



# **BOARD ACTIVITY SHEET: MARCH 2023**

## **Science and Technology Part - 1**

## **Time: 2 Hours**

**Max. Marks: 40**

**Note:**

- i. All questions are compulsory.
- ii. Use of a calculator is not allowed.
- iii. The numbers to the right of the questions indicate full marks.
- iv. In case of MCQs (Q. No. 1(A)) only the first attempt will be evaluated and will be given credit.
- v. For every MCQ, the correct alternative (A), (B), (C) or (D) with subquestion number is to be written as an answer.  
For Eg.: (i) (A), (ii) (B), (iii) (C)
- vi. Scientifically correct, labelled diagrams should be drawn wherever necessary.

**Q.1. (A) Choose the correct alternative:**

[5]



**(B) Answer the following questions:**

[5]

- i. Find the odd man out:  
Loudspeaker, Microphone, Electric motor, Magnet.

- ii. Complete the co-relation:

$\text{CuI}_2$  : Brown : :  $\text{AgCl}$  : \_\_\_\_\_

- iii. Match the pair:**

<b>Group 'A' Substance</b>	<b>Group 'B' Refractive index</b>
Air	(a) 1.33
	(b) 1.46
	(c) 1.0003

- iv. State True or False:  
“Wavelength of red light is close to 700 nm.”

v. Write the name of small satellite made by a group of students from COEP (College of Engineering, Pune) sent to the space through ISRO in 2016.

**Q.2. (A) Give scientific reasons (any two):**

[4]

- i. For electric power transmission, copper or aluminium wire is used.
  - ii. Lemon or tamarind is used for cleaning copper vessels turned greenish.
  - iii. Elements belonging to the same group have the same valency.





[6]

**(B) Answer the following questions (any three):**

- How do we feel about air in each of the following conditions?
  - Relative humidity is more than 60%.
  - Relative humidity is less than 60%.
- Complete the following reaction:  
 $C_{12}H_{22}O_{11} \xrightarrow{\text{heat}} \underline{\quad} + \underline{\quad}$
- Distinguish between Mass and Weight.
- Complete the following table:

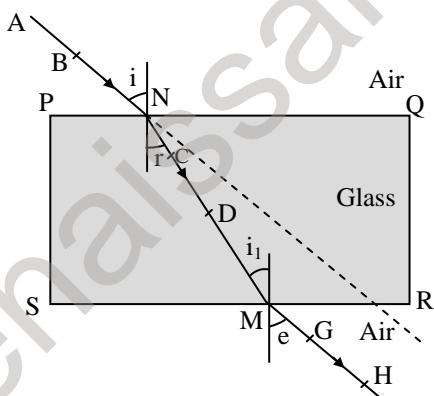
Type of Satellite		The names of Indian Satellite and launcher
1.	Navigational Satellite	Satellite : _____ Launcher : _____
	Earth observation Satellite	Satellite : _____ Launcher : _____
2.	Earth observation Satellite	Satellite : _____ Launcher : _____
	Earth observation Satellite	Satellite : _____ Launcher : _____

- Define periods and groups of modern periodic table.

**Q.3. Answer the following questions (any five):**

[15]

- Calculate the escape velocity on the surface of the moon given the mass and radius of the moon to be  $7.34 \times 10^{22}$  kg and  $1.74 \times 10^6$  m respectively. (Given:  $G = 6.67 \times 10^{-11}$  Nm $^2$ /kg $^2$ ).
- An element has its electron configuration as 2, 8, 1. Now answer the following questions:
  - What is the atomic number of this element?
  - What is the group of this element?
  - To which period does the element belong?
- Observe the figure and name the ray AB, ray CD, ray GH:

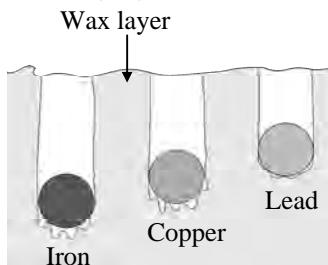


- Read the following sentence and answer the questions:  
 "NaCl is an ionic compound."
  - Why is NaCl an ionic compound?
  - State any two properties of ionic compounds.
- Identify the physical and chemical changes from the following phenomena:
  - Transformation of ice into water.
  - Ripening of fruit.
  - Milk turned into curd.
  - Evaporation of water.
  - Digestion of food in the stomach.
  - Iron fillings get attracted towards the magnet.





vi. Observe the following figure and answer the questions:



#### Specific heat capacity of metals

- Which element has maximum specific heat capacity? Justify.
- Which element has minimum specific heat capacity? Justify.
- Define specific heat of object.

vii. Identify figures A, B, C and give their uses:

(A)



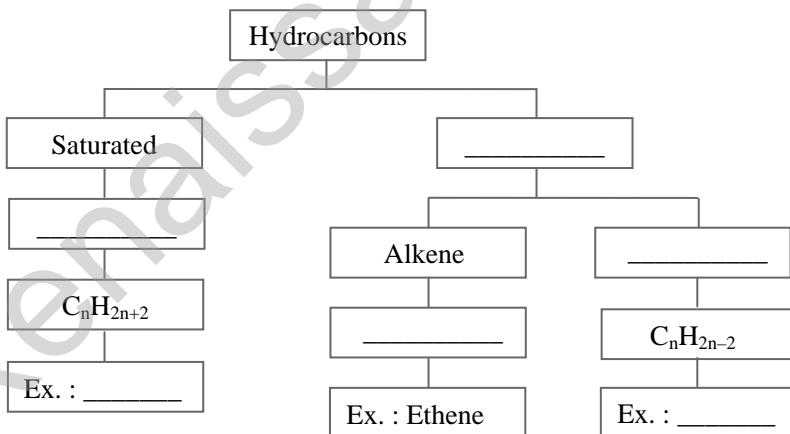
(B)



(C)



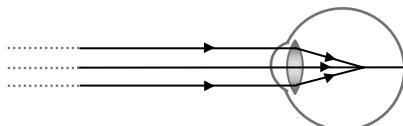
viii. Complete the following flow chart:



#### Q.4. Answer any one of the following questions:

[5]

i. Observe the figure and answer the following questions:



- Name the defect of vision represented in above figure.
- State the reasons for this defect.
- How is it corrected?
- Draw the diagram to show the correction of this defect.





ii. Complete the following table:

S.N.	Common Name	Structural Formula	IUPAC Name
1.	Ethylene	$\text{CH}_2 = \text{CH}_2$	_____
2.	Acetylene	_____	Ethyne
3.	Acetic acid	$\text{CH}_3 - \text{COOH}$	_____
4.	Methyl alcohol	_____	Methanol
5.	_____	$\text{CH}_3 - \text{CO} - \text{CH}_3$	Propane-2-one

Renaissance Classes

