

Chapter: 1 to 5

Q1 Multiple choice Question

- i) Write the equation for zinc dust reacting with copper sulphate solution.
- a. $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{CuO}$ b. $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
c. both a and b d. None of the above
- ii) Which of the following has maximum specific heat capacity?
a. Iron b. Copper c. Mercury d. Lead
- iii) reverses the direction of current in the rectangular coil of the electric motor.
a. Battery b. Brushes c. Magnet d. Split rings
- iv) The formula for escape velocity is _____.
- a. $\sqrt{\frac{2M}{R}}$ b. $\sqrt{\frac{2GM}{R}}$ c. $\sqrt{\frac{GM}{R^2}}$ d. $\sqrt{\frac{GMm}{R^2}}$
- v) Mendeleev's periodic table was organized on the basis of following properties.
a. Only physical properties
b. Only chemical properties
c. Both physical and chemical properties
d. None of the above

B) Answer the following question

(5)

i) Find odd one out

Cal/g, cal/g°C, kcal/kg.°C, erg/g.°C

ii) Find co-related terms

Current: Ampere:: Power:

iii) Match the pair

Column "A"	Column "B"
i. Dobereiner's	a. French Scientist
ii. John New Lands	b. German Scientist
	c. Russian Scientist
	d. English Scientist

iv) State True or False

1 kg of dry air at a temperature of 40 °C can hold a maximum of 49 g of water vapor.

v) Name the following

The element used in electric bulb that emits light on been heated.

Q.2 Give scientific reason (Any 2)

(4)

A)

- i) Nowadays, MCBs are used in homes to stop the current in the circuit when it suddenly increases.
- ii) It takes time for pieces of Shahabad tile to disappear in HCl, but its powder disappears rapidly.
- iii) The outer surface of the beaker containing ice cubes becomes wet in a short while.

B) Answer the following questions (Any three)

i) Write Short Notes

Weightlessness in space.

ii) Solenoid and Bar magnet

iii) State two merits of modern periodic table.

vi) Find the amount of heat needed to raise the temperature of a silver container of mass 100g by 10°C. ($c = 0.056 \text{ cal/g}^\circ\text{C}$)

v) Give examples of Decomposition Reaction.

Q3 Answer the following questions. (Any Five)

(15)

i) An element has its electron configuration as 2,8,2. Now answer the following questions.

i. What is the atomic number of this element?

ii. What is the valency of this element?

iii. What is the group of this element?

iv. To which period does this element belong?

v. With which of the following elements would this element resemble? (Atomic numbers are given in the brackets)

N(7), Be(4), Ar(18), Cl(17)

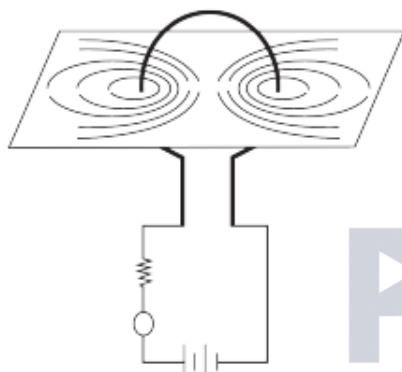
ii) Waves are created on the surface of water when we drop a stone into it. Similarly you must have seen the waves generated on a string when both its ends are held in hand and it is shaken. Light is also a type of wave called the electromagnetic wave. Gamma rays, X-rays, ultraviolet rays, infrared rays, microwave and radio waves are all different types of electromagnetic waves. Astronomical objects emit these waves and we receive them using our instruments. All our knowledge about the universe has been obtained through these waves. Gravitational waves are a very different type of waves. They have been called the waves on the fabric of space-time. Einstein predicted their existence in 1916. These waves

are very weak and it is very difficult to detect them. Scientists have constructed extremely sensitive instruments to detect the gravitational waves emitted by astronomical sources. Among these, LIGO (Laser Interferometric Gravitational Wave Observatory) is the prominent one. Exactly after hundred years of their prediction, scientists detected these waves coming from an astronomical source. Indian scientists have contributed significantly in this discovery. This discovery has opened a new path to obtain information about the Universe.

- i. Which type of wave a light ray is ? (1 marks)
- ii. What type of rays are Gravitational waves called ? (1 marks)
- iii. Why are the gravitational waves difficult to detect ? (1 marks)
- iv. Give any four examples of electromagnetic waves. (2 marks)

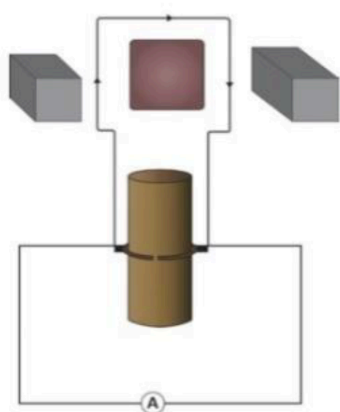
- iii) (A) What are the factors affecting the rate of chemical reaction?
(B) Explain any one factor affecting the rate of chemical reaction.

- iv) Complete the diagram and describe the pattern of magnetic lines of force due to current passing through a circular loop.



Prism
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- v) Observe the figure and answer the following questions.



- i. Identify the machine shown in figure.
- ii. Write a use of this machine.
- iii. How transformation of energy takes place in this machine.

- vi) From the elements of second period of the modern periodic table given below, answer the following questions:

Li	Be
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B	C	N	O	F	Ne
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- (a) Name the elements in which both the shells are completely filled with electrons.
- (b) Name the element which has same number of electrons in both the shells.
- (c) Which is the most electropositive element in this period?

vii) Explain on which factor the value of acceleration due to gravity 'g' depends.

viii) Read the statements given below. Identify and write the concept upon which the given statement is based.

- i. Fishes survive under cold freezing water
- ii. Ice melts due to heating but temperature does not rises.
- iii. Temperature of liquid rises but state does not change.
- iv. Ravi is feeling that the air is humid, what would be the relative humidity.
- v. Water is heated, it changes to steam but temperature remains constant.
- vi. Two bodies with different temperatures are kept in a heat resistant box. After some time they have same temperatures. Which principle is followed.

Q4 Answer the following question (Any one)

(5)

- i)**
 - i. What is the symbol and used for elements francium in Periodic Table.
 - ii. To which group and period does it belong.
 - iii. How many valence elections will it have.
 - iv. It is a metal on a non-metal.
 - v. Name another element of the same group.
- ii)** Write the three laws given by Kepler. How did they help Newton to arrive at the inverse square law of gravity?