MM : 40   MOCK TEST SERIES   Time : 1½

Mock Test –7 (Class-10) Paper-I

Physics & Chemistry : Complete Syllabus

Q 1 A Solve the following questions [5]

1. Name the material which is used for making the filaments of an electric bulb.
2. If a ray of light goes from a rarer medium to a denser medium, will it bend towards the normal or away from it ?
3. What is the value of specific heat capacity of water (write with its unit)
4. What is the IUPAC name of isobutane.
5. Write the use of thermite welding along with the reaction.

Q 1 B Choose the correct alternative [5]

1. The heat produced by passing an electric current through a fixed resistor is proportional to the square of:
   (a) magnitude of resistance of the resistor   (b) temperature of the resistor
   (c) magnitude of current   (d) time for which current is passed
2. S.I unit of Heat is?
   a. Newton   b. Joule   c. Watt   d. Erg
3. Which of the following is not a triad
   a. Li, Na, K   b. Cl, Br, I   c. Ne, Ar, Kr   d. Ca, Sr, Ba
4. Newland law of octaves is valid till
   a. Mg   b. Sc   c. Ca   d. Kr
5. Which of the following is an amphoteric oxide.
   a. MgO   b. CO_2 c. ZnO   d. SiO_2
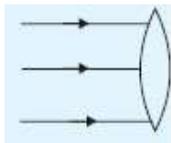
Q 2 A Give reason (any two) [4]

1. The escape velocity on the moon is less than that on the earth.
2. Atomic size increases down the group in a periodic table.
3. Ionic compounds are insulator in solid state but conductor in molten state or aqueous solution.

Q 2 B Solve the following questions (any three) [6]

1. A vertical ray of light strikes the horizontal surface of some water :
   (a) What is the angle of incidence ?
   (b) What is the angle of refraction ?

2. If the speed of light in a medium is 1.5 x 10^8 m/s, what is the absolute refractive index of the medium?
3. Heat energy is being produced in a resistance in a circuit at the rate of 100W The current of 3 A is flowing in the circuit. What must be the value of the resistance?
4. What type of lens is shown in the diagram given below? What will happen to the parallel rays of light ? Show by completing the ray diagram.
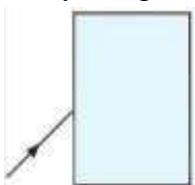

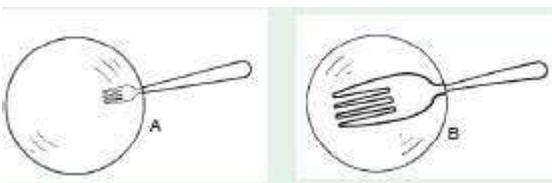5. What is the process of refining of metals. Explain the refining of copper with diagram.

Q 3   Solve the following questions (any five)   **[15]**
1. The diagram given alongside shows a ray of light entering a rectangular block of glass.
   (a) Copy the diagram and draw the normal at the point of entry.   (1)

   (b) Draw the approximate path of the ray of light through the glass block and out of the other side. (2)

2. An electric iron of 1100 W is operated for 2 hrs daily. What will be the electrical consumption expenses for that in the month of April? (The electric company charges Rs 5 per unit of energy)

3. An object is placed at the following distances from a convex lens of focal length 15 cm :
   (*a*) 35 cm (*b*) 30 cm (*c*) 20 cm (*d*) 10 cm
   Which position of the object will produce :
   (i) a magnified real image ?
   (ii) a magnified virtual image ?
   (iii) an image of same size as the object ?
4. When a fork is seen through lenses *A* and *B* one by one, it appears as shown in the diagrams. What is the nature of
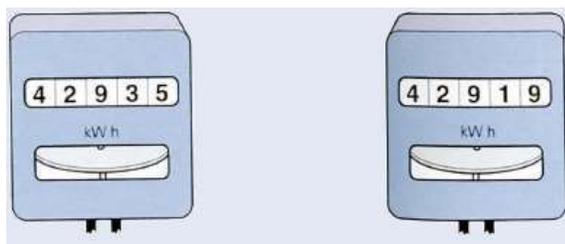   (*i*)   lens *A*, and   (*ii*) lens *B* ? Give reason for your answer.

5. Write the reaction of metals with water. Which metal reacts hot water to give hydroxide but also reacts with steam to form metal oxide. Write the name of a metal which will not react at all with water.
6. Write the characteristics of Mendeleev's periodic table.
7. Define homologous series. Write the next three homologue of ethanol.

Q 4   Solve the following question (any one)   **[5]**
1. A boy noted the readings on his home's electricity meter on Sunday at 8 AM and again on Monday at 8 AM(see Figures below).

(a) What was the meter reading on Sunday ?

(b) What was the meter reading on Monday ?

(c) How many units of electricity have been used ?

(d) In how much time these units have been used ?

(e) If the rate is Rs. 5 per unit, what is the cost of electricity used during this time ?

2. Complete the reaction:

a. $CH_3 - CH_2 - OH \xrightarrow{[O]}$

b. $CH_2 = CH_2 + H_2 \xrightarrow{[Pt]}$

c. $Na + CH_3 - CH_2 - OH \longrightarrow$

d. $CH_3 - COOH + CH_3 - CH_2 - OH \longrightarrow$

e. $CH_3 - CH_2 - COOH + NaOH \longrightarrow$