco Friendly materials can be used

*follow the sequence

 Index , Introduction, Bibliography, Conclusion

विषय   -हिंदी

प्रश्न (1) पांच औपचारिक और पांच अनौपचारिक पत्र लिखें ।

प्रश्न (2) निम्नलिखित विषयों पर 80 से 100 शब्दों में अनुच्छेद लिखें।

(क) पर्यावरण संरक्षण : समय की मांग

(ख) ऑनलाइन शिक्षा :

 शिक्षा जगत में नवीन क्रांति

(ग) साइबर युग, साइबर ठगी : सावधानियां एवं सुरक्षा उपाय।

(घ) खेल और स्वास्थ्य

(ड़) ग्लोबल वार्मिंग

प्रश्न (3) पोर्टफोलियो

संस्कृत

वाङ्गमय तपः पाठ का सारांश हिन्दी भाषा मे लिखें ।

 व्याकरणम्

समासः -अव्ययीभाव , द्विगु, द्वन्द्, समास, के सभी उदाहरणों को लिखें।

शब्दरूप -बालक,लता,फल, गुरू,मुनि को लिखें।

धातुरूप -नम्,सेव,लभ्, क्रीड़ (पांचो लकारो)मे लिखें।

SCIENCE

BIOLOGY

1. Questionnaire (Must be done in biology notebook):

a. Why is diffusion insufficient to meet the oxygen requirement of multicellular organisms like humans? What criteria do we use to decide whether something is alive?

b. What processes would you consider essential for maintaining life? What are outside raw materials used for by an organism?

c. What are the differences between autotrophic and heterotrophic nutrition? Where do plants get each of the raw materials required for photosynthesis?

d. What is the role of the acid in our stomach? What is the function of digestive enzymes?

e. How is the small intestine designed to absorb digested food? Why does piece of bread taste sweet when chewed for some time?

f. How do autotrophs obtain carbon dioxide and nitrogen to make their food? Explain the mechanism of photosynthesis. Differentiate between trypsin and pepsin.

g. Leaves of a healthy potted plant were coated with Vaseline. Will the plant remain healthy for long? Give reason for your answer.

h. Mention the role of the following in digestion (a) Pancreatic juice (b) bile juice (c) Saliva

i. Name the part of alimentary canal where: (i) digestion of starch starts (ii) bile juice is secreted
 (iii) bile is stored (iv) nutrients are absorbed (v) water is absorbed (vi) gastric juice is secreted

j. Mention the location and function of four major glands associated with digestive system of humans. What function is served by pyloric sphincter and anal sphincter?

2. Prepare a project on any of the four basic life processes mentioned in the NCERT book.

 *Format (Points to be included): (a). Front page: Title of the project, Name, Class, Section,
 Roll Number, Session (b). Acknowledgement (c). Introduction (d). Body of the project
 (e). Conclusion (f). Bibliography

General Instructions:

* The project work must be hand-written by the pupil. Use A 4 sheets and stick file for the project work. All A- 4 size sheets should be properly and arranged and numbered and can be white/ handmade/coloured.

* The students can use different art-related tools and techniques like painting, drawing, coloured pictures, craft activities, etc

CHEMISTRY

1) Write one equation each for the decomposition reactions where energy is supplied in the form of heat, light or electricity.

2) Write the balanced chemical equation for the following and identify the type of reaction in each case :

(a) Potassium bromide (aq) + Barium iodide (aq) → Potassium iodide (aq) + Barium bromide(s)

(b) Zinc carbonate(s) → Zinc oxide (s) + Carbon dioxide (g)

(c) Hydrogen (g) + Chloride (g) → Hydrogen chloride (g)

(d) Magnesium (s) + Hydrochloric acid (aq) → Magnesium chloride (aq) + Hydrogen (g)

3) What happens when water is added to Quick lime?

4) Why Magnesium ribbon is rubbed before burning in the atmosphere?

5) What are the characteristics of any chemical reactions? Support your answer by giving suitable Chemical reactions?

PHYSICS

Project Work

1. Prepare the tabular display of all the cases of image formation by concave and convex mirror along with proper neat ray diagrams on the chart paper

2. Prepare the tabular display of all the cases of image formation by convex and concave lens along with neat and clean ray diagram on the chart paper

3. Make a systematic chart of all the important formulae and sign convention for mirrors and lens.

Questions:-

1. What type of image is formed on a cinema screen?

2. Why is convex mirror used as a rear view mirror in vehicles? State any one reason.

3. What is the significance of +ve sign of magnification?

4. Which property of concave mirror is utilised for using them as shaving Mirrors?

5. What should be the position of the object when a concave mirror is to be used as a doctor's Mirror?

6. Define the term principal axis of a spherical mirror.

7. List four characteristics of the images formed by plane mirrors?

8. State two position in which a concave mirror produces a magnified image of a given object. List two differences between the two images.

9. Define the following terms in the the context of spherical Mirrors.

 (i) Pole (ii) centre of curvature (iii) radius of curvature (iv) principal axis

10. A convex mirror used for rear view on an automobile has a radius of curvature of 3m. If a bus is located at 5 metre from this mirror .Find the position ,nature and size of the image.

INFORMATION TECHNOLOGY

Q1. **Explain the advantages and disadvantages of the following:**

(i) **Verbal Communication**

(ii) **Non-Verbal Communication**

(iii) **Visual Communication**

Q2. **Make a collage of different types of facial expressions – happy, sad, surprise, angry, disgusted, afraid etc.**

Q3. **What is stress management? Enlist the sources of stress in the lives of students in modern times.**

Q4. **Explain 7 C's of effective communication.**