MS-CIT
World-class Comprehensive Computer Course

Question Paper
Set- III
Std. – 10th EM/Semi
Subject – Science I

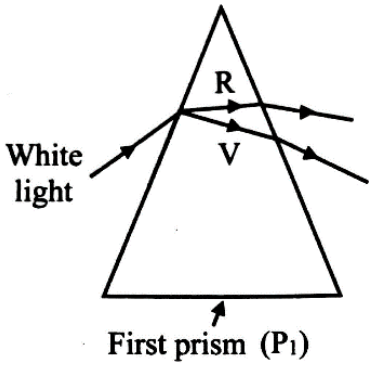
MKCL KLiC Courses
Gateway to Knowledge Lit Careers

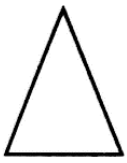
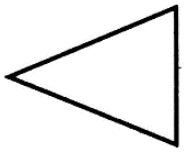
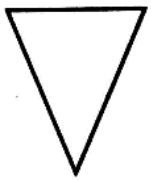
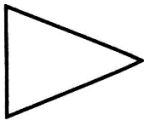
Time : 2 Hrs. **Marks : 40**

Instruction :
1. All questions must be attempted.
2. Wherever necessary scientifically correct diagrams and correct labeling should be drawn.
3. Start every main question on a new page.
4. Numbers to the right indicate marks.
5. For question No. 1(A) MCQ marks will be given only for the first attempt.
6. For each MCQ correct answer must be written along with its alphabet.

Q.1 (A) Choose the correct alternative from the given options: **[5]**

1. The catalyst used in the preparation of Vanaspati ghee from vegetable oil is_____.
   a) H_2 b) MnO_2 c) Ni d) O_2
2. While launching a satellite in its orbit, the_____ velocity is given to the satellite in tangential direction.
   a) critical b) escape c) highest d) lowest
3. If 220 V potential difference is applied across an electric bulb, a current of 0.5 A flows in the bulb. What must be the power of the bulb?
   a) 99 W b) 110 W c) 150 W d) 220 W
4. How will you place the second prism with respect to the first prism shown below to obtain white emergent light?



a)  b)  c)  d) 

5. According to Newton's first law, mass is the measure of_____ of an object.
   a) heaviness b) inertia c) gravity d) weight

Q.1 (B) Answer the following. **[5]**

1. **Find Out Correlation:**
   Alkali metals: Group one :: _____: Group two.

2. **Match the pairs:**

Group A		Group B	
i)	Water at 0 °C	a.	Minimum volume
ii)	Water at 4 °C	b.	Minimum mass
		c.	Maximum volume
		d.	Maximum mass

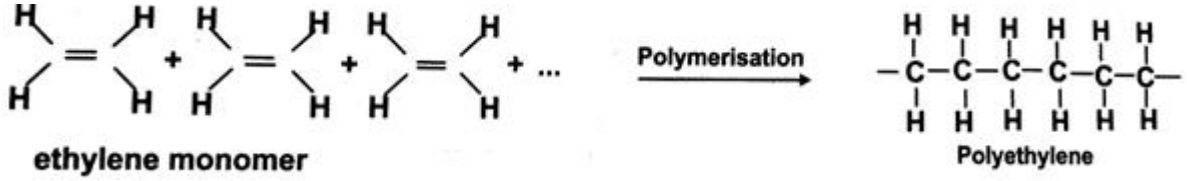
3. **Name the following:**
   Observatory constructed by scientists to detect the gravitational waves emitted by astronomical sources.
4. **Find the odd one out:**
   INSAT: Weather predicting satellite :: IRNSS: _____
5. **State true or false:**
   Fuses should be connected to the neutral wire.

Q.2 (A) Give scientific reasons: (Any two) **[4]**

1. The luster of the surface of the aluminium utensils in the house is lost after a few days.
2. In practice the unit kWh is used for the measurement of electrical energy, rather than joule.
3. Burns caused from steam are more serious than those caused from boiling water at same temperature.

Q.2 (B) Answer the following. (Any 3) **[6]**

1. Study the following chemical equation and answer the questions asked.



ethylene monomer — Polyethylene

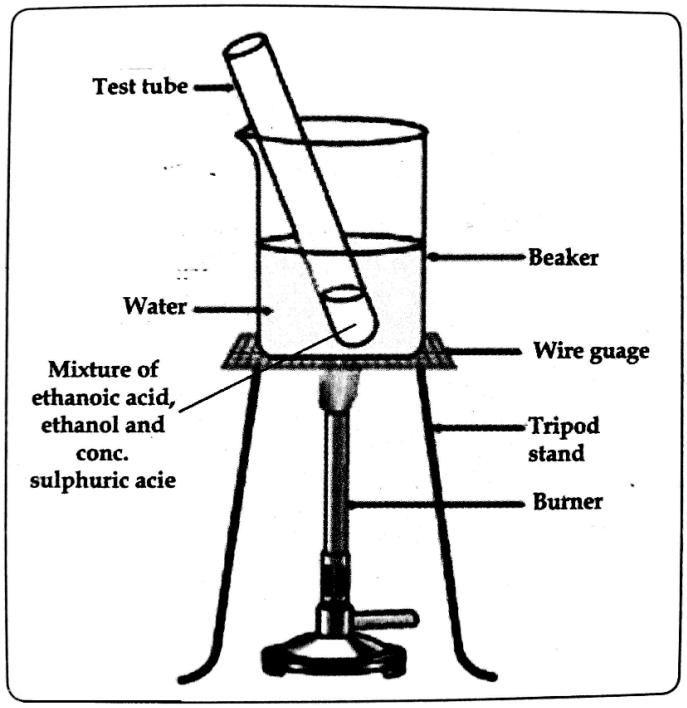
   (a) What is this reaction? Explain.
   (b) What is the use of the product obtained?
2. Complete the following chart.

Ionic compounds		Covalent compounds (carbon compounds)	
1)	They have high melting points and boiling points.	1)	They have low melting points and boiling points.
2)	_____	2)	Generally they do not conduct electricity.
3)	They have strong inter molecular forces.	3)	_____
4)	_____	4)	They have covalent bonds.
5)	The chemical bonds in them produce ions.	5)	_____

3. Distinguish between specific latent heat of fusion and specific latent heat of vaporization.
4. Three lenses having power 2, 2.5 and 1.7 D are kept touching in row. What is focal length of the lens combination?
5. State and explain laws of refraction of light.

Q.3 Answer the following questions. (Any 5) **[15]**

1. Study the given figure and answer the questions asked.



a) With a chemical equation, explain the chemical reaction.
b) What is this reaction known as?
c) Why is the test tube containing ethanol and ethanoic acid heated using a hot water bath?

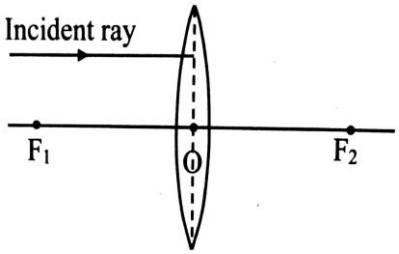
2. Explain the factors affecting the value of g.
3. Identify the figure and write a short note on it.

4. When a copper coin is dipped in silver nitrate solution, a glitter, appears on the coin after some time. Why does this happen? Write the chemical equation.
5. Select the appropriate options and complete the following paragraph.
(metals, nonmetals, metalloids, four, seven, s-block, p-block, d-block, f-block)
On the basis of electronic configuration, elements in the modern periodic table are classified into_____ blocks. Groups 1 and 2 elements are included in_____

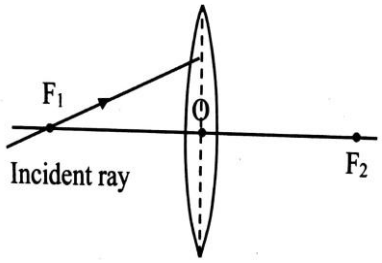
and all these elements are metals (except hydrogen). Groups 13 to 18 elements are included in_____. This block contains metals, nonmetals and metalloids. Groups 3 to 12 elements are included in_____ and all these elements are_____. Elements shown at the bottom of the periodic table i.e., lanthanides and actinides constitute _____and all these elements are metals.

6. How much time a satellite in an orbit at height 35780 km above earth's surface would take to complete one revolution around the earth, if the mass of the earth would have been four times its original mass?
7. What happens when copper reacts with concentrated nitric acid? Give balanced chemical equation.
8. Complete the diagrams and state how an incident ray would pass through the lens.

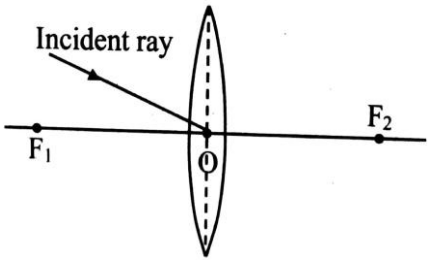
i)



ii)



iii)



Q.4 Answer the following questions. (Any 1) **[5]**

1. The atomic masses of three elements X, Y and Z having similar chemical properties are 7, 23 and 39 respectively.
   a) Calculate the average atomic mass of element X and Z.
   b) Compare the average atomic mass with atomic mass of Y.
   c) Which law of classification of elements is illustrated by this example?
   d) What could be the elements X, Y and Z be?
   e) Give another example of a set of elements which can be classified according to this law.
2. Explain partial reflection, critical angle and total internal reflection with the help of a neat labelled diagram.