MS-CIT
World-class Comprehensive Computer Course

Question Paper
Set- I
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 colour of the precipitate formed when potassium chromate reacts with barium sulphate is __.
   a) white b) yellow c) brown d) red
2. The orbit of a planet is an ellipse with the Sun at one of the_____.
   a) centres b) vertices c) foci d) tangents
3. Heating effect of electric current is not observed in_____.
   a) electric oven b) electric iron c) electric motor e) fuse
4. The velocity of light is _____in different media
   a) 3×10^8 m/s b) same c) different d) infinite
5. To obtain an image of the same size as that of an object using a convex lens, the object should be placed_____.
   a) at $2F_2$ b) Between F_2 and $2F_1$ c) at $2F_1$ d) at infinity

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

1. **State true or false:**
   The valency of noble gases is one.
2. **Find the odd one out:**
   Mass, weight, gravitational acceleration, gravitational force.
3. **Find Out Correlation:**
   Reflection: Velocity remains same :: Refraction: _____.
4. **Match the pairs:**

Group A		Group B	
i)	—Ⓐ—	a)	Plug key
ii)	—||—	b)	Alternating current
		c)	Battery

5. **Name the following:**
   The satellite in INSAT and GSAT satellite series used for education purpose.

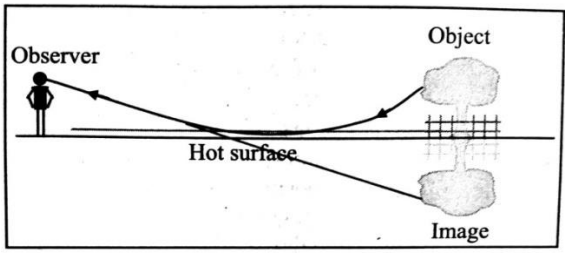
Q.2 (A) Give scientific reasons: (Attempt any 2) **[4]**

1. When the gas formed on heating limestone is passed through freshly prepared lime water, the lime water turns milky.
2. One can sense colours only in bright light.
3. Why is it beneficial to use satellite launch vehicles made of more than one stage?

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

1. The molecular formula of ethyne is C_2H_2. From this draw its structural formula and electron – dot structure.
2. How is denatured spirit prepared ?
3. How much heat energy is necessary to raise the temperature of 5 kg of water from 20°C to 100°C ?

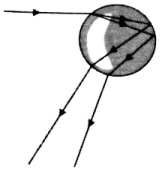
4. Write a note about the formation of phenomenon shown in the figure below.



5. What are the differences between high earth orbits and low earth orbits?

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

1. Define.
   i) specific latent heat of fusion ii) specific latent heat of vaporization iii) relative humidity.
2. Explain the types of reaction with reference to oxygen and hydrogen. Illustrate with examples.
3. Piyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over the burning sulphur.
   a) What will be the action of this gas on : (i) Dry litmus paper (ii) Moist litmus paper
   b) Write a balanced chemical equation for the reaction taking place.
4. 5 cm high object is placed at a distance of 25 cm from a converging lens of focal length 10 cm. Determine the position, size and type of the image.
5. Explain the reactivity series of metals.
6. Observe the given figure and answer the following questions.
   i) Identify and write the natural process shown in the figure.
   ii) List the phenomena which are observed in this process.
   iii) Redraw the diagram and show above phenomena in it.



7. i) Newton concluded that there is particular force acting on planet and is responsible for its circular motion. Identify the force and write.
   ii) A teacher while discussing gravitation introduced a quantity that depends only on mass and radius of the earth and is same for all objects at a given point on the earth. Which quantity the teacher is referring to?
   iii) Virat studied variation in acceleration due to gravity (g) with certain quantity. He observed g decreases as this quantity is increased and becomes zero as that quantity becomes infinite. Which quantity is studied by Virat?
8. Compounds A and B have different structural formulae but same molecular formula.
   1) What is this phenomenon known as?
   2) What are these compounds called as?
   3) What is the effect of this phenomenon in carbon compounds?

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

1. Answer the following questions based on the atomic radii of elements given below.

Elements	O	B	C	N	Be	Li
Atomic radius (pm)	66	88	77	74	111	152

   a) By referring to the modern periodic table, find out the periods to which above elements belong.
   b) Arrange the above elements in a decreasing order of the atomic radii.
   c) Does this arrangement match with the pattern of the second period of the modern periodic table?
   d) Which of the above elements have the biggest and the smallest atom?
   e) What is the periodic trend observed in the variation of atomic radii while going from left to right within a period?
2. A force is exerted on the current carrying conductor. The direction of this force depends on both the direction of the current and the direction of the magnetic field. This force is maximum when the direction of current is perpendicular to the direction of the magnetic field.
   i) By which law can we determine the direction of force exerted on the current carrying conductor?
   ii) In which electrical equipment is this principle used?
   iii) Draw a labelled diagram representing working of this equipment.
   iv) Name any two devices which operate using this equipment.