St. Joseph's School Maharajganj
Summer Holiday Homework
Class -X

MATHEMATICS

1. Learn of the following definition.
   a. Natural number
   b. Whole number
   c. Integers
   d. Rational and irrational number
   e. Real number
2. Using Euclid's algorithm, find the HCF of 240 and 228.
3. Prove that sum of a rational number and irrational number is always irrational.
4. Find the zeros of quadratic polynomial x^2+x-56
5. Write a quadratic polynomial, the sum and product of whose zeros are 3 and -2
6. Find all the zeros of the polynomial, $2x^4-3x^3-3x^2+6x-2$, if two of its zeros are $\sqrt{2}$ and $-\sqrt{2}$
7. Draw the graph of x-y+1=0 and 3x+2y-12=0. Calculate the area bounded by these lines and the x-axis. Also find the area bounded by these lines and y-axis. Find the ratio of areas of the two triangles formed.

ENGLISH

1. Write a short paragraph each about all the authors from 1st to 3rd units of First Flight.
2. Read at least one English newspaper daily.
3. Find out poetic devices from first five poems from First Flight.
4. Learn 5 new English words daily from newspapers, books, or your surroundings and make a list of them with examples.

HINDI

प्रश्न –1– रचना के आधार पर वाक्य भेद की परिभाषा एवं उनके उपवाक्य के भेद की परिभाषा और उदाहरण याद कीजिए।

प्रश्न–2– माता का आंचल पाठ में आने वाले मुहावरों का अर्थ और सर्वनाम के भेद की परिभाषा और उदाहरण याद कीजिए।

प्रश्न–3– अवकाश के दिनों में किए गए अपने किसी यात्रा का वर्णन 500 शब्दों में कीजिए।

प्रश्न–4– सूरदास के पद, नेताजी का चश्मा, माता का अंचल, पाठ में आने वाले कठिन शब्दों के अर्थ याद कीजिए।

S.St

1- Submit a project on ECONOMICS which will be based on "CHAPTER: 5- **CONSUMER RIGHTS"**
2- Make an assignment topic resources and development with the help of map, circle, data etc.
3- Learn question answers of these chapters:
a- Nationalism in India
b- Water Resources
c- Sectors of Indian Economy
d- Federalism
e- In the map of India fill following Places.
Champaran, Kheda, Dandi, Nagpur, Chauri Chaura, Kolkata, Chennai, Ahmedabad.

PHYSICS

Chapter 1: Light – Reflection and Refraction

Section A: Conceptual Questions

1. Define:
   - Reflection and laws of reflection
   - Refraction and Snell's law
   - Refractive index
2. Differentiate between:
   - Concave and convex mirror (at least 3 points)
   - Real and virtual image
   - Reflection and refraction

Section B: Ray Diagrams

Draw ray diagrams for:

1. Object at infinity in front of a concave mirror
2. Object between pole and focus of concave mirror
3. Refraction of light through a rectangular glass slab
4. Refraction through convex lens (parallel ray and ray through optical center)

Section C: Numerical Practice

1. An object 4 cm in size is placed 20 cm in front of a concave mirror of focal length 10 cm. Find the position, nature and size of the image.
2. A ray of light enters from air into glass having refractive index 1.5. If the angle of incidence is 30°, calculate the angle of refraction.
3. An object is placed at 15 cm from a convex lens of focal length 10 cm. Find the image distance and magnification.

Section D: Research Activity

Prepare a short write-up or model on:

- "How lenses are used in real life: Cameras, Spectacles, and Microscopes"

(Include pictures or illustrations for explanation)

Chemistry

Chapter 1: Chemical Reactions and Equations

Instructions:

- Use a separate notebook for theory and project.
- Neatness and creativity will carry extra marks.

A. Theory Work

1. Define the following with examples:
   a) Chemical reaction
   b) Reactants and products
   c) Balanced chemical equation

2-What is rancidity? How can it be prevented?

B. Practical-based Tasks

1. Observe and write observations for any 2 chemical changes at home (e.g., rusting of iron, cooking of food).
2. Draw symbols of 10 common elements and write their valence.

3-What is rancidity? How can it be prevented?

B. Practical-based Tasks

1. Observe and write observations for any 2 chemical changes at home (e.g., rusting of iron, cooking of food).
2. Draw symbols of 10 common elements and write their valence.

C. HOTS Questions

1. Why is it important to balance a chemical equation?
2. Why does the colour of copper sulphate solution change when iron is added to it?

D. Project Work

Make a model or chart on types of chemical reactions using pictures or examples from your daily life.

Information Technology

1. 7 Cs of Effective Communication & Barriers

📌 *Activity:* Make a **flipbook or chart** explaining each of the 7 Cs (like Clarity, Courtesy) and types of barriers (environmental, linguistic, etc.) with examples.

2. Types of Verbal, Non-verbal & Visual Communication

📌 *Activity:* Design a **trifold brochure** with definitions, examples, and illustrations for each communication type. Make it colourful and neat.

Biology

1. To write chapter 1 activity to from your Ashoka book (to show that sunlight is necessary for photosynthesis)
2. To draw the diagram of colourful well levelled diagram of Human heart and nephron structure. (On A4 page)