

SUGHAR SINGH ACADEMY (SWARN JAYANTI VIHAR) SUMMER VACATION HOLIDAY HOMEWORK (2025-26) CLASS-XI (Science)

English	1- Prepare a project on 'The Portrait of a Lady'.			
Hindi	1- ग्रीष्म कालीन अवकाश के किन्हीं 07 दिनों का अन्भव अपनी डायरी में लिखिए।			
	2- परियोजना कार्य (प्रोजेक्ट फाइल) तैयार करें।			
	*कवि या लेखक परिचय			
	*संचार के माध्यम (अखबार , रेडियो, टेलीविजन, इंटरनेट)			
	*कक्षा में कराए गए सभी पाठों का अभ्यास करें।			
Physics	Do the given worksheet.			
Chemistry	Do the given worksheet.			
Biology	1. Complete given project.			
	2. Prepare model on the allotted topic.			
Mathematics	Do the given worksheet.			
Computer	Do the given worksheet			
Physical	1. Prepare a labelled chart of anyone game.			
Education	a) Badminton, b) Cricket, c) Football, d) Kabaddi, e) Kho kho			
	2. Prepare a labelled chart of any five asanas.			
	3. Perform a physical activity everyday at least for an hour.			
	4. Learn lesson 1 and 2.			



SUGHAR SINGH ACADEMY (SWARN JAYANTI VIHAR)

SUMMER HOLIDAY HOMEWORK (2025-26) SUBJECT- ENGLISH LANGUAGE

CLASS-XI

Instructions: Read each sentence carefully and identify its type. Write S for simple, CD for compound, and CX for complex in the space provided. For compound and complex sentences, also identify the independent and dependent clauses as requested.

1: Identifying Sentence Types (Questions 1-25)

- * _____ The rain fell steadily throughout the afternoon.
- * _____ The wind howled, and the trees swayed violently.
- * _____ Because the roads were icy, the school bus arrived late.
- * _____ She enjoys painting landscapes and portraits.
- * _____ Although he felt unwell, he still attended the meeting.
- * _____ The cat purred contentedly on the warm blanket, and it occasionally twitched its tail.
- After the final bell rang, the students rushed out of the classroom.
- * _____ My friend plays the violin beautifully, but I prefer the cello.
- * _____ If you practice regularly, you will see improvement in your skills.
- * _____ The old castle stood majestically on the hilltop.
- * _____ She is a talented writer, and her essays are often praised.
- * _____ While the dinner cooked, he read a chapter of his book.
- * _____ The children laughed and played in the sunshine.
- * _____ He wanted to travel abroad, yet his passport had expired.
- * _____ Since the library was closed, they went to a coffee shop.
- * _____ The athlete trained rigorously for months before the competition.
- * _____ The movie was long, but we found it very entertaining.
- * _____ As soon as the guests arrived, the party began.
- * _____ He carefully watered the plants in the garden.
- * _____ The artist used vibrant colors, and the painting came to life.
- * _____ Because she had studied diligently, she aced the exam.
- * _____ The mountain air was crisp and refreshing.
- * _____ Although the task was challenging, they persevered.
- * _____ The river flowed gently through the valley, and birds sang in the nearby trees.
- * _____ Until the sun sets, we will continue our hike.

2: Identifying Clauses (Questions 26-40)

For each sentence below, identify the independent clause(s) and the dependent clause(s).

- * Because of the heavy traffic, we were delayed.
- Independent Clause(s):

Dependent Clause(s):

* The dog wagged its tail excitedly, and it barked at the approaching car.

Independent Clause(s):

Dependent Clause(s):

* If you finish your chores, you can watch television.

Independent Clause(s):

Dependent Clause(s):

* She enjoys listening to podcasts while she commutes to work.

Independent Clause(s):

Dependent Clause(s):

* Although the recipe was complicated, he decided to try it anyway.

Independent Clause(s):

Dependent Clause(s):

* The old photograph was faded, but it still held precious memories. Independent Clause(s): Dependent Clause(s):

* After the storm passed, the sky cleared up beautifully. Independent Clause(s):

Dependent Clause(s):

- * My neighbor grows beautiful roses, and she often shares them with us.
- Independent Clause(s):
- Dependent Clause(s):
- * Since he had all the necessary equipment, he started the repairs immediately. Independent Clause(s):
- Dependent Clause(s):
- * The scientist conducted numerous experiments in the laboratory.
- Independent Clause(s):
- Dependent Clause(s):
- * While the orchestra played, the audience listened in rapt silence.
- Independent Clause(s):
- Dependent Clause(s):
- * He finally achieved his goal, for he had worked incredibly hard.
- Independent Clause(s):
- Dependent Clause(s):
- * If the instructions are followed carefully, the assembly will be easy. Independent Clause(s):
- Dependent Clause(s):
- * She loves to bake cakes, and her family enjoys eating them.
- Independent Clause(s):

Dependent Clause(s):

- * Before the guests arrived, they finished setting the table. Independent Clause(s):
- Dependent Clause(s):

3: Combining Sentences (Questions 41-50)

Combine each pair of simple sentences to create either a compound (CD) or a complex (CX) sentence. Use appropriate coordinating conjunctions, subordinating conjunctions, or relative pronouns.

- * The sun was setting. The birds were returning to their nests.
- Combined Sentence:
- * He felt tired. He continued to work on his project.
- Combined Sentence:
- * The book was fascinating. She couldn't put it down. Combined Sentence:
- * The chef added spices to the dish. It enhanced the flavor.
- Combined Sentence:
- * The weather was pleasant. They decided to have a picnic outdoors. Combined Sentence:
- * She practiced her dance routine. She wanted to perform flawlessly. Combined Sentence:
- * The car broke down. They had to call for assistance.
- Combined Sentence:
- * The old house stood on a hill. It had a mysterious history. Combined Sentence:
- * He enjoys playing soccer. His sister prefers basketball. Combined Sentence:
- * The concert began late. The audience was becoming impatient. Combined Sentence:

SUGHAR SINGH ACADEMY

HOLIDAY-HOMEWORK

Mathematics

Class-XI

- 1. Write the following sets in the roster form-
 - (a) $A = \{x : x \text{ is a natural number , } 6 \le x \le 15\}$
 - (b) $B = \{x : x \text{ is a real number , } 6 \le x \le 15\}$
 - (c) $C = \{x : x \text{ is a perfect square and } x < 50\}$
 - (d) $D = \{x : x \in R \text{ and } x^3 6x^2 + 11x 6 = 0\}$
 - (e) $E = \{x : x \in Z \text{ and } -\frac{1}{2} < x < \frac{13}{2}\}$
 - (f) $F = \{x : x \in R, |x| \le 3\}$
- 2. Write the following sets in set-builder form-
 - (a) A = [-1, 1)
 - (b) $B = \{\frac{1}{2}, \frac{2}{5}, \frac{3}{10}, \frac{4}{17}, \frac{5}{26}, \frac{6}{37}, \frac{7}{50}\}$
- 3. Write down all subsets of each of the following sets-

A. $P = \{-1, 0, 1\}$ B. $Q = \emptyset$ C. $R = \{2, \{3\}\}$ D. $S = \{0, 1, \{2, 3\}\}$

- 4. If $A \subset B, B \subset A$, then prove that A = B.
- 5. If A = (2, 4) and B = [3, 5), then find $A \cap B$.
- 6. If $A = \{\frac{1}{x} : x \in N \text{ and } x < 8\}$ and $B = \{\frac{1}{2x} : x \in N \text{ and } x \le 4\}$, then find A. $A \cup B$ B. $A \cap B$ C. A - B D. B - A
- 7. If $A = \{a, b, c, d, e\}, B = \{a, c, e, g\}$ and $C = \{b, e, f, g\}$, then find-A. $A \cap (B - C)$ B. $A - (B \cup C)$ C. $A - (B \cap C)$
- 8. If $A = \{x : x \in N, x \le 7\}$, $B = \{x : x \text{ is a prime }, x < 8\}$ and $C = \{x : x \in N, x \text{ is odd and } x < 10\}$, then verify that-
 - (a) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
 - (b) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
- 9. For any sets A and B, using venn-diagram, prove that-
 - (a) $(A B) \cap B = \emptyset$
 - (b) $A \cup (B A) = A \cup B$
 - (c) $(A-B) \cup (A \cap B) = A$
 - (d) $A \cap B' = \emptyset \Rightarrow A \subset B$
 - (e) $A' \cup B = U \Rightarrow A \subset B$

(f) $A \subset B \Rightarrow B' \subset A'$

10. If $X = (-\infty, 5)$ and $Y = (4, \infty)$, then find-

A. $X \cap Y$ B. $X \cup Y$ C. X - Y D. Y - X

- 11. Let $A = \{x : x \in W, x < 3\}, B = \{x : x \in N, 1 < x \le 4\}$ and $C = \{x : x^2 8x + 15 = 0\}$, then verify that-
 - (a) $A \times (B \cup C) = (A \times B) \cup (A \times C)$
 - (b) $A \times (B \cap C) = (A \times B) \cap (A \times C)$
- 12. Let $R = \{(x, y) : x + 3y = 12, x \in N \text{ and } y \in N\}.$
 - (a) Write *R* in roster form.
 - (b) Find dom(R) and range(R).
- 13. Let $R = \{(x, y) : x, y \in Z \text{ and } x^2 + y^2 \le 4\}.$
 - (a) Write *R* in roster form.
 - (b) Find dom(R) and range(R).
- 14. If $f(x) = \frac{x-1}{x+1}$, then show that $f(\frac{1}{x}) = -f(x)$.
- 15. Find the domain and range of the following functions-
 - (a) $f(x) = \frac{x-3}{x+5}$ (b) $f(x) = \frac{x+4}{2x-3}$ (c) $f(x) = \frac{x^2+1}{x^2-1}$ (d) $f(x) = \sqrt{2-x}$ (e) $f(x) = \sqrt{4-x^2}$ (f) $f(x) = \sqrt{x^2-4}$ (g) $f(x) = \frac{x}{x^2+1}$ (h) $f(x) = \sec x$ (j) $f(x) = \sqrt{\frac{x-5}{3-x}}$ (k) $f(x) = \frac{1}{x^2}$

16. The minute hand of a watch is 1.4 cm long. How far does its tip move in 45 minutes? (Use $\pi = \frac{22}{7}$)

17. Find the value of the following-

- 18. Do all the exercises of first 3 chapters of NCERT..
- 19. Prove that $\cos 130^{\circ} \cos 40^{\circ} + \sin 130^{\circ} \sin 40^{\circ} = 0$
- 20. Prove that $\cos x + \cos(\frac{2\pi}{3} + x) + \cos(\frac{2\pi}{3} x) = 0$



(a) 3.22×10^{-19} I

SUGHAR SINGH ACADEMY (SWARN JAYANTI VIHAR) SUMMER HOLIDAY HOMEWORK (2025-26) SUBJECT- CHEMISTRY CLASS-XI

Note - Study the given paragraph answer the following

1. In 1924, de Broglie suggested that if the light is known to consist of waves and under certain situations assume the aspect of a particle then the particle should also behave like a wave. He based his reasoning on the assumption that nature possesses symmetry and that the two physical entities matter and waves must be symmetrical also. De Broglie took the quantum idea of emission of energy of a photon of radiation of a certain Frequency which can be obtained using the equation given by him. That equation is called de Broglie's equation and this wavelength is called de Broglie's wavelength. The novel idea of this equation is the wave- particle nature of matter with the relative motion

(A) De broghe equation is obtained by a combination	101.	
(a) Interference	(b) Diffraction	
(c) Einstein's theory of mass-energy equivalence	(d) Photoelectric effect	
(B) Wave nature of the electron is shown by:		
(a) Photoelectric effect	(b) Crompton effect	
(c) Diffraction experiment	(d)None of the above	
(C) de Broglie wavelength of a particle is:		
(a) Proportional to mass.	(b) Inversely proportional to momentum.	
(c) Inversely proportional to plank constant	(d) Proportional to velocity	

2. Based on the wave model of light, physicists predicted that increasing light amplitude would increase the kinetic energy of emitted photoelectrons, while increasing the Frequency would increase measured current. Contrary to the predictions, experiments Showed that increasing the light frequency increased the kinetic energy of the photoelectrons, and increasing the light amplitude increased the current. Based on these Findings, Einstein proposed that light behaved like a stream of particles called photonswith an energy of E = hv

(A) Radiation of 2500 Å falls on a metal with a work function of 4 eV. The kinetic Energy of the fastest photoelectron will be:

(b) 1.55×10^{-19} I

(u) 5.22 A 10 5	(0) 1.55 x 10 5
(c) $4 \ge 10^{-19}$ J	(d) $2.5 \ge 10^{-19} J$
(B) When a photoelectric experiment is conducted, the	number of electrons Released is proportional to the:
(a) Intensity of light	(b) Brightness of light
(c) Both (a) and (b)	(d) None of the above
(C) For an ejected electron, kinetic energy is:	
(a) Same as the frequency of the radiation from electro	magnetic fields.
(b) Proportional to the frequency of the radiation from	electromagnetic fields.
(c) Greater than the frequency of the radiation from ele	ectromagnetic fields.
(d) Inversely proportional to the frequency of the radia	tion from electromagnetic fields.
(D) In an orbit, magnitude of kinetic energy is equal to	:
(a) Half of the potential energy	(b) Twice of the potential energy
(c) one-fourth of the potential energy	(d) None of the above
(E) The minimum energy required to remove an electro	on is called:
(a) Stopping potential	(b) Kinetic energy
(c) Work function	(d)None of these

Some Basic Concepts of Chemistry

Case Study Based Questions

Read the following passages and answer the questions that follow:

1. Recent studies have revealed that the simplest form of matter is atoms and elements may also be defined as the pure substance which is made of one kind of atoms. Examples are carbon, sulphur, hydrogen, oxygen, etc. A compound is also a pure substance like element but it is made up of two or more elements. For example, in sodium chloride the two elements sodium and chlorine are present in the ratio of 23:35.5 by mass. Both elements and compounds are pure substances. But on mixing two or more substances in any ratio, mixture results. For example, air is a mixture of different gasses like nitrogen, oxygen, carbon dioxide, water vapour, etc. Further, mixtures are divided into two categories: homogeneous and heterogeneous.



(A) Classify the following as pure substances or mixtures: Graphite and iodized table salt.(B) Why is tap water considered a mixture while distilled water as a compound?(C) Why is the gaseous state of ammonia regarded as gas while that of water as vapours?

Ans. (A) Graphite- Pure substance (Element). lodized table salt- Mixture(Heterogeneous)
(B) Tap water constitutes some impurities such as dust particles which are normally mixed with it and not combined chemically. In tap water, the constituents are not present in a fixed ratio and hence, it is a mixture. Distilled water contains only water molecules since it is free from impurities, it is therefore, considered as a compound.
(C) Only the gaseous states of those substances are regarded as vapours which are liquid at room temperature. Since ammonia exists as a gas at room temperature. Hence, its

gaseous state is called gas while water is a liquid at room temperature. Hence, its gaseous state is called vapours.

2. Atoms and molecules are so small in size that it is neither possible to count them individually nor possible to determine their mass. These are counted collectively in terms of Avogadro's number. The mass of Avogadro's number of atoms and molecules is known as gram atomic mass and gram molecular mass respectively. The volume occupied by Avogadro's number of molecules of a gas or vapour is known as molar volume.

(A) Mass of CO2 is 88 g. The number of atoms of oxygen present in it, is:

- (a) 2.41 x 1024
- (b) 1.2 x 1023
- (c) 1.4 x 1023
- (d) 2.41 x 1023

(B) Calculate the molecular mass of cane sugar.

- (a) 350 g
- (b) 361 g
- (c) 342 g
- (d) 345 g

(C) What will be the number of molecules in one mole of a gas at 100°C and 500 mm pressure?

- (a) Less than Avogadro's number
- (b) Equal to Avogadro's number
- (c) Greater than Avogadro's number
- (d) With the change in temperature and pressure, the number of particles will change.

(D) If NA is Avogadro's number, then the number of valence electrons in 70 g of nitride ions (N³) is:

- (a) 42 N_A
- (b) 40 N_A
- (c) 16 N_A
- (d) 45 N_A

(E) Choose the correct mass (in grams) of 11.2 L of N2 at STP.

(a) 13 g

(b) 14.5 g

(c) 14 g

(d) 15 g

Ans. (A) (a) 2.41 x 10²⁴

Explanation: 44.0 g of CO2 contains oxygen atoms

= 2 × 6.022 × 10²³

Now, 88.0 g of CO2 contains oxygen atoms

= 2 x 2 x 6.022 × 10²³

= 2.41 x 10²⁴ atoms

(B) (c) 342 g

Explanation: Molecular mass of cane sugar C₁₂H₂₂O₁₁-

 $= (12 \times 12) + (22 \times 1) + (16 \times 11)$

= 342 g

(C) (b) Equal to Avogadro's number

Explanation: The number of molecules in one mole of a gas will be equal to Avogadro's number. However, any change in temperature and pressure will have no influence on the number of particles present.

(D) (b) 40 N_A

Explanation: Moles of N³- ion

 $= \frac{70}{14}$ = 5 mol

No. of N^3 ions = 5 x Na ions

No. of valence electrons in one,

 N^{3} -ion = 5+3=8

Total no. of electrons

 $= 5 \times 8 \times N_A$

(E) (c) 14 g

= 40 N_A

Explanation: 22.4 L of N₂ at STP weighs

= 28.0 g

11.2 L of N_2 at STP weighs

$$=\frac{28}{22.4} \times 11.2$$

= 14.0 gm

3. A binary solution is made up of two liquids that are entirely miscible with each other. In a binary solution, the component with the lowest concentration is known as the solute, while the component with the highest concentration is known as the solvent. One mole of the solute a 1 molar solution. A 1 molal solution is one in which one mole of solute is dissolved in one kilogram of solvent. The number of moles of a given component to the total number of moles in the solution is referred to as the mole fraction.



(A) 6.02×10^{20} molecules of urea are present in 100 mL of its solution. The concentration of the solution is:

- (a) 0.02 M
- (b) 0.01 M
- (c) 0.001 M
- (d) 0.1 M

(B) What will be the mole fraction of glycol C2H4(OH)2 in a solution containing 45 g of water and 56 g of glycol?

- (a) 0.31
- (b) 0.50
- (c) 0.26
- (d) 0.10

(C) The value of molality for pure water is:

- (a) 55.55
- (c) 52
- (b) 52.6
- (d) 25

(D) What is the mass per cent of the carbon in ethanol?

(a) 59

(b) 42

(c) 45 (d) 52

(E) What is the correct advantage for using molality over molarity?

(a) Molarity does not depend upon temperature.

(b) Molality does not depend upon temperature.

(c) Molality depend on temperature.

(d) None of the above

Ans. (A) (b) 0.01 M

Explanation:

Number of moles = $\frac{Molecules of urea}{Avogadro's number}$

$$\frac{6.02{\times}10^{20}}{6.02{\times}10^{23}}$$

 $= 10^{-3}$

Molarity = Number of moles of solute/

volume of solution

$$\frac{10^{-3}}{0.1} = 0.01 \text{M}$$

(B) (c) 0.26

Explanation: Mole fraction of glycol

= No. of moles of glycol No. of moles glycol + No. of moles of water

$$=\frac{\frac{56}{62}}{\frac{56}{62}+\frac{45}{18}}$$
$$=\frac{0.9}{0.9+2.5}=0.26$$

(C) (a) 55.55

Explanation: Molality

= No. of moles of solute Mass of solvent in kg Molality for a water molecule $=\frac{45}{18}$ = $\frac{45}{1000}$ = 55.55 m (D) (d) 52 Explanation: Molecular mass of ethanol = 2 x 12 +6 x 1 + 16 = 46 u The mass per cent of carbon Mass of Carbon 24

 $=\frac{\text{Mass of Carbon}}{\text{Mass of Ethanol}}=\frac{24}{46}\times100=52\%$

(E) (b) Molality does not depend upon temperature.

Explanation: Molality is favored over molarity as the unit of concentration because molality is a function of temperature and changes with temperature but molarity is independent of temperature so it stays the same. The mass of the solvent is also independent of temperature so it remains constant.

4. The reactants react according to the balanced chemical equation. Quite often, these are not present in the same proportions as is required by the equation; some may be present in a lesser amount while the others may be present in excess than the stoichiometric amounts. The reactant which is present in a lesser quantity is known as a limiting reagent or limiting reactant

since it limits the participation of the other reactants in the reaction and also the product of the reaction. For example, in the combustion of methane with oxygen methane is the limiting reactant because oxygen is always available

more than the amount of methane. Amount of carbon dioxide and water formed also depends upon the amount of methane and not oxygen.

(A) Find the number of moles of lead (II) chloride formed as a result of the reaction between 6.5 g of PbO and 3.2 g of HCL.

(B) 14g hydrogen and 80 g oxygen were filled in a steel vessel and exploded. The amount of water produced in the reaction will be?

(C) Why is it necessary to balance a chemical equation?

Ans. (A)

 $\begin{array}{rrrr} PbO &+& 2HCl \rightarrow PbCl_2 &+& 2H_2O\\ 1 \mbox{ mole} & 2 \mbox{ moles} & 1 \mbox{ mole} & 2 \mbox{ moles} \\ \\ \hline \frac{6.5}{224} \mbox{ mol} & \frac{3.2}{36.5} \mbox{ mol} \\ 0.029 \mbox{ mol} & 0.087 \mbox{ mol} \end{array}$

So, PbO is the limiting reactant.

= 0.029 mol of PbCl₂ is formed.

(B)

 $\begin{array}{l} H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow H_2O_{(l)} \\ 1 \text{ mole } 0.5 \text{ mole } 1 \text{ mole} \end{array}$

14 g of
$$H_2 = \frac{14}{2}$$
 mole = 7 mol
80 g of O_2

 $=\frac{80}{32}$ mole = 2.5 mol

So, O_2 is the limiting reagent.

Since 0.5 mole of oxygen from water = 1 mol So, 2.5 mol of oxygen form water

$$= \frac{1}{0.5} \times 2.5$$
$$= 5 \text{ mol}$$

(C) A chemical equation has to be balanced in order to satisfy the law of conservation of mass. According to the law, there is no change in mass when the reactants changeinto the products. Therefore, the chemical equation has to be balanced.



SUGHAR SINGH ACADEMY (SWARN JAYANTI VIHAR) SUMMER HOLIDAY HOMEWORK (2025-26) SUBJECT- PHYSICS CLASS-XI

- **1.** What are the advantages and disadvantages of dimensional analysis?
- **2.** If Gravitational force is given by the formula $F=GM_1M_2/R^2$, find the dimensional formula of G.

3. Find the dimensions of the Density, Pressure, and Momentum and Energy by Taking Force, length, and time to be the fundamental quantities.

4. A system has basic dimensions as density D, velocity V, and area A. Find the dimensional representation of force in this system.

5. The speed of light c, gravitational constant G and the Planck's constant h are taken as the fundamental units in a system. Find the dimensions of length and time in this new system of unit.

6. Out of the following pairs, which one does not have identical dimensions?

- a) Angular momentum and Planck's constant
- b) Impulse and momentum
- c) Moment of inertia and moment of force
- d) Work and torque
- **7.** Choose the correct statements:
- a) A dimensionally correct equation may be correct
- b) A dimensionally incorrect equation may be correct
- c) A dimensionally correct equation may be in correct
- d) A dimensionally incorrect equation may be incorrect
- 8. Which one of the following quantities has not been expressed in proper units?
- a) Torque: Newton metre
- b) Work: Newton metre
- c) Coefficient of friction: Newton kg⁻¹
- d) Power: Newton metre second -1
- **9.** If 'muscle times speed equals power', what is the ratio of the SI unit and the CGS unit of muscle? (a) 10^5 (b) 10^3 (c) 10^7 (d) 10^{-5}
- **10.** The magnitude of any physical quantity
- (a) depends on the method of measurement
- (b) does not depend on the method of measurement
- (c) is more in SI system than in CGS system
- (d) directly proportional to fundamental unit of mass, length and time
- **11.** Which one of the following is not a derived unit?
- (a) Frequency

(c) Gravitational constant

- (b) Planck's constant
- (d) Electric current

12. Find the dimensions of $\frac{a}{b}$ in the equation P= (a-t²)/ (bx). Where P is power, x is distance and t is time.

13. If force $F = \alpha / (\beta^3 + \text{density})$, then find the dimension of α and β .

14. In Vander wall's gas equation given by $(P + a/V^2)$ (V-b) = RT. Find the dimensional formula of constants a and b. Where P=Pressure, V =Volume, T=Temperature.

15. The velocity V	of a point at time t is given by v=	at + $(\frac{b}{t+c})$. The dimensi	ons of a, b, and c are
a) [L ² , T, LT ²]	(b) [LT ² , LT, L]	(c) [LT ⁻² , L, T]	(d) [L, LT, T ²]



SUGHAR SINGH ACADEMY (SWARN JAYANTI VIHAR)

SUMMER HOLIDAY HOMEWORK (2025-26)

SUBJECT- COMPUTER CLASS-XI

- 1. What is the role of CPU in a mobile system?
- 2. What is Unicode? What is its significance?
- 3. What does radix or base signify?
- 4. What is the use of encoding schemes?
- 5. Why is the execution time of the machine code less than that of source code?
- 6. How does the computer understand a program written in high level language?
- 7. Why NAND and NOR gates called Universal gates?
- **8.** Evaluate using truth table XY'(Z+YZ')+Z'?
- **9.** Find out the boolean expression of the following logic circuit is:



10. Verify the following using truth table:

(i)a.(a+b) = a

(ii) X.(Y+Z) = X.Y + X.Z

Note: Write the code of below programs using python:

- **11.** Write a program to find out the factorial of given number.
- **12.** Write a program that inputs a student's marks in three subjects (out of 100) and prints the percentage marks.
- **13.** Write a program to compute the HCF of given numbers.
- **14.** Write a program to check the three digits Armstrong number.
- **15.** Write a program to read two numbers and prints their quotient and reminder.
- **16.** Write a program to find whether a given number is even or odd.
- **17.** Write a program to find the largest among the three integers.
- **18.** Write a program to find the lowest among the three integers.
- 19. Write a program that accepts weight in Kg and height in meters and calculate the BMI.
- 20. Write a program that reads the number n and print the value of n², n³ and n⁴.
- 21. Write a program to accept the marks of five subjects and calculate the average marks.
- 22. Write a program to accept the height in cm and convert it into feet and inches.