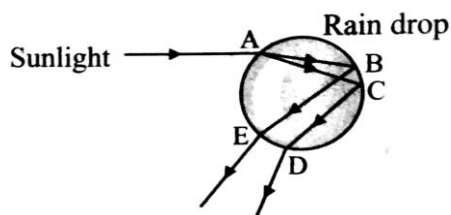


Q.1 A) Solve the following questions.

5

- 1) **Fill in the blanks** – _____ satellite in the INSAT and GSAT series is used specially in the field of education.
- 2) **Find out the correlation and write it in one sentence** – Al: Al₂O₃:: P: _____
- 3) At which of the point/ points indicated below total internal reflection has taken place?



4) Match the following

	Group A		Group B
i)	$2\text{Mg}_{(s)} + \text{O}_{2(g)} \xrightarrow{\Delta} 2\text{MgO}_{(s)}$	a)	Decomposition reaction
ii)	$\text{CaCO}_{3(s)} \xrightarrow{\Delta} \text{CaO}_{(s)} + \text{CO}_2 \uparrow$	b)	Displacement reaction
		c)	Combination reaction

5) Find odd one out & explain the answer in one sentence.

5

Mass, weight, gravitational acceleration, gravitational force.

B) Choose the correct alternative and rewrite the statement.

- 1) Which are the following compounds will burn with clean blue flame?
a) Benzene b) Naphthalene c) Butane d) Oleic acid
- 2) Magnetic field produced by a current carrying circular loop can be doubled by _____
a) Doubling the number of turn in the loop b) Changing shape of the loop to square.
c) halving the number of turns in the loop. d) using alternating current.
- 3) Aluminium oxide is ___ in nature.
a) acidic b) basic c) amphoteric d) neutral
- 4) To cool hot liquid quickly it should be _____.
a) placed inside the house in summer b) placed inside the house in the winter
c) placed in the open in the summer d) placed in the open in the winter
- 5) Which among the following is double displacement reaction?
a) $\text{Pb} + \text{CuCl}_2 \rightarrow \text{PbCl}_2 + \text{Cu}$ b) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
c) $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$ d) $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$

Q.2 Answer the following questions.(Any Five)

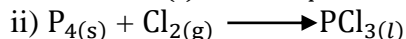
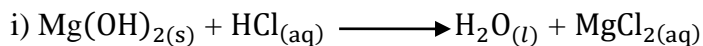
10

- 1) Write a note on ores.
- 2) A ball falls off a table and reaches the ground in 1 s. Assuming $g = 10 \text{ m/s}^2$, calculate its speed on the reaching the ground and the height of the table.

3)

Element	Electronic configuration	Valence electrons	Valency
Beryllium (Be)	(a).....	(c)	2
Oxygen (O)	(b)	6	(d)

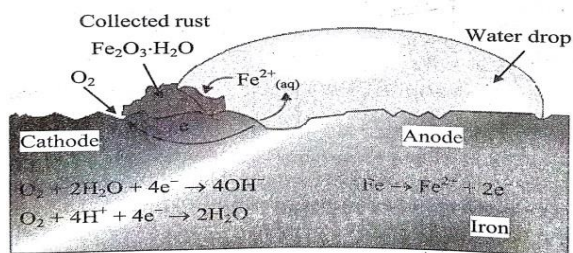
- 4) Write a note on Faraday's law of induction.
- 5) Give reasons– It is recommended to use air tight container for storing oil for long time.
- 6) Violet light is deviated most and red light is deviated the least on passing through the prism. Explain why?
- 7) Balance the following chemical equations:



Q.3 Answer the following questions. (Any Five)

15

- 1) Observe the following picture and write down the chemical reactions with explanation.

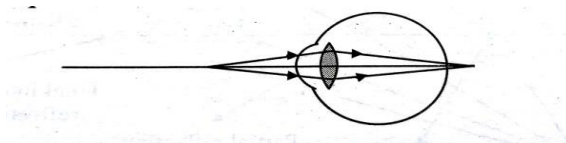


- 2) Prove that a rainbow is the combined effect of the refraction, dispersion, and total internal reflection.
- 3) Explain the term with example: Hetero atom in a carbon compound
- 4) Select the appropriate options and complete the following paragraph.
(Increase, zero, negative, decreases, constant, infinite, very low, very high, universal constant)
The energy stored in an object because of its position or state is called potential energy. This energy is relative and _____ as one goes to greater heights from the surface of the earth assuming value of potential energy on the ground as zero. When h is small compared to the radius R of the earth, we can assume g to be _____ and potential energy can be calculated using formula mgh . But for large values of h , the value of g _____ with increase in h . For an object at _____ distance from the earth, the value of g is zero and earth's gravitational force does not act on the object and value of potential energy is considered to be _____. Thus, for smaller distances, i.e. heights, the potential energy is _____.
- 5) Consider the elements of period 2 in the modern periodic table. Answer the following questions with explanation.
- Name the element in which both the shells are completely filled with electron.
 - Name the element which has same number of electrons in the first and second shell.
 - Which is the most electropositive element in this period?
- 6) Liquid ammonia is used in ice factory for making ice from water. If water at 20°C to be converted into 2 kg ice at 0°C , how many grams of ammonia are to be evaporated?
(Given: Latent heat of vaporization of ammonia = 341 cal/g)
- 7) What is an electric motor? Explain its construction and working with the help of labelled diagram.

Q.4 Answer the following questions.(Any One)

5

- 1) Observe the following diagram and answer the following questions.



- Name the defect shown in the diagram.
 - State one reason which causes the defect.
 - Where will the image be formed?
 - Which type of lens is used in the spectacle to remove the defect?
 - Is the focusing power of the lens positive or negative?
- 2) From reactivity series, we observe that zinc is more reactive metal than iron while iron is more reactive than silver. In an experiment, a student dips iron nails in zinc sulphate and silver nitrate solutions separately. Based on the above information.

Answer the following questions.

- What is reactivity series?
- What will happen when an iron nail is dipped in silver nitrate solution?
- Name the type of reaction that occurs when iron reacts with AgNO_3 solution.
- If a student adds zinc strip in ferrous sulphate solution, what colour change will he observe?
- Will silver react with ferrous sulphate solution or zinc sulphate solution?

