

Holidays Homework

CLASS - 11th NM

English

Prepare all these in a A4 size sheet and compile them in a file.

Q.1 Write **Notices** on the following occasions (three of each category)

- a. Tours
- b. Sports
- c. Cultural/Extra-curricular activities
- d. Lost & Found
- e. Appeals

Q.2. Write **Formal letters** on the following topics (Two of each category)

- a. Complaint
- b. Editor
- c. Placing order
- d. Enquiry
- e. Job Application

Q.3 Write **Articles** on the following topics (Do no any 2 topics)

- a. My vision of future India
- b. Digital education in India
- c. Women safety in India
- d. 50-years of Earth Day

Q.4 Read all the poems and Write down their Poetic Devices, Summary and Theme.

Hope you all have a great holiday and make sure to keep yourself safe. 🍀 😊 🍀

Physical Education

Q- Define Physical education and explain it's aim and objectives in detail.

Q- Elaborate the ' khelo India programme in detail.

Q- what are the career option in physical education?

Q- Explain the origin of Ancient Olympic Game and modern Olympic games

Q- write short note on:

- (i) Olympic motto
- (ii) Olympic flag
- (iii) Olympic flame

Q- Anyone one IOA recognized sports/Game of choice. Labelled diagram of field and equipment. Also mention it's rules, Terminologies and skills.

Mathematics

Part A: Basic Concepts and Definitions

* Define the following terms with an example for each:

- * Set
- * Empty Set (Null Set)
- * Singleton Set
- * Finite Set
- * Infinite Set

* Write the following sets in Roster Form:

- * $A = \{x : x \text{ is an integer, } -3 < x < 2\}$
- * $B = \{x : x \text{ is a natural number less than } 7\}$
- * $C = \{x : x \text{ is a two-digit natural number such that the sum of its digits is } 8\}$
- * $D = \{x : x \text{ is a prime number which is a divisor of } 60\}$
- * $E = \{x : x \text{ is a letter in the word "MATHEMATICS"}\}$

* Write the following sets in Set-Builder Form:

- * $P = \{2, 4, 6, 8, \dots\}$
- * $Q = \{1, 4, 9, 16, 25\}$
- * $R = \{\text{January, June, July}\}$
- * $S = \{5, 10, 15, 20\}$
- * $T = \{\dots, -2, -1, 0, 1, 2, \dots\}$

Part B: Operations on Sets

Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ be the universal set.

Let $A = \{1, 3, 5, 7, 9\}$

Let $B = \{2, 3, 5, 7\}$

Let $C = \{1, 2, 4, 6, 8\}$

Perform the following operations and write the resulting sets:

- * A union B
- * A intersection C
- * $B - A$
- * $C - B$
- * A' (Complement of A)
- * $(B \text{ union } c)'$
- * $(A - B)'$

Part D: Word Problems and Applications

* In a survey of 400 students in a school, 100 were listed as taking apple juice, 150 as taking orange juice and 75 were listed as taking both apple as well as orange juice. Find how many students were taking neither apple juice nor orange juice.

* In a committee, 50 people speak French, 20 speak Spanish and 10 speak both Spanish and French. How many people speak at least one of these two languages?

- * a) Exactly one game.
- * b) Exactly two games.
- * c) Neither of the three games.

Q1.State the number of significant figures in the following: (a) 0.007 m² (b) 2.64 x 10⁴ kg (c) 0.2370 g cm⁻³ (d) 6.320 J (e) 6.032 N m⁻² (f) 0.0006032

Q2. Two trains A and B of length 400 m each are moving on two parallel tracks with a uniform speed of 71 km h⁻¹ in the same direction, with A ahead of B. The driver of B decides to overtake A and accelerates by 1 ms⁻¹. If after 50 s, the guard of B just brushes past the driver of A, what was the original distance between them?

Q3. A player throws a ball upwards with an initial speed of 29.4 ms^{-1} . (a) What is the direction of acceleration during the upward motion of the ball? (b) What are the velocity and acceleration of the ball at the highest point of its motion? (c) Choose the $x = 0 \text{ m}$ and $t = 0 \text{ s}$ to be the location and time of the ball at its highest point, vertically downward direction to be the positive direction of x -axis, and give the signs of position, velocity and acceleration of the ball during its upward, and downward motion. (d) To what height does the ball rise and after how long does the ball return to the player's hands?

Q4. The ceiling of a long hall is 25 m high. What is the maximum horizontal distance that a ball thrown with a speed of 40 m s⁻¹ can go without hitting the ceiling of the hall?

Q5. A body of mass 0.40 kg moving initially with a constant speed of 10 ms⁻¹ to the north is subject to a constant force of 8.0 N directed towards the south for 30 s. Take the instant the force is applied to be $t = 0$, the position of the body at that time to be $x = 0$, and predict its position at $t = -5$ s, 25 s, 100 s. Q5.h a uniform speed of 10 ms⁻¹. (b) downwards with a uniform acceleration of 5 ms⁻². (c) upwards with a uniform acceleration of 5 ms⁻². S. What would be the readings on the scale in each case? (d) What would be the reading if the lift mechanism failed and it hurtled down freely under gravity?

Q6 Drive formula of time of flight, maximum height and range in projectile motion.

Q7. Explain friction and its graph with applied force.

Q8. Two bodies of masses 10 kg and 20 kg respectively kept on a smooth, horizontal surface are tied to the ends of a tight string. A horizontal force $F = 600 \text{ N}$ is applied to (i) A, (ii) B along the direction of string. What is the tension in the string in each case?

- Number of HCl molecules present in 10 mL of 0.1 M solution is :
(1) 6.022×10^{23} (2) 6.023×10^{22}
(3) 6.022×10^{21} (4) 6.022×10^{20}
- The volume of a gas at 0°C and 700 mm pressure is 760 cc. The no. of molecules present in this volume is
(1) 1.88×10^{22} (2) 6.022×10^{23}
(3) 18.8×10^{23} (4) 18.8×10^{22}
- The number of moles of carbon dioxide which contain 8 g of oxygen is –
(1) 0.5 mole (2) 0.20 mole
(3) 0.40 mole (4) 0.25 mole
- If 224 mL of a triatomic gas has a mass of 1 g at 273 K and 1 atm pressure, then the mass of one atom is –
(1) 8.30×10^{-23} g (2) 2.08×10^{-23} g
(3) 5.53×10^{-23} g (4) 6.24×10^{-23} g
- The maximum number of molecules are present in
(1) 5 L of N_2 gas at STP
(2) 0.5 g of H_2 gas
(3) 10 g of O_2 gas
(4) 15 L of H_2 gas at STP
- How many moles of magnesium phosphate, $\text{Mg}_3(\text{PO}_4)_2$ will contain 0.25 mol of oxygen atoms?
(1) 2.5×10^{-2} (2) 0.02
(3) 3.125×10^{-2} (4) 1.25×10^{-2}
- 22.4 L of water vapour at NTP, When condensed to water occupies an approximate volume of –
(1) 18 L (2) 1 L
(3) 1 mL (4) 18 mL
- 0.01 mol of iodoform (CHI_3) reacts with Ag to produce a gas whose volume at NTP is
$$2\text{CHI}_3 + 6\text{Ag} \rightarrow \text{C}_2\text{H}_2 + 6\text{AgI(s)}$$

(1) 224 mL (2) 112 mL
(3) 336 mL (4) None of these
- The minimum quantity in grams of H_2S needed to precipitate 63.5 g of Cu^{2+} will be nearly :
$$\text{Cu}^{+2} + \text{H}_2\text{S} \rightarrow \text{CuS} + \text{H}_2$$

(1) 63.5 g (2) 31.75 g
(3) 34 g (4) 20 g
- 2.76 g of silver carbonate on being strongly heated yields a residue weighing –
$$\text{Ag}_2\text{CO}_3 \rightarrow 2\text{Ag} + \text{CO}_2 + \frac{1}{2}\text{O}_2$$

(1) 2.16 g (2) 2.48 g (3) 2.32 g (4) 2.64 g
- The volume of gas at NTP produced by 100 g of CaC_2 with water is :-
$$\text{CaC}_2 + 2\text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 + \text{C}_2\text{H}_2$$

(1) 70 L (2) 35 L (3) 17.5 L (4) 22.4 L
- Element 'A' reacts with oxygen to form a compound A_2O_3 . If 0.359 g of 'A' reacts to give 0.559 g of the compound, then atomic weight of 'A' will be :-
(1) 51 (2) 43.08 (3) 49.7 (4) 47.9
- CaCO_3 is 90% pure. Volume of CO_2 collected at STP when 10 g of CaCO_3 is decomposed is -
(1) 2.016 L (2) 1.008 L
(3) 10.08 L (4) 20.16 L
- 50 g CaCO_3 will react with g of 20% pure HCl by weight .
(1) 36.5 g (2) 73 g (3) 109.5 g (4) 182.5 g
- Two oxides of a metal contains 50% and 40% of the metal respectively. The formula of the first oxide is MO . Then the formula of the second oxide is
(1) MO_2 (2) M_2O_3 (3) M_2O (4) M_2O_5

16. A gas mixture of 3 L of propane and butane on complete combustion at 25°C produces 10 L of CO_2 . Initial composition of the propane & butane in the gas mixture is –
 (1) 66.67%, 33.33% (2) 33.33%, 66.67%
 (3) 50%, 50% (4) 60%, 40%
17. The atomic mass of an element is 27. If valency is 3, the vapour density of the volatile chloride will be:-
 (1) 66.75 (2) 6.675 (3) 667.5 (4) 81
18. 1 L of a hydrocarbon weighs as much as 1 L of CO_2 under similar conditions. Then the molecular formula of the hydrocarbon is –
 (1) C_3H_8 (2) C_2H_6
 (3) C_2H_4 (4) C_3H_6
19. There are two oxides of sulphur. They contain 50% and 60% of oxygen respectively by weight. The weight of sulphur which combine with 1 g of oxygen is in the ratio of –
 (1) 1 : 1 (2) 2 : 1
 (3) 2 : 3 (4) 3 : 2
20. Percentage composition of an organic compound is as follows :
 $\text{C}=10.06$, $\text{H}=0.84$, $\text{Cl}=89.10$
 Which of the following corresponds to its molecular formula if the vapour density is 60.0
 (1) CH_2Cl_2 (2) CHCl_3
 (3) CH_3Cl (4) None
21. The ratio of masses of oxygen and nitrogen in a particular gaseous mixture is 1 : 4. The ratio of number of molecules is :
 (1) 1 : 8 (2) 3 : 16
 (3) 1 : 4 (4) 7 : 32
22. A gaseous hydrocarbon on combustion gives 0.72 g of water and 3.08 g of CO_2 . The empirical formula of the hydrocarbon is
 (1) C_2H_4 (2) C_3H_4
 (3) C_6H_6 (4) C_7H_8
23. What volume of oxygen gas (O_2) measured at 0°C and 1 atm, is needed to burn completely 1L of propane gas (C_3H_8) measured under the same conditions:-
 (1) 5 L (2) 10 L
 (3) 7 L (4) 6 L
24. Volume occupied by one molecule of water (density = 1 g cm^{-3}) is :-
 (1) $3.0 \times 10^{-23} \text{ cm}^3$ (2) $5.5 \times 10^{-23} \text{ cm}^3$
 (3) $9.0 \times 10^{-23} \text{ cm}^3$ (4) $6.023 \times 10^{-23} \text{ cm}^3$
25. How many moles of lead (II) chloride will be formed from a reaction between 6.5 g of PbO and 3.2 g of HCl ? (Atomic wt. of $\text{Pb}=207$)
 (1) 0.011 (2) 0.029
 (3) 0.044 (4) 0.333
26. The percentage of oxygen in ethanol is
 (1) 13.13% (2) 34.73%
 (3) 60% (4) 75%
27. Empirical formula of a compound is
 (1) Whole number ratio of various atoms present in compound.
 (2) Contain exact number of different types of atoms present in a molecule.
 (3) Simplest whole number ratio of various atoms present in a compound.
 (4) None of these
28. A compound contains 6.72% hydrogen, 40% carbon and 53.28% oxygen, its molecular mass is $180.18 \text{ g mol}^{-1}$ then molecular formula of compound is :-
 (1) $\text{C}_2\text{H}_2\text{O}_4$ (2) $\text{C}_2\text{H}_4\text{O}_{12}$
 (3) $\text{C}_6\text{H}_6\text{O}_{12}$ (4) $\text{C}_6\text{H}_{12}\text{O}_6$
29. When gases combine or are produced in a chemical reaction they do so in a simple ratio by volume provided all gases are at same temperature and pressure. This law is known as -
 (1) Dalton's Law (2) Gay Lussac's Law
 (3) Avogadro's Law (4) Law of Lavoisier