Time – 2 Hours   **Std: X**   **Marks : 40**

Note :-
1. All questions are compulsory
2. Draw scientifically, technically correct labelled diagram wherever necessary.
3. Start writing each main question on a new page.
4. Figures to the right indicate full marks.
5. For each MCQ (i.e. Q. No.1-B) evaluation would be done for first attempt only.
6. For each MCQ correct alphabet has to be written.
   (Eg : (i) (a), (ii) (b)

Q-I-A –Answer the following questions.   **(5)**

1) Write proper answer in the box

   If $F \alpha \dfrac{m_1 m_2}{d^2}$, then F = $\boxed{}$

2) X, Y and Z are the elements of a Dobereiners Triad if the atomic mass of X is 7 and that of Z is 39, what should be the atomic mass of Y?

3) State whether the given statement is true or false :

   A Concave lens is a converging lens.

4) By Considering first correlation complete the second correlation:

   Hubble telescope : 569 Km high from earth surface:: Revolving orbit of Hubble telescope : $\boxed{}$

5) What is melting point of Solid?

**Q-I-B- Choose the correct alternatives**   **(5)**

1) The reaction of iron nail with copper Sulphate solution is _____ reaction.

   a) Combination   b) Decomposition c) Displacement   d) Double displacement

2) A ray of light makes an angle of 50^0 with the surface S_1, of the glass slab. Its angle of incidence will be _____

   a) 50^0 b) 40^0 c) 140^0 d) 0^0

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3) Aquatic plants and animals can survive in cold regions because of _____

   a) Humidity   b) dew point   c) heat capacity   d) Anomalous behavior of water

4) When light ray travels from denser medium to rarer, then it _____

   a) bends towards the normal   b) bends away from the normal
   c) goes undeviated   d) deviates randomly

5) Cinnabar is an ore of _____.

   a) Aluminum   b) Sodium   c) Iron   d) Mercury

Q-II- Attempt any five of the following questions   (10)

1) The absolute refractive index of water is 1.36. What is the velocity of light in water?
   (Velocity of light in vacuum 3×10^8 m/s)

2) Give scientific reasons:

   Nichrome is used in the electric equipments, not pure metal.

3) A metal ball of mass 5 kg falls from height of 490m. How much time it will take to reach the ground? ($g = 9.8$ m/s^2)

4) State the difference between :

   Farsightedness and nearsightedness

5) State four properties of ethanoic acid.

6) Explain the tems:-

   1) Catenation

   2) Isomerism

7) Observe the figure and complete the table.
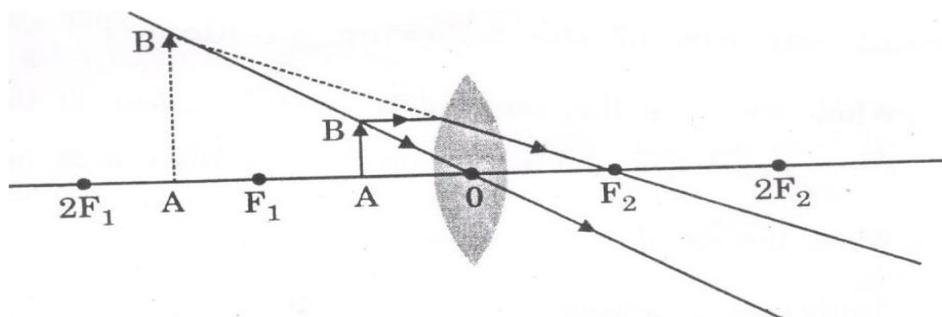
	Points	Answers
i	Position of the object	
ii	Position of the image	
iii	Size of the image	
iv	Nature of the image	

Q-III-A- Attempt any five of the following questions **(15)**

1. Write merits of Mendeleev's periodic table

2. Study the following chemicals reaction and answer the question given below.

   $$AgNO_{3(aq)} + Nacl_{(aq)} \longrightarrow AgCl_{(S)} + NaNO_{3(aq)}$$

   1) Identify and write the type of chemical reaction.

   2) Write the definition of above type of chemical reaction.

   3) Write the names reactions and products of above reaction.

3. Ayesha from Std X uses spectacle. The power of the lenses in her spectacle is 0.5D.

   Answer the following questions from the given information:-

   1) Indentify the type of lenses used in her spectacle.

   2) Identify the defect of vision Ayesha is suffering from.

   3) Find the focal length of the lenses used in her spectacles.

4. What is meant by space debris? Why there is need to manage the debris?

5. Write the IUPAC names of the following structural formula

   1) $CH_3 - CH_2 - CH_2 - CH_3$

   2) $CH_3 - CH - OH - CH_3$

   3) $CH_3 - CH_2 - COOH$

   4) $CH_3 - CH_2 - CH_3Br$

6. 1) Which principle is used to measure the specific heat capacity of a substance?

   2) What does it state?

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7. Answer the following based on the diagram given below.
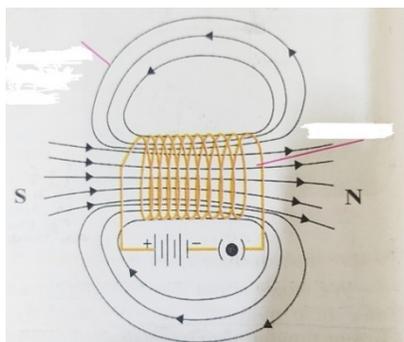
   1) Identify the figure

   2) Define the above figure

   3) How are the magnetic lines of force inside the figure arranged?

Q-IV. Attempt any one of the following questions   (5)

   A. Answer the following questions:-

   1) Why does ionic compounds exist in solid state?

   2) How can ionic compounds be broken into pieces?

   3) Why are the ionic compounds water soluble?

   4) The ionic compounds cannot conduct electricity when in solid state? Why.

   5) Why the aqueous solutions of ionic compounds conduct electricity?

<div align="center">OR</div>

B-1) Complete the following table   (3)

Sr. No.	Common name	Structural formula	IUPAC name
1	Ethylene	$CH_2 = CH_2$	
2		CH_3COH	Ethanoic acid
3	Methyl Alcohol		Methanol

   2) Draw ray diagram to obtain image formed by convex lens when the object is placed between 2F and F_1, state the image position and nature of image   (2)