St. Joseph's School Maharajganj
Summer Holiday Homework
Class –XI Biology

PHYSICS

Chapters:
1. Physical World
2. Units and Measurements

Part A – Short Answer Questions

1. Write all the formulae related to mathematical tools (i.e. trigonometry, differentiation, integration, logarithm)
2. Distinguish between fundamental and derived quantities with examples.

Part B – Numerical Problems

3. The radius of a circle is measured as (7.0 ± 0.2) cm. Find the percentage error in the area.
4. Convert a velocity of 36 km/h to m/s using dimensional analysis.
5. A physical quantity X is given by X = (A^2 B^3) / C. If the percentage errors in A, B, and C are 1%, 3%, and 2% respectively, find the percentage error in X.

Part C – Activities

6. Make a chart showing SI units of at least 15 commonly used physical quantities.
7. Write dimension formulae of at least 35 derived physical quantities.

Chemistry

Chapters Covered:
1. Some Basic Concepts of Chemistry
2. Structure of Atom

Section A: Conceptual Questions

Chapter 1: Some Basic Concepts of Chemistry

Define the following terms with one example each:
(a) Molar mass
(b) Empirical formula
2.Differentiate between empirical and molecular formula with examples.
3.Calculate the number of atoms in 4.6 g of sodium.
4.A sample contains 11.2 g of iron. Calculate the number of moles and atoms present in it. (Atomic mass of Fe = 56 g/mol)

Chapter 2: Structure of Atom

5.Write the main postulates of Bohr's model of atom.
6.Write the electronic configuration of the following elements:
(a) Na (b) Mg (c) P (d) Fe

Section B: Numerical Problems

Chapter 1

7. How many moles are there in 25 g of calcium carbonate ($CaCO_3$)?
8. Calculate the mass of 3.01×10^{23} molecules of CO_2.
9. A compound contains 40% carbon, 6.7% hydrogen, and 53.3% oxygen. Determine its empirical formula.

Chapter 2

10.Calculate the wavelength of light emitted when an electron in a hydrogen atom jumps from the third orbit to the first orbit.
11.Find the energy of a photon having frequency 3×10^{15} Hz.

Section C: Project Work

Choose any one of the following topics and prepare a handwritten report (3-5 pages):
Applications of Isotopes in Real Life
Discovery of Subatomic Particles
Significance of Mole Concept in Chemistry

Timeline of Atomic Models: From Dalton to Modern Quantum Model.

Biology

1. To write the experiment transverse section of Dicot leaves in lab manual . (Aim , Material required , procedures, observation, result and precaution .
2. To solve the MCQ and assertion & reason of chapter 1 , 2 from ashoka book.
3. To write & learn all the examples of different phylum from your book.
4. To learn & draw the chart of different types of Roots , Stems , Leaves, inflorescences , aestivation in plants on A4 pages.

ENGLISH:

Prepare an Authors' Directory for all the writers in the text-books Hornbill and Snapshots

1 whereabouts of the writer
2. Works and years of publication
3. Awards won
4. Birth and Death

Minimum one FULL PAGE content for each writer .

No text should be identical with anybody elses

ENGLISH GRAMMAR

1. Write a diary everyday-
   - What you did?
   - Write about the food you tasted and prepared.
   - Events and celebration
2. Newspaper Reading:
   - Daily read newspaper and underline the words.
   - Find meaning of the Vocabulary.
   - Write two (2) vocabularies with meaning and sentences.
   - Try and use them to speak out.
3. Write a summary:
   - Read any Novels, Poems you like.
   - Write a summary about the Novel, Poem you read, based on what you understand. (only in English)

Physical Education:

(1) Activity Based: Maintain a fitness long for ten days of your summer vacation. Record the following each day. Type of physical activity (yoga, walking and cycling etc...)

Duration (in minutes)

(a) How did you feel after the activity?

(2) Theoretical Based: (writing)

Explain any five benefits of doing regular physical activity during summer holidays.

1. Mention how it helps in:
2. Reducing stress.
3. Maintaining physical health.
4. Building discipline

Improving social skill.