

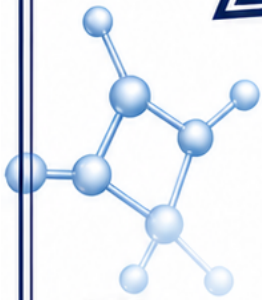


—• *Class 11* •—

SCIENCE

⚡ **SUMMER HOLIDAY** ⚡

HOMework



PHYSICS



CHEMISTRY



BIOLOGY

—• **SESSION 2026-2027** •—



English Holidays Homework

Class XI

1. Read any one **motivational** or **travel-based book** and prepare a review including:

- Title and author
- Summary (200 words)
- Main characters
- Favorite incident
- Five new words learnt
- Moral/message of the book

Suggested books:

- The Alchemist
- Wings of Fire
- Ignited Minds
- Who moved my cheese.

2. Make a **grammar chart** on any one topic:

- Modals
- Determiners
- Tenses
- Reported Speech

3. “**Discovering Tut: The Saga Continues**”

Prepare a mini-project on:

“Ancient Egypt and Pharaohs”

Include: Pyramids, Mummies, Beliefs about afterlife, King Tut’s tomb ,Interesting facts . about Egyptian civilization

Add maps, pictures, and illustrations.

*Create a colourful timeline showing major events related to **Tutankhamun:** Birth, Becoming Pharaoh, Death, discovering of tomb, CT scan investigations.

HOLIDAY HOMEWORK

CLASS-XI

Sub-Physics

Unit-1 Dimensional formula and significant

1. Solve five numerical on each following given topic:

- (i) Checking the correctness of physical formula by using dimension.
- (ii) Derive the formula by using dimension.
- (iii) Change one form of unit into another by using dimension.
- (iv) Multiplication and division up to correct significant figure and round off.

2. Make dimensional formula of Gravitational constant, Young's modulus of elasticity, Surface tension, Stress, Plank's constant.

Unit-2 Kinematics

- (i) Draw position time graph and velocity time graph for different condition .
- (ii) Derive equation of motion by calculus method.
- (iii) What is triangle law. Find the resultant of two same order vector on the basis of triangle law by analytical method.
- (iv) Solve five numerical on each topic distance and displacement, speed and velocity Acceleration.

3. **Complete written work of practical file**

SAINIK SCHOOL GOPALGANJ

SUB: CHEMISTRY

CLASS - XI

ASSIGNMENT

Lesson: 1: Some Basic Concepts

(Q1 to Q10.) Given below are four options against each question. Choose the option which you consider the most appropriate as your answer.

Q1 Number of significant figures in the number 2.005 is:

- (a) 3 (b) 4
(c) 2 (d) 1

Q2 What will be the molality of the solution containing 18.25 g of HCl gas in 500 g of water ?

- (a) 0.1 m (b) 1 M
(c) 0.5 m (d) 1 m

Q3 The number of oxygen atoms in 100 g of CaCO_3 is :

- (a) 6.033×10^{23} (b) 9.033×10^{23}
(c) 8.033×10^{23} (d) None of these

Q4 The number of molecules in 4.4 g of Carbon di oxide is :

- (a) 3.0×10^{23} (b) 6.022×10^{22}
(c) $16/6.022 \times 10^{23}$ (d) $16/3.0 \times 10^{23}$

Q5 One molar solution contains 1 mole of solute in:

- (a) 1000 g of the solvent,
(b) One litre of the solvent,
(c) One litre of the solution,
(d) 22.4 litres of the solution.

Q6 The formula which represents the simple ratio of atoms in a compound is called

- (a) empirical formula (b) molecular formula
(c) structural formula (d) rational formula

Q7 Number of atoms in 1.4 g nitrogen is:

- (a) 1.20×10^{23} (b) 3.01×10^{23}
(c) 6.02×10^3 (d) none of these

Q8 The litres of CO_2 represented by 4.4 g of CO_2 at S.T.P. are:

- (a) 2.4 litres (b) 2.24 litres
(c) 44 litres (d) 22.4 litres

Q9 Equal volumes of different gases under definite temperature and pressure have:

- (a) equal densities (b) equal masses
(c) equal atoms (d) equal molecules

Q10 The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What will be the molecular formula of the compound?

- (a) $\text{C}_9\text{H}_{18}\text{O}_9$ (b) CH_2O
(c) $\text{C}_6\text{H}_{12}\text{O}_6$ (d) $\text{C}_2\text{H}_4\text{O}_2$

Short Answer type Questions:

Q11 Are 0.5 mole of NaOH and 0.5 M of NaOH solution same ? Give reason.

Q11 State and explain the law of multiple proportion.

Q12 Aspirin contains 60.0% C , 4.68% H and the rest oxygen. Determine the empirical formula of aspirin.

Q13 Calculate the mass of carbon monoxide having the same number of oxygen atoms as are present in 88 g Carbon dioxide.

Q14 One million silver atoms weigh 1.79×10^{-16} g . Calculate the atomic mass of silver.

Q15 Express the following upto three significant figures:

- (i) 6.5089 (b) 32.3928 (c) Two thousand

Long Answer Type Questions:

Q16 Explain molar mass. How will you calculate the molar mass of (a) H_2SO_4 , (b) Na_2CO_3

Q17 Explain how mixture differs from pure substance. Give four examples of each.

Q18 A welding fuel gas contains carbon and hydrogen only .Burning a small sample of it in Oxygen gives 3.38 g Carbon Dioxide , 0.690 g of water and no other products .A

volume of 10.0 L (measured at STP) of this welding gas is found to weigh 11.6 g.
Calculate

(i) empirical formula, (ii) molar mass of the gas and (iii) molecular formula.

Q19 Calcium Carbonate reacts with aqueous HCl to give CaCl_2 and CO_2 according to the reaction , $\text{CaCO}_3 (\text{s}) + 2\text{HCl} (\text{aq}) \rightarrow \text{CaCl}_2 (\text{aq}) + \text{CO}_2 (\text{g}) + \text{H}_2\text{O} (\text{l})$

What mass of CaCO_3 is required to react completely with 25 mL of 0.75 M HCl?

Q20 If the density of methanol is 0.793 kg L^{-1} , what is its volume needed for making 2.5 L of its 0.25 M solution ?

CHAPTER – 1 – RELATIONS & FUNCTIONS (HOTS)

1.	If A and B are two sets having 3 elements in common and $n(A) = 5, n(B) = 6$, then $n[(A \times B) \cap (B \times A)]$	[1]
2.	If $f(x) = x^2 - 3x + 1$ and $g(x) = 4x - 5$, then find (i) $(f + g)(2)$ and (ii) $(f.g)(-3)$	[1]
3.	If $f(x) = x^2$, then find $\frac{f(18.9) - f(16.3)}{35.2}$.	[1]
4.	If $A = \{2, 4, 6, 9\}$ and $B = \{4, 6, 18, 27, 54\}$, $a \in A, b \in B$, find the set of ordered pairs such that 'a' is factor of 'b' and $a < b$.	[1]
5.	Let $n(A) = m$, and $n(B) = n$. Then the total number of non-empty relations that can be defined from A to B is -----	[1]
6.	Find x and y if: $(x - 3, 4 + y) = (3y + 1, -2x)$	[2]
7.	Is $\{(x, y) : x^2 = y, x, y \in R\}$ a function? If yes what is its range?. If no, what will be the domain so that it will be a function?	[2]
8.	If $f = \{(1, -1), (2, 1), (0, -3), (3, 3)\}$ be a function from Z to Z defined by $f(x) = ax + b$, for some integers a, b. Determine a, b.	[2]
9.	Find the domain of the following real functions. (i) $\sqrt{x-5}$ (ii) $\frac{x}{x+1}$ (iii) $\frac{\sqrt{2x+1}}{x^2}$ (iv) $\frac{x+1}{\sqrt{x-3}}$ (v) $\sqrt{\frac{2x+1}{x-2}}$ (vi) $\frac{x^2+x+1}{x^2-7x+10}$ (vii) $\sqrt{x-1} + \frac{1}{\sqrt{x^2-4}}$ (viii) $\frac{1}{\sqrt{x- x }}$ (ix) $\sqrt{x^2+9}$ (x) $\frac{1}{\sqrt{x+[x]}}$ (xi) $\sqrt{\frac{ x -1}{ x -2}}$ (xii) $\frac{1}{\sqrt{ x ^2-[x]-2}}$	[2] (For each)
10.	Find the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal.	
11.	For any three sets A, B, C and D, prove that: (i) $A \times (B \cup C) = (A \times B) \cup (A \times C)$ (ii) $A \times (B - C) = (A \times B) - (A \times C)$ (iii) $(A \times B) \cap (C \times D) = (A \cap C) \times (B \cap D)$	[3] (For each)
12.	(i) If $A \subseteq B$, show that $A \times A \subseteq (A \times B) \cap (B \times A)$. (ii) If $A \subseteq B$ and $C \subseteq D$ show that $A \times C \subseteq B \times D$.	[3] (For each)
13.	If $y = f(x) = \frac{ax-b}{bx-a}$, then show that $x = f(y)$	[3]
14.	Find the domain and range of the following real functions. (i) $f(x) = \sqrt{16-x^2}$ (ii) $f(x) = \sqrt{x^2-25}$ (iii) $f(x) = x - [x]$ (iv) $f(x) = \frac{x^2-4}{x-2}$ (v) $f(x) = \frac{x^2+5x-6}{x^2-3x+2}$ (vi) $f(x) = x-5 + 1$ (vii) $f(x) = x^2 + 3x + 4$ (viii) $f(x) = \frac{2x}{x^2+1}$ (ix) $f(x) = \frac{ x-3 }{x-3}$	[3] (For each)
15.	Let R be a relation from R to R defined by $R = \{(a, b) : a, b \in N \text{ and } a - b \text{ is divisible by } 4\}$. Are the following true? Justify your answer. (i) $(a, a) \in R$, for all $a \in R$ (ii) $(a, b) \in R$, implies $(b, a) \in R$ for all $a, b \in R$ (iii) $(a, b) \in R, (b, c) \in R$ implies $(a, c) \in R$ for all $a, b, c \in R$	[3]

1. $A = \{x, y\}$ and $B = \{0, 2, 3, 5\}$ then write $A \times B$ and find the number of relations from A to B
2. If $f(x) = x^3 - \frac{1}{x^3}$ find $f(x) + f(\frac{1}{x})$
3. Express $A = \{(x, y) : x^2 + y^2 = 25, x, y \in Z\}$ as the set of ordered pairs
4. Write domain of i) $\frac{x^2+1}{x^2-9}$, ii) $\frac{3x+1}{x^3-x}$ iii) $\frac{2x+1}{x^2-5x+4}$
5. If $A \times B = \{(0,2)(1,2), (3,2)(4,2)\}$ find A and B
6. $A = \{0, 1, -1\}$ and $B = \{0,3,4\}$, write $(A - B) \times (B - A)$.
7. A relation R is defined from $A = \{0, 1, 2,3,4,5\}$ to N as follows:
 $R = \{(x, y) \in A : y = x^2 + x - 2\}$. Write R in roster form. Also determine domain and range
8. $f(x) = x^2, g(x) = 2x - 1$, Write i) $(f+g)$ ii) $(f.g)$
iii) $(\frac{f}{g})$ iv) $(f-g)$
9. $A = \{0, 1, 2,3, 4\}, B = \{-2, -1, 0, 1, \dots, 10\}$ and $R = \{(0, -2), (1, 0), (2, 2), (3, 4)(4, 6)\}$. Write R using rule method
10. Find domain and range of the following real valued functions:
i) $f(x) = |x| + 1$ ii) $f(x) = \sqrt{27 - x^2}$ iii) $f(x) = \frac{x^2}{x^2+1}$ iv) $-|x + 2|$
v) $f(x) = \sqrt{4 - x}$ vi) $f(x) = \sqrt{x - 4}$ vii) $f(x) = x^2 + 1$
11.

$$f(x) = \begin{cases} 3x + 1, & 0 \leq x < 3 \\ x + 1, & 3 \leq x < 5 \\ x^2 - 1, & 5 \leq x < 8 \end{cases}, x \in W$$
. write the function in roster form. Write Domain and Range of the function
12. If $f(x) = \frac{x+1}{x-1}, x \neq 1$, find i) $f(3)$, ii) $f(f(x))$ iii) x , when $f(x) = 3$
iv) $\frac{f(2) + f(5)}{f(0)}$ v) Prove $f(\frac{1}{x}) = -f(x)$
13. If $f(x) = \frac{ax+b}{bx-a}$, prove that $f(f(x)) = x$

INVESTIGATORY FILE

An investigatory project is an excellent opportunity to apply scientific methods to real-world biological concepts. A well-structured project file should follow this standard academic layout:

Standard Structure of the Project File

- o Cover Page: Title of the project, student's name, roll number, class/section, and academic year.
- o Certificate of Authenticity: A formal statement signed by your biology teacher and external examiner certifying your work.
- o Acknowledgement: A brief paragraph thanking your teacher, lab assistant, parents, and school for their guidance and resources.
- o Index / Table of Contents: A neat table with serial numbers, topic headings, and page numbers.
- o Introduction: Theoretical background and relevance of the chosen topic.
- o Objective/Aim: A clear, concise statement of what you intend to discover or test.
- o Hypothesis: An educated guess or predicted outcome of your experiment.
- o Observations & Data Collection: Your findings presented clearly using tables, graphs, charts, or labeled diagrams.
- o Data Analysis & Discussion: Interpreting the results and explaining the biological science behind your findings.
- o Conclusion: A final summary stating whether your hypothesis was correct or incorrect.
- o Precautions: A list of safety measures and steps taken to minimize experimental errors.
- o Bibliography: Referencing the NCERT textbook, reference books, websites, or scientific journals used.

Investigatory Project Topics

Category A: Plant Physiology & Botany

- o The Effect of Different Light Wavelengths (Colors) on Photosynthesis Rate Use colored cellophane sheets over hydrilla plants to measure oxygen bubble production.
- o Effect of Kitchen Waste Liquid Fertilizers vs. Chemical Fertilizers on Plant Growth Compare how organic infusions (like onion peel water or banana peel tea) affect seedling growth compared to standard urea.
- o Allelopathy: Investigating How Certain Plants Suppress the Growth of Neighboring Weeds Extract juices from eucalyptus leaves or marigolds to see if they inhibit the germination of mustard seeds.
- o Hydroponics: Growing Plants without Soil using Nutrient-Rich Water Design a mini-hydroponic setup to study macro-nutrient deficiencies (e.g., growing a plant without nitrogen).

- o Effect of Salinity (Salt Stress) on Seed Germination and Root Elongation Test
different molar concentrations of NaCl on bean seeds to find the maximum threshold of salt tolerance.
- o Study of Apical Dominance and the Role of Auxins in Plant Growth Observe the growth of lateral buds in fast-growing plants after removing the terminal bud, and apply commercial auxin to compare.

Category B: Biomolecules & Cell Biology

- o Comparative Analysis of Vitamin C Content in Fresh vs. Packaged Fruit Juices Use a simple iodine titration method to find out which juice loses the most vitamins over time.
- o The Effect of Temperature and pH on the Activity of Salivary Amylase on Starch Test how fast human saliva breaks down starch into sugars under boiling, freezing, acidic, and alkaline conditions.
- o Diffusibility of Lipids: Testing the Permeability of Cell Membranes Using Beetroot Cylinders Subject beetroot pieces to different temperatures or organic solvents (like alcohol) and measure the leakage of vacuolar pigment (betalain).
- o Quantitative Estimation of Tannins/Caffeine in Different Brands of Tea Leaves Extract and precipitate tannins to study their percentage weight in various commercial tea samples.

Category C: Human Physiology & Health Science

- o Effect of Different Types of Music on Human Pulse Rate and Blood Pressure A study on human volunteers measuring cardiovascular shifts when exposed to classical music vs. heavy metal.
- o Study of Bacterial Contamination on Everyday Public Surfaces Use agar plates to swab and culture bacteria from currency notes, mobile screens, and door handles to compare cleanliness.
- o Measuring Vital Capacity and Lung Volumes Using a Homemade Spirometer Construct a simple water-displacement spirometer to study how regular exercise or singing affects lung capacity.
- o Analysis of Adulterants in Common Food Materials Test common items like checking for argemone oil in mustard oil, chalk powder in sugar, or metanil yellow in turmeric.
- o A Comparative Study on the Water Retaining and Water Absorbing Capacity of Different Sanitary Napkins A practical, socially relevant topic assessing the absorption efficiency and material safety of various brands.

Category D: Microorganisms & Biological Classification

- o The Effect of Natural Antimicrobials (Garlic, Honey, Neem, and Turmeric) on Microbial Growth Use the disc-diffusion method on agar plates to see which natural extract creates the largest zone of inhibition for bacteria/fungi.

- o Study of the Rate of Fermentation by Yeast in Different Carbohydrates Measure carbon dioxide production (using balloon expansion or gas delivery tubes) when yeast is fed glucose, sucrose, starch, and lactose.
- o Isolating and Observing Fungal Diversity (Moulds) on Different Varieties of Bread Study how moisture, preservatives, and flour types (whole wheat vs. white bread) alter the speed of fungal colonization.

WORKSHEET

CHAPTER-1 THE LIVING WORLD

Section A: Multiple Choice Questions (1 Mark Each)

Q1. Growth and reproduction are mutually exclusive events in which of the following?

- a) Bacteria
- b) Higher plants and animals
- c) Unicellular algae
- d) Amoeba

Q2. In majority of the higher plants and animals, growth and reproduction are:

- (a) Mutually inclusive events
- (b) Mutually exclusive events
- (c) Synonymous terms
- (d) Independent of environmental factors

Q3. ICBN stands for:

- a) International Code for Botanical Nomenclature
- b) International Congress of Biological Names
- c) Indian Code of Botanical Nomenclature
- d) International Code for Biological Nomenclature

Q4. Which of the following taxonomic aids provides an index to the plant species found in a particular area?

- a) Herbarium
- b) Key
- c) Flora
- d) Manual

Section B: Assertion & Reason Questions (1 Mark Each)

Directions: (a) Both A and R are true and R is the correct explanation of A; (b) Both A and R are true but R is not the correct explanation of A; (c) A is true but R is false; (d) A is false but R is true.

Q5. Assertion (A): Metabolism is a defining feature of all living organisms without exception.

Reason (R): Isolated metabolic reactions in vitro (in a test tube) are not living things but are living reactions.

Q6. Assertion (A): The taxonomic family *Solanaceae* includes genera like *Solanum*, *Petunia*, and *Datura*.

Reason (R): Families are characterized on the basis of both vegetative and reproductive features of plant species.

Section C: Short Answer Questions - Type I (2 Marks Each)

Q7. Why are living organisms classified? Give two main reasons.

Q8. Explain the two components of a binomial name using *Mangifera indica* as an example.

Q9. "Properties of cellular organelles are not present in the molecular constituents of the organelle." Explain this statement with respect to biological organization.

Section D: Short Answer Questions - Type II (3 Marks Each)

Q10. What is a taxonomic key? Explain how "couplets" and "leads" are used in identifying an unknown organism.

Q11. Differentiate between a **Herbarium** and a **Botanical Garden** as taxonomic aids.

Q12. Define the terms: (i) Systematics, (ii) Taxon, and (iii) Nomenclature.

Section E: Long Answer Questions (5 Marks Each)

Q13. Elaborate on the universal rules of binomial nomenclature as framed by ICBN.

Q14. Detail the taxonomic hierarchy of a human being (*Homo sapiens*) and Housefly (*Musca domestica*), showing their breakdown from Kingdom down to Species.

Q15. Explain why growth and reproduction cannot be taken as defining characteristics of living organisms, whereas consciousness and cellular organization can.

CHAPTER-2 BIOLOGICAL CLASSIFICATION

Section A: Multiple Choice Questions (1 Mark Each)

Q1. Methanogens, responsible for the production of biogas, belong to which group of organisms? a) Eubacteria

- b) Archaeobacteria
- c) Dinoflagellates
- d) Slime moulds

Q2. Contagium vivum fluidum (infectious living fluid) was a term coined for viruses by:

- a) D.J. Ivanowsky
- b) M.W. Beijerinck
- c) W.M. Stanley
- d) Robert Hooke

Q3. Organisms that completely lack a cell wall, are the smallest living cells known, and can survive without oxygen are:

- a) Diatoms
- b) Mycoplasma
- c) Euglenoids
- d) Cyanobacteria

Q4. The cell wall of fungi is composed of:

- a) Cellulose and pectin
- b) Chitin and polysaccharides
- c) Peptidoglycan
- d) Silica

Section B: Assertion & Reason Questions (1 Mark Each)

Directions: (a) Both A and R are true and R is the correct explanation of A; (b) Both A and R are true but R is not the correct explanation of A; (c) A is true but R is false; (d) A is false but R is true.

Q5. Assertion (A): Chrysophytes (diatoms) float passively in water currents and their accumulations form "diatomaceous earth".

Reason (R): The cell walls of diatoms are indestructible because they are embedded with silica.

Q6. Assertion (A): Lichens are excellent pollution indicators.

Reason (R): Lichens grow rapidly and profusely in areas heavily polluted with sulphur dioxide.

Section C: Short Answer Questions - Type I (2 Marks Each)

Q7. What are the limitations of the two-kingdom system of classification proposed by Carl Linnaeus?

Q8. State two major differences between **Heterotrophic bacteria** and **Chemosynthetic autotrophic bacteria**.

Q9. Briefly describe how Euglenoids behave as mixotrophs (both autotrophic and heterotrophic).

Section D: Short Answer Questions - Type II (3 Marks Each)

Q10. Name the four major groups of Protozoans and give one distinguishing characteristic or example for each.

Q11. Distinguish between **Ascomycetes** (Sac fungi) and **Basidiomycetes** (Club fungi) based on their asexual and sexual spores.

Q12. What are Viroids? How do they structurally and functionally differ from Viruses?

Section E: Long Answer Questions (5 Marks Each)

Q13. State the five kingdoms proposed by R.H. Whittaker. Discuss the five main criteria he used to establish this classification system.

Q14. Give a detailed account of Kingdom Monera. Differentiate clearly between Archaeobacteria and Eubacteria, explaining why Archaeobacteria can survive extreme conditions.

Q15. Describe the structure and life habits of Slime Moulds. Explain how they change their body structure under favorable versus unfavorable conditions.

CHAPTER 3 – PLANT KINGDOM

Section A: Multiple Choice Questions (1 Mark Each)

Q1. Natural systems of classification differ from artificial systems because they are based on: a) Only gross superficial morphological characters

b) Structural, embryological, and anatomical affinities

c) Evolutionary relationships alone

d) Number and types of chromosomes

Q2. Hydrocolloids like algin and carrageen are obtained respectively from: a) Red algae and Brown algae

b) Brown algae and Red algae

c) Green algae and Brown algae

d) Red algae and Green algae

Q3. In Pteridophytes, the dominant phase of the life cycle is a: a) Free-living gametophyte

b) Dependent sporophyte

c) Independent, vascular sporophyte

d) Unicellular gametophyte

Q4. The unique double fertilization event is a characteristic feature found exclusively in: a) Gymnosperms

b) Pteridophytes

c) Angiosperms

d) Bryophytes

Section B: Assertion & Reason Questions (1 Mark Each)

Directions: (a) Both A and R are true and R is the correct explanation of A; (b) Both A and R are true but R is not the correct explanation of A; (c) A is true but R is false; (d) A is false but R is true.

Q5. Assertion (A): Bryophytes require water to complete their life cycle.

Reason (R): The flagellated male gametes (antherozoids) must swim through water to reach the archegonium for fertilization.

Q6. Assertion (A): Gymnosperms do not produce fruits.

Reason (R): The ovules of gymnosperms are not enclosed by an ovary wall and remain exposed both before and after fertilization.

Section C: Short Answer Questions - Type I (2 Marks Each)

Q7. Differentiate between Numerical Taxonomy and Chemotaxonomy.

Q8. Explain the structural composition and functions of **gemma cups** found in *Marchantia*.

Q9. What is **heterospory**? Name two pteridophyte genera that exhibit this phenomenon.

Section D: Short Answer Questions - Type II (3 Marks Each)

Q10. Tabulate the differences between Chlorophyceae, Phaeophyceae, and Rhodophyceae based on: (i) Major pigments, (ii) Stored food material, and (iii) Cell wall composition.

Q11. Why are Pteridophytes considered a significant step ahead of Bryophytes in terms of evolutionary adaptation on land?

Q12. Draw a neat, labeled schematic representation of a **Haplodiplontic** life cycle.

Section E: Long Answer Questions (5 Marks Each)

Q13. Provide a detailed account of the economic and ecological importance of Bryophytes (specifically mosses and liverworts).

Q14. Explain how heterospory in pteridophytes serves as an evolutionary precursor to the "seed habit" found in higher plants.

Q15. Compare Gymnosperms and Angiosperms based on the following:

- Structure of ovules/seeds
- Presence of vessels in xylem
- Nature of the male gametophyte
- Mechanism of pollination
- Type of endosperm formation



Holiday homework Psychology class XI

HOLIDAY HOMEWORK – PSYCHOLOGY (GRADE XI)

Topic: Introduction to Psychology

PART 1: “Be a Psychologist for a Day” (Observation Activity)

Task:

Observe people around you (family, friends, or public places such as markets, parks, metro, etc.) and write any 5 observations.

You may observe:

- How people react when they are angry or happy
- Body language (eye contact, posture, gestures)
- Differences between children and adults
- Behaviour in groups vs when alone

For each observation, write:

- What did you observe?
- Why do you think it happened? (*your interpretation*)

PART 2: “Decode Yourself” (Self-Reflection)

Task:

Answer the following questions creatively (you may use paragraphs, mind maps, drawings, or any other format):

- What kind of person am I?
- What makes me happy or stressed?
- How do I react when I am angry?
- Do I behave differently with different people? Why?

Ask one friend or family member:

“How do you see me as a person?”

Compare their response with your own answers.

PART 3: Psychology in Movies / Series

Task:

Watch any one movie or series and identify at least two psychological aspects.

You may focus on:

- Emotions (fear, love, jealousy, etc.)
- Personality traits
- Decision-making
- Social pressure or influence

Write the following:

- Name of the movie/series
- Description of the scene

- The psychological concept observed

 **Suggested Movies (Choose Any One)**

- Inside Out
- Taare Zameen Par
- 3 Idiots
- The Truman Show
- A Beautiful Mind
- The Social Dilemma
- Chhichhore
- Dear Zindagi
- Black Swan
- The Pursuit of Happyness

 **Guidelines:**

- Present your work neatly and creatively
- Use examples from real life wherever possible
- Focus on your own understanding—there are no right or wrong answers

 **Note:**

Psychology begins with observation and curiosity. This assignment is an opportunity to understand not only others, but also yourself in a deeper and more meaningful way.

BJS PUBLIC SCHOOL
HOLIDAY HOMEWORK COMPUTER SCIENCE CLASS-XI
(Includes MCQs, Assertion-Reason, Programming & Case Study Questions)

SECTION A — MULTIPLE CHOICE QUESTIONS (1–30)
COMPUTER SYSTEM

1. The brain of the computer is:
 - a) Monitor
 - b) CPU
 - c) Keyboard
 - d) Mouse
2. Which memory is temporary?
 - a) ROM
 - b) Hard Disk
 - c) RAM
 - d) DVD
3. Which of the following is an input device?
 - a) Printer
 - b) Speaker
 - c) Scanner
 - d) Plotter
4. Which software controls hardware?
 - a) MS Word
 - b) Operating System
 - c) Paint
 - d) Chrome
5. Which device is used to print documents?
 - a) Monitor
 - b) Printer
 - c) Keyboard
 - d) CPU
6. Full form of CPU is:
 - a) Central Process Unit
 - b) Central Processing Unit
 - c) Computer Processing Unit
 - d) Control Processing Unit
7. Which storage device has the highest capacity?
 - a) CD
 - b) DVD
 - c) Blu-ray Disk
 - d) Floppy Disk
8. Which of the following is system software?
 - a) Photoshop
 - b) Linux
 - c) PowerPoint
 - d) Excel
9. Which memory is non-volatile?
 - a) RAM
 - b) Cache
 - c) ROM
 - d) Register
10. Which one is not an output device?
 - a) Speaker
 - b) Plotter
 - c) Scanner
 - d) Monitor

BOOLEAN ALGEBRA & LOGIC GATES

11. Boolean Algebra was developed by:
 - a) Newton
 - b) George Boole
 - c) Charles Babbage
 - d) Pascal
12. In Boolean Algebra,
 $A+1=A + 1 =A+1=$
 - a) A
 - b) 0
 - c) 1
 - d) \bar{A}
13. Which gate gives output 1 only when all inputs are 1?
 - a) OR
 - b) NOT
 - c) AND
 - d) XOR
14. Which gate is known as an inverter?
 - a) OR
 - b) NOT
 - c) NAND
 - d) NOR

15. Which gate is called a universal gate?
- AND
 - OR
 - NAND
 - XOR
16. Output of NOT gate for input 0 is:
- 0
 - 1
 - 10
 - Undefined
17. Which gate gives output 1 when inputs are different?
- AND
 - XOR
 - OR
 - NAND

18. In Boolean Algebra:
- $$A \cdot 0 = A \cdot 0 = A \cdot 0 =$$
- 1
 - A
 - 0
 - \bar{A}
19. The symbol (+) represents:
- AND
 - OR
 - NOT
 - XOR
20. The symbol (.) represents:
- OR
 - XOR
 - NOT
 - AND

INTRODUCTION TO PYTHON

21. Python was developed by:
- Dennis Ritchie
 - Guido van Rossum
 - James Gosling
 - Charles Babbage
22. Python files have extension:
- .java
 - .cpp
 - .py
 - .html
23. Which function is used to display output?
- show()
 - display()
 - print()
 - output()
24. Which function is used for input?
- scan()
 - input()
 - get()
 - enter()
25. Which operator is used for assignment?
- ==
 - =
 - !=
 - >=

26. Which data type stores decimal values?
- int
 - str
 - float
 - bool
27. Which symbol is used for comments in Python?
- //
 - <!-- -->
 - #
 - **
28. Which keyword is used for decision making?
- for
 - if
 - while
 - break
29. What is the output of:
- ```
print(5+2)
```
- 52
  - 7
  - 10
  - Error
30. Which loop is used when number of iterations is known?
- while
  - if

- c) for
  - d) break
- 

## SECTION B — ASSERTION & REASON QUESTIONS (31–50)

### Directions:

Choose the correct option:

- a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

31.

Assertion: RAM is volatile memory.

Reason: RAM loses data when power is switched off.

32.

Assertion: ROM is permanent memory.

Reason: ROM stores BIOS instructions.

33.

Assertion: CPU is called the brain of computer.

Reason: CPU performs calculations and controls operations.

34.

Assertion: NAND gate is a universal gate.

Reason: Any logic gate can be designed using NAND gate.

35.

Assertion: NOT gate has only one input.

Reason: NOT gate inverts the input signal.

36.

Assertion: XOR gate gives output 1 for equal inputs.

Reason: XOR gate is called Exclusive OR gate.

37.

Assertion: Python is an interpreted language.

Reason: Python code is executed line by line.

38.

Assertion: Comments improve readability of programs.

Reason: Comments are ignored during execution.

39.

Assertion: = and == are same in Python.

Reason: Both are comparison operators.

40.

Assertion: Indentation is compulsory in Python.

Reason: Python uses indentation to define code blocks.

41.

Assertion: Boolean Algebra uses binary values.

Reason: Binary values are 0 and 1.

42.

Assertion: AND gate output is 1 when all inputs are 1.

Reason: AND gate performs logical multiplication.

43.

Assertion: OR gate output is 0 only when all inputs are 0.

Reason: OR gate performs logical addition.

44.

Assertion: Cache memory is faster than RAM.

Reason: Cache memory is located inside CPU.

45.

Assertion: Secondary memory is non-volatile.

Reason: It stores data permanently.

46.

Assertion: Python supports dynamic typing.

Reason: Variable type can change during execution.

47.

Assertion: A variable stores data.

Reason: Variables are memory locations.

48.

Assertion: input() function always returns string type.

Reason: User input is treated as text by default.

49.

Assertion: NOR gate is a universal gate.

Reason: All gates can be implemented using NOR gate.

50.

Assertion: Hard disk is a storage device.

Reason: It stores data permanently.

---

### **SECTION C — SHORT & LONG ANSWER QUESTIONS (51–70)**

51. Define computer system.

52. Explain the functions of CPU.

53. Differentiate between RAM and ROM.

54. Explain primary and secondary memory.

55. What are input and output devices? Give examples.

56. Define operating system with examples.

57. Explain any four characteristics of a computer.

58. Define Boolean Algebra.

59. Write the truth table of AND gate.

60. Write the truth table of OR gate.

61. Write the truth table of NOT gate.

62. Explain NAND gate with truth table.

63. Explain NOR gate with truth table.

64. What is the difference between XOR and XNOR gate?

65. Explain De Morgan's Laws.

66. Define Python programming language.

67. Explain variables and identifiers in Python.

68. What is indentation in Python? Why is it important?

69. Differentiate between for loop and while loop.

70. Explain arithmetic and comparison operators with examples.

---

### **SECTION D — PROGRAMMING BASED QUESTIONS (71–90)**

71. Write a Python program to print “Hello World”.
72. Write a Python program to input two numbers and print their sum.
73. Write a Python program to check whether a number is even or odd.
74. Write a Python program to find the largest of two numbers.
75. Write a Python program to display numbers from 1 to 10 using loop.
76. Write a Python program to find factorial of a number.
77. Write a Python program to check whether a number is positive or negative.
78. Write a Python program to print multiplication table of a number.
79. Write a Python program to calculate simple interest.
80. Write a Python program to swap two numbers.
81. Write a Python program to find square and cube of a number.
82. Write a Python program to count from 10 to 1 using while loop.
83. Write a Python program to print all even numbers from 1 to 50.
84. Write a Python program to calculate area of a circle.
85. Write a Python program to input name and print greeting message.
86. Write a Python program to reverse a string.
87. Write a Python program to count vowels in a string.
88. Write a Python program to find maximum of three numbers.
89. Write a Python program to check whether a year is leap year or not.
90. Write a Python program to calculate sum of first N natural numbers.

---

## **SECTION E — CASE STUDY BASED QUESTIONS (91–100)**

### **CASE STUDY 1**

A school computer lab has 25 computers connected through a network. The lab uses a server, switches, printers, and internet connection.

91. Which type of network is used in the lab?
92. Which device connects all computers in the lab?
93. Which device is used to print documents?
94. Which software manages hardware resources in computers?
95. Suggest one advantage of networking in the lab.

---

### **CASE STUDY 2**

Rohan is learning Python programming. He writes the following code:

```
x = 10
y = 20
print(x+y)
```

96. What will be the output of the program?
97. Which operator is used in the program?
98. Identify the variables used in the program.
99. Which function is used to display output?
100. Rewrite the program to multiply the two numbers instead of adding them.

## **PHYSICAL EDUCATION**

### **CLASS- XI**

1. Complete the work of Lesson 2 & Lesson 3 in your registers and learn them.
2. Revise worksheets and notes provided on the class Whatsapp group.
3. Write the following in your Physical Education Lab Manual (Practical File) -

#### **PART A. PHYSICAL FITNESS TEST-**

SAI Khelo India Fitness Test

#### **PART B. GAMES AND SPORTS-**

Any one game out of the options below. Labelled diagram of field, history, Star players, Awards, rules, equipment, etc.

Cricket/Football

Swimming/Volleyball

Badminton/Hockey

Basketball/Boxing

Kabaddi / Handball

Table Tennis/ Chees

#### **PART C. YOGA-**

Do practice of any five asana at your home on daily basis.

#### **PART D. ASANAS-**

Procedure for asana, benefits and contraindication of any two asana with pictures for lifestyle diseases-Diabetes, Obesity, Hypertension, Asthma, Backpain write in your lab manual