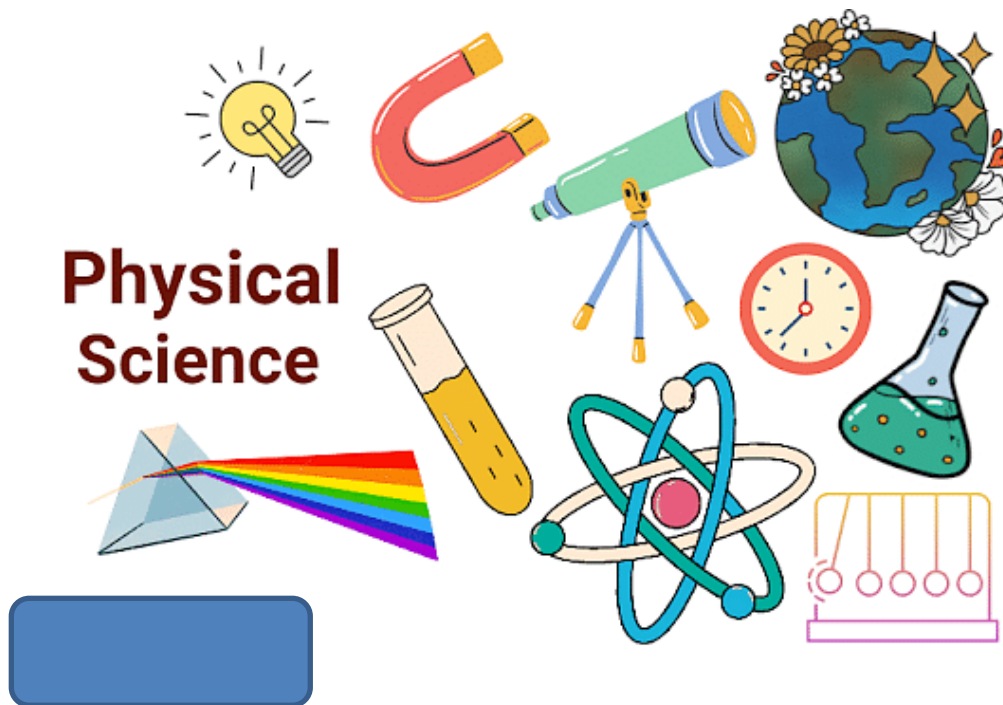


SSC ACTION PLAN

PHYSICAL SCIENCE

For Teacher Support Learners

2023 – 2024



IMPORTANT POINTS

- We have to identify the 'C'- Grade students (Teacher Support Learners) in X class.
- We have to deal them with patience, as they are already depressed due to various reasons, try to remove the fear factor of the subject/examination and try to build confidence among them.
- At this juncture, we have to find the way to overcome their slow understanding, and about their poor memory.
- By motivating them and with regular interaction with parents we have to make them to be regular to school.
- The questions paper is prepared based on academic standards
- There is no lesson wise weightage. Only academic standards weightage.
- All the lessons will be covered in the question paper

- **For C grade students we may focus on the academic standards in the following order of preference for maximum score**
 1. **Academic Standard – 6** (Weightage 6 Marks) Application in daily life / uses
 2. **Academic Standard – 2** (Weightage 2 Marks) Hypothesis
 3. **Academic Standard – 5** (Weightage 7 Marks) Diagrams
 4. **Academic Standard – 3** (Weightage 9 Marks) Lab Activities
 5. **Academic Standard – 4** (Weightage 4 Marks) Information skills
 6. **Academic Standard– 1** (Weightage 18 Marks) Conceptual Understanding

- Some of the suggestive material is provided in above order. Teachers may be used this as an indicative and can be utilized as needed along with their preparation plan or material in the preparation of C grade Students.
- Make the students to learn Suggestive Questions along with the simple answers for AS – 6. This learning can be used to answer AS – 2 Hypothesis Questions. Suggest the students how to modify the answers for AS – 2.

- Make the students to Practice the diagrams with suggestive Diagrams for AS – 5 Questions
- Make the students to put Heading for AS – 3 Questions

Aim

Material Required

Procedure

Observation

Result

Precautions

In the aim student may be guided to write question itself by slight modification

Make the students to observe and write the material required, precautions from suggestive experiments

Make simple points about 3 to 6 points for procedure / observation / Result to make convenient to students to learn and write easily.

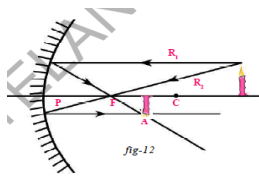
- For AS – 4 Questions, make the students to practice how to find the information from the given tables for given Questions by observing the words or sentences or phrases. Some of the suggestive Tables from Text Book are provided.
- For AS -1 Questions, Conceptual Understanding, Some of the differences are provided here. Make the students to understand the differences and it may be helpful in writing AS – 1 Questions.
- Teachers may discuss with their suggestive Concepts or Questions for Answering AS – 1 Questions.
- Suggestive means Teachers may add their suggestive information with the information provided here according to the requirement with respect to the Academic Standards.
- **Make the Students to go through the points given in WHAT WE HAVE LEARNT given at end of each chapter along with Text Book Multiple Choice Questions to Answer PART – B.**

SSC PHYSICAL SCIENCE		
ACADEMIC STANDARD - 6 (WEIGHTAGE 6 MARKS)	✓	Sign
<p>1 Mention the uses of Convex Mirror.</p> <p>A : Convex Mirrors are used as Rear View Mirrors in vehicles It forms always Erected diminished virtual image.</p>		
<p>2 Mention the uses of Concave Mirror.</p> <p>A : Concave mirros used as reflectors in Head Lights Concave Mirrors are used in Solar cookers and Torch lights Concave Mirrors are used by ENT Doctors</p>		
<p>3 Mention the uses of Lenses in Daily Life.</p> <p>A : Lenses are used to correct the Eye Diffects Bi concave Lens used to correct the Myopia Deffect Bi convex Lens used to correct the Hypermetropia Deffect</p>		
<p>4 State the Application of Balanced Chemical Equation.</p> <p>A : A balanced chemical equation explains about reactants, products and their physical states during the reaction.</p>		
<p>5 State the Applications of pH Value.</p> <p>A : Tooth pastes, which are generally basic , prevent tooth decay. Magnesium hydroxide (milk of magnesia), a mild base, is often used for digestion of food.Plants require a specific pH range for their healthy growth</p>		
<p>6 State the uses of bleaching powder.</p> <p>A: 1. Used for bleaching in Textile Industry 2. Used as an oxidizing agent in many chemical industries. 3. Used for disinfecting drinking water to make it free of germs. 4. Used as a reagent in the preparation of chloroform.</p>		
<p>7 State the Uses of Baking Soda</p> <p>A : Baking soda is sometimes added for faster cooking Baking powder used to make the cake and bread smooth and spongy. Baking soda used in antacids Baking soda acts as mild antiseptic Baking soda used in fire extinguishers</p>		
<p>8 State the Uses of Washing Soda</p> <p>A : Washing Soda used in Glass, Soap and Paper Industry Washing Soda used in the maufacture of borax powder Washing soda used as cleaning agent for domestic purpose. Washing soda removes permanent hardness of water</p>		
<p>9 State the Uses of Plaster of Paris</p> <p>A: Doctors used plaster of paris for supporting fractured bones Plaster of Paris used in making toys Plaster of paris used in making the wall surfaces smooth</p>		

SSC PHYSICAL SCIENCE		
ACADEMIC STANDARD - 6 (WEIGHTAGE 6 MARKS)	✓	Sign
<p>10 State the uses of Fuse in House hold Electric circuits.</p> <p>A : To prevent damages due to overloading we connect an electric fuse to the household circuit</p> <p>When the current in the fuse exceeds 20A, the wire will heat up and melt prevents the flow of current Electric devices are saved from damage.</p>		
<p>11 Write the Application of Electric motors</p> <p>A : In Electric motors Electric energy is converted into the Mechanical energy.</p>		
<p>12 Write the Application of Electric Generators</p> <p>A : In Electric Generators mechanical energy is converted into the electrical energy.</p>		
<p>13 Write the Applications of Faraday's law of Electromagnetic Induction.</p> <p>A: Electromagnetic Induction application used in the Function of ATM Cards</p> <p>This application used in Metal Detectors</p> <p>This application used in Induction Stoves</p>		
<p>14 Write the Uses of Thermite Reaction.</p> <p>A : The reaction of Iron oxide (Fe_2O_3), with aluminium produces molten iron which is used to join railings of railway tracks or cracked machine parts. This reaction is known as the thermite reaction.</p>		
<p>15 How Can we prevent the Corosion of Metals.</p> <p>A : Painting the surface of the metals with paint or some chemicals prevent the corosion.</p> <p>Covering the surface of the metals with Sn or Zn prevents the corosion of metals.</p>		
<p>16 Write the Application of Reverberatory furnance</p> <p>A : Calcination and Roasting are carried out in a reverberatory furnace</p>		
<p>17 State the uses of Graphite</p> <p>A: Graphite is used in pencils as Pencil lid</p> <p>Graphite is a good conductor of Electricity</p>		
<p>18 Write the uses of Fullerene, C60</p> <p>A : Fullerenes are under study for potential medicinal use - such as specific antibiotics to target resistant bacteria and even target certain cancer cells</p>		
<p>19 State the uses of Nanotubes</p> <p>A : Nanotubes can be used as molecular wires</p> <p>Nanotubes are used in integrated circuits.</p> <p>Nanotubes are used to inject biomolecules in to a single cell</p>		
<p>20 Write the uses of Ethanoic acid</p> <p>A : Ethanoic acid is commonly called as acetic acid. 5-8% solution of acetic acid in water is called vinegar and is used widely as a preservative in pickles.</p>		
<p>21 Write the uses of Ethanol</p> <p>A : Ethanol used in medicines such as tincture iodine, cough syrups</p> <p>A : and many tonics</p>		

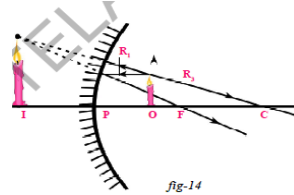
1 Draw the Ray diagrams for the concave mirror for following object positions

a) between F & C



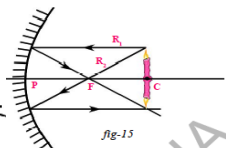
(Pg No. 10)

b) between P & F



(Pg No. 11)

c) On C



(Pg No. 12)

2 Draw the Ray diagrams for the image formation by Convex Mirror (Pg No. 13)

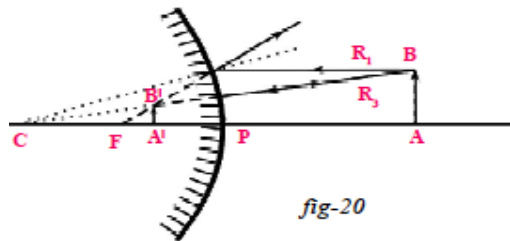


fig-20

3 Warning sign displayed on containers containing concentrated acids and bases (Pg No. 45)



fig-5: Warning sign displayed on containers containing concentrated Acids and Bases

4 Draw the diagrams of different types of Lenses (Pg No. 69)

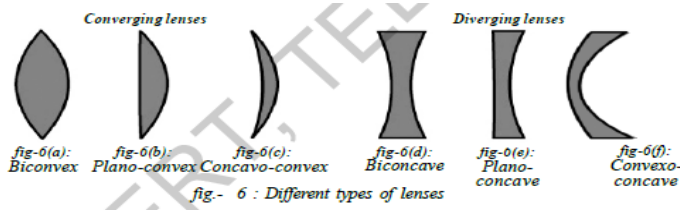


fig- 6 : Different types of lenses

5 Draw the Structure of Human Eye (Pg No. 89)

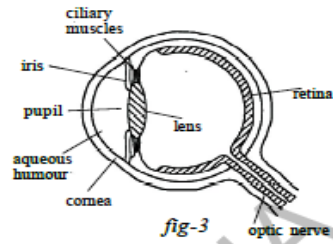
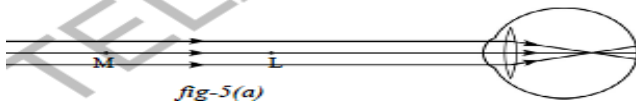


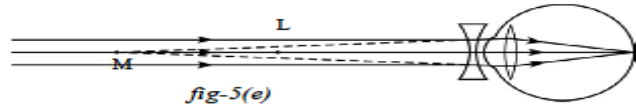
fig-3

6 Draw the diagram showing Myopia Defect and Myopia Correction (Pg 92 & 93)

Myopia Defect



Myopia Correction



7 Draw the diagram showing Hypermetropia Defect and Hypermetropia Correction (Pg No, 94)

Hypermetropia defect



Hypermetropia correction



8 Draw the Diagram of Electro Magnetic Wave (Pg No. 113)

.1.1 Characteristics of electromagnetic wave

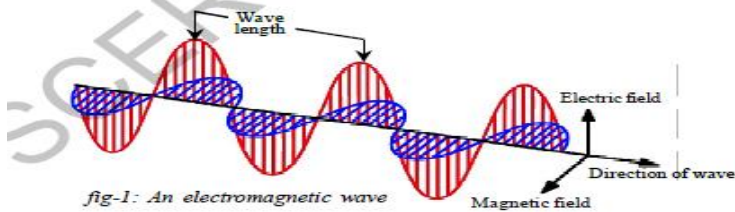


fig-1: An electromagnetic wave

9 The filling order of atomic orbitals (Moeller Chart) (Pg No. 124)

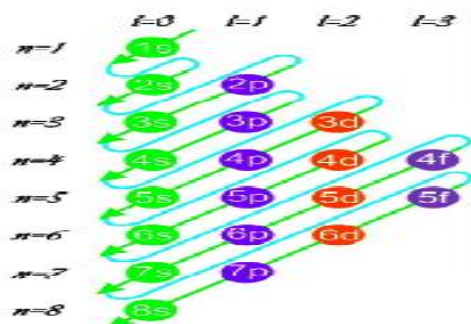
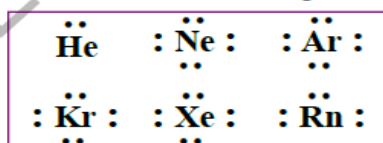


fig-6: The filling order of atomic orbitals (Moeller Chart)

10 Write the Lewis structure of Atoms of Noble Gases (Pg No. 160)

The Lewis dot structures of the atoms of noble gases are shown below:



11 Draw the Shapes of s, p, d orbitals (Pg No. 121)

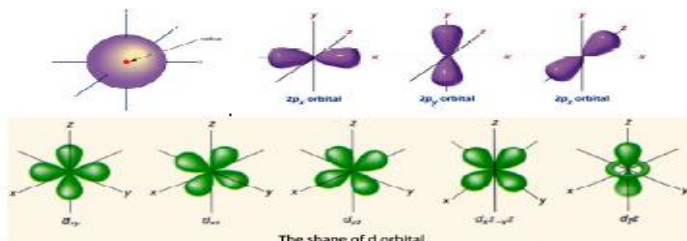
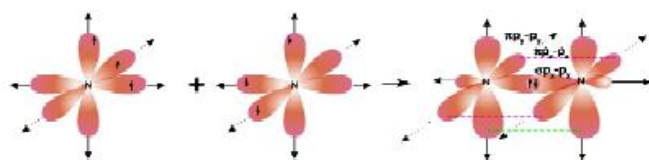
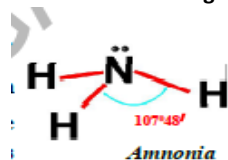


fig-5: Shapes of orbitals in s, p, d subshells

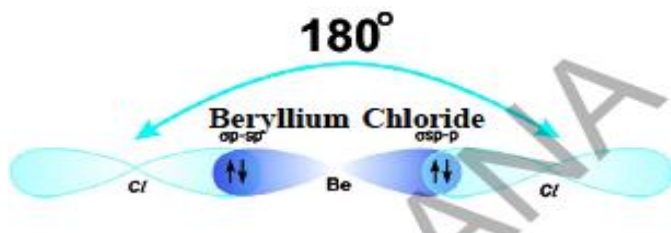
12 Draw the Diagram showing the formation of Nitrogen Molecule (Pg No. 177)



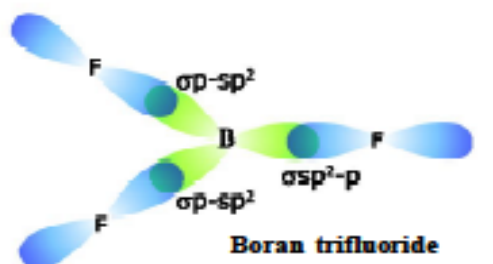
13 Draw the structure showing the formation of Ammonia (174)



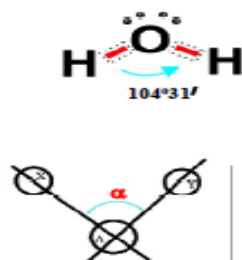
14 Draw the diagram showing sp hybridization in BeCl₂ Molecule (Pg No. 178)



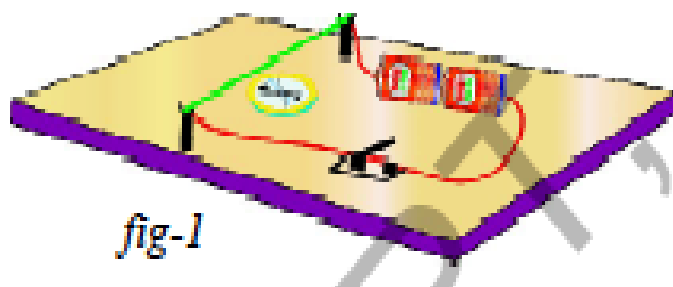
15 Draw the diagram showing Sp² Hybridization in BF₃ (Pg No. 179)



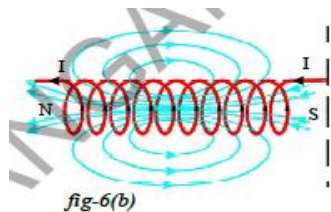
16 Draw the diagram showing the formation of Water Molecule (Pg No. 175)



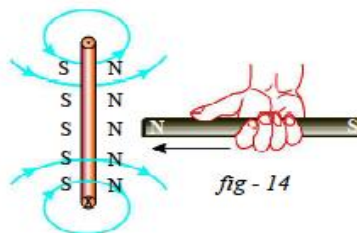
17 Draw the diagram showing the circuit of Oersted Experiment (Pg No. 220)



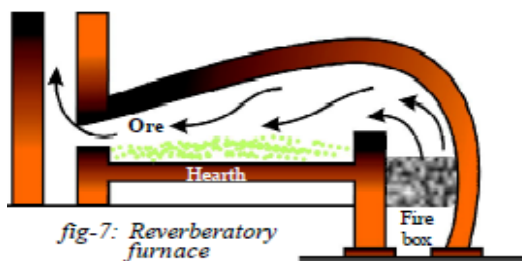
18 Draw the diagram howing Magnetic field due to solenoid (Pg No. 227)



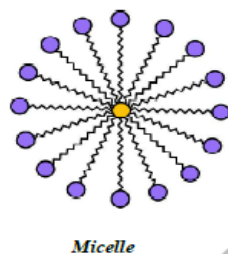
19 Draw the diagram showing the formation of poles according to Lenz law (Pg No. 236)



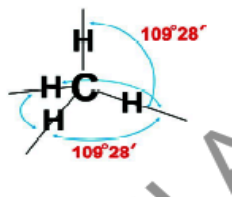
20 Draw the Diagram of the Reverberatory Furnance (Pg No. 262)



21 Draw the Diagram showing the formation of micelle (Pg No. 301)



22 Draw the structure of Methane (Pg No. 270)



ACADEMIC STANDARD – 3 LAB ACTIVITIES (WEIGHTAGE 9 MARKS)

1. **Aim:** Observing the types of images and measuring object distance and image distance from the mirror.

Material required: A candle, Paper, concave mirror (known focal length), V-stand, meter scale.

Procedure:

- i) Place the concave mirror on V-stand
- ii) Keep the candle on the principal axis at different places from the mirror.
- iii) Adjust the screen to get sharp image on it.
- iv) Measure the object distances (u) and image distances
- (v). Tabulate the values in the table. Observe the images are inverted or erect.

Object distance	Image distance	Enlarged/diminished	Inverted/erect

Precautions: i) take care that flame is above the axis ii) screen must be below the axis.

2. **Aim:** Reaction of acid with metal

Material required: Test tube, Delivery tube, glass trough, candle, soap water, stand, dil.HCl, and zinc granules, cork.

Procedure:

- i) take about 10ml of dil HCl in a test tube and few zinc granules.
- ii) Close it with one hole cork fix it to the stand.
- iii) Insert one end of the delivery tube into the test tube and the other end in soap water in trough.
- iv) reaction between HCl and Zinc produces colourless gas which passes through delivery tube and formed gas bubbles in soap water
- v) Put the lighted candle in front of the bubbles put off the flame by making pop sound indicating that hydrogen gas is produced.

Precautions: i) The first end of the delivery tube should not be immersed in the reactants. ii) Fix the cork tightly.

3. **Aim:** Reaction of acid with metal carbonate

Material required: Two test tube, Delivery tube, thistle funnel, stand, dil.HCl, Sodium carbonate (Na_2CO_3), limewater and cork.

Procedure:

- i) take about 0.5 gm. of sodium carbonate in a test tube. Close it with two hole cork and fix it to the stand.
- ii) Insert a thistle funnel through one hole. Insert one end of the delivery tube through the other hole and other end into the test tube contain lime water.
- iii) Pour 2ml of HCl through the thistle funnel.
- iv) Reaction between HCl and Na_2CO_3 produces gas which passes through the delivery tube into lime water. Lime water turn into milky white.

Result: Metal carbonate react with acids to give corresponding salt and produce CO_2 gas.

Precautions: i) Thistle funnel should be immersed into the acid ii) Delivery tube should not be immersed into acid.

4. **Aim:** Investigate that all compounds containing hydrogen are not acid.

Material required: Baker, two different coloured wires, bulb, switch, 230V AC power supply socket, graphite rods, HCl, glucose, alcohol and sulphuric acid.

Procedure:

- i) Connect two different coloured electrical wires to graphite rods separately in a 100ml beaker.
- ii) Connect free ends of wire to 230V AC plug and complete the circuit by connecting a bulb to one of the wire.
- iii) Now pour dil.HCl in the beaker and switch on the current.
- iv) Repeat activity with dilute sulphuric acid, glucose and alcohol solutions separately.

Result: Bulb glows only when current passed through HCl and H_2SO_4 due to presence of H^+ ions in it.

Precautions: Graphite rods should not touch each other. Electric switch must be in off position while changing the solution in the beaker.

5. **Aim:** Observing the types of images and measuring object distance and image distance using Convex Lens

Material required: A candle, Paper, convex lens (known focal length), V-stand, meter

Procedure:

- i) Place the convex lens on V-stand scale.
- ii) Place the lighted candle at a distance of 60cm from lens
- iii) Put the screen at other side of lens and adjust it to get sharp image of candle flame.
- iv) Measure the image distance from lens and record the values of u and v in table.
- v) Repeat this for various object distances like 50cm, 40cm, 30cm, etc., and measure the image distances in all the cases

Table:

Object distance	Image distance	Focal length

Precautions: i) take care that flame is above the axis ii) screen must be below the axis.

6. **Aim:** To show focal length of lens depends on respective medium.

Material required: convex lens (known focal length), Cylindrical vessel (depth nearly equal to four times of focal length of lens), black stone, lens holder, water.

Procedure:

- i) Take cylindrical vessel and keep a black stone inside the vessel at its bottom.
- ii) Pour water into the vessel such that the water level from the top of the stone is greater than focal length.
- iii) Dip the lens horizontally in water using lens holder.
- iv) Set the distance between stone and lens that is less than or equal to focal lens. Look at the stone through the lens. We can see the image clearly.
- v) Now increase the distance between stone and lens more than focal length of lens .We can see the image clearly. This show that focal length of lens has increased in water.

Result: Focal length of lens depends on respective medium.

7. **Aim:** To show that the ratio V/I is a constant for a conductor(Ohms Law)

Material required: 5 dry cells of 1.5V each, conducting wires, an ammeter, a volt meter, thin iron spoke of length 10cm, LED and key.

Procedure:

- i) Take an iron spoke and connect it with conducting wires at both ends.
- ii) These two wires connected to a cell of 1.5v through an ammeter and key.
- iii) Connect a volt meter across two ends of spoke.
- iv) Close the key and note the readings of current from ammeter, potential difference from volt meter in table.
- v) Now connect two cells in series in the circuit and note the readings of ammeter and voltmeter.
- vi) Repeat the experiment with 3,4 and 5 cells in series and record the values of current and potential difference and calculate V/I values in each case.

Potential difference(V) volt	Current(I) amp	V/I

Result: As the potential difference increases current also increases. V/I is constant.

Precautions: i) Take care while connecting wires to the source. ii) The readings of voltmeter and ammeter are to be taken without error.

8. **Aim:** Investigating the conditions under which iron rusts.

Material required: Three test tubes, a few polished nails, water, oil, anhydrous CaCl_2 , corks, boiling water.

Procedure:

- i) Take three test tubes and place clean iron nails in each of them. Label these test tubes a A,B and C.
- ii) In test tube A, pour some water and cork it. In test tube B, Pour some boiled distilled water and add about 1ml of oil and cork it. In test tube C, put some anhydrous CaCl_2 and cork it.
- iii) Leave these test tubes for a few days and then observe.

Observations: Iron nails get rust in test tube A. But not in test tube B and C. In test tube A, nails are exposed to both air and water.

Result: Rusting of iron occurs in the presence of water and air.

Precautions: i) use clean and new iron nails only ii) Use clean and dry test tubes.

9. **Aim:** To observe the magnetic effect of electric current passing through a wire. (Oersted experiment).

Material required: Copper wire, switch, battery, magnetic needle, thermocole sheet and wooden sticks of height 1cm.

Procedure:

- i) Take thermocole sheet and fix two thin wooden sticks of height 1cm which have small slit at the top of their ends.
- ii) Arrange a copper wire of 24 gauge so that it passes through these slits and make a circuit.
- iii) The circuit consists of 9V battery, key and copper wire which are connected series.
- iv) Keep a magnetic compass below the wire.
- v) Close the switch to pass the current through the circuit. We will notice a deflection of the compass needle. Now interchange the terminals of battery, the deflection will be seen in the other direction.

Result: When a current flow in the wire, magnetic field produced around it. And direction of magnetic field is depends on the direction of current.

10. **Aim:** Preparation of Ester(ethyl acetate)

Material required: Ethanol, glacial acetic acid, conc. H_2SO_4 , test tube, burner, glass rod, tripod stand, beaker, water bath.

Procedure:

- i) take 1ml of ethanol and 1ml of glacial acetic acid along with a few drops of concentrated sulphuric acid in a test tube.
- ii) Warm it in a water-bath for at least five minute.
- iii) Pour the warm contents into a beaker containing 20-50ml of water and observe the odour of the resulting mixture.
- iv) We will notice that the resulting mixture is a sweet odoured substance. This substance is ethyl acetate, an ester.

Precautions : i) Use clean and dry glass apparatus. ii) Don't take excess of acid.

11. **Write the material required to find refractive index of prism.**

Ans. Prism, piece of white chart, pencil, pins, scale and protractor.

INFORMATION SKILLS (AS – 4) Weightage 4 Marks

Characteristics of the image formed by concave mirror

ON SCREEN

Position of the candle (object)	Position of the image	Enlarged?/ diminished?	Inverted or erect	Real or virtual
Between mirror & F	Behind the mirror	Enlarged	Erect	Virtual
On focal point	At infinity	-	-	-
Between F and C	Beyond C	Enlarged	Inverted	Real
On centre of curvature	At C	Same size	Inverted	Real
Beyond C	Between F and C	Diminished	Inverted	Real
At infinity	At focus	point	-	Real

- Characteristics of the image formed due to convex lens

Sl No.	Position of the object	Position of the Image	Characteristics of the image
1.	At infinity	Focal Point (F_1)	Point Image
2.	Beyond C_2	Between F_1 & C_1	Inverted, Diminished & Real
3.	At C_2	On C_1	Inverted, Same size & Real
4.	Between F_2 & C_2	Beyond C_1	Inverted, Magnified & Real
5.	At F_2	Infinity	-
6.	Between F_2 & P	Beyond F_2	Erect, Magnified & Virtual

The following table-2 represents the shells, sub-shells and the number of orbitals in the sub-shells.

Table-2

n	l	m_l	sub-shell notation	No of orbitals in the subshell
1	0	0	1s	1
2	0	0	2s	1
	1	-1,0,+1	2p	3
3	0	0	3s	1
	1	-1,0,+1	3p	3
	2	-2,-1,0,+1,+2	3d	5
4	0	0	4s	1
	1	-1,0,+1	4p	3
	2	-2,-1,0,+1,+2	4d	5
	3	-3,-2,-1,0,+1,+2,+3	4f	7

Table-3

Table-4

Z	Elements	n	1	2	3	4	5	6									
		<i>l</i>	0	0	1	0	1	2	0	1	2	3	0	1	2	3	0
		Sub Shell	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f	5s	5p	5d	5f	6s
11	Na		2	2	6	<u>1</u>											
13	Al		2	2	6	2	<u>1</u>										
21	Sc		2	2	6	2	6	<u>1</u>	2								
58	Ce		2	2	6	2	6	10	2	6	10	<u>1</u>	2	6	1		2

7.5.2 Groups

8.9 Properties of ionic and covalent compounds

Table-4

S.No	Property	NaCl (ionic)	HCl (polar covalent)	C ₂ H ₆ (covalent)
1.	Formula mass	58.5	36.5	30.0
2.	Physical appearance	White crystalline solid	Colourless gas	Colourless gas
3.	Type of bond	Ionic	Polar covalent	Covalent
4.	Melting point	801 °C	-115 °C	-183 °C
5.	Boiling point	1413 °C	-84.9 °C	-88.63 °C
6.	Solubility	Soluble in polar solvents like water and insoluble in non-polar solvents	Soluble in polar solvents like water and to some extent in non-polar solvents	Soluble in non-polar solvents but insoluble in polar solvents like water
7.	Chemical activity	Highly reactive in polar solvents and reactions are instantaneous	Moderately reactive	Slow or very slow at room temperature

Table 3
Resistivity of various materials

Material	$\rho(\Omega\text{-m})$ at 20 °C
Silver	1.59×10^{-8}
Copper	1.68×10^{-8}
Gold	2.44×10^{-8}
Aluminium	2.82×10^{-8}
Calcium	3.36×10^{-8}
Tungsten	5.60×10^{-8}
Zinc	5.90×10^{-8}
Nickel	6.99×10^{-8}
Iron	1.00×10^{-7}
Lead	2.20×10^{-7}
Nichrome	1.10×10^{-6}
Carbon (Graphite)	2.50×10^{-6}
Germanium	4.60×10^{-1}
Drinking water	2.00×10^{-1}
Silicon	6.40×10^2
Wet wood	1.00×10^3
Glass	10.0×10^{10}
Rubber	1.00×10^{13}
Air	1.30×10^{16}

Table - 1

ORE	Formula	metal	ORE	Formula	metal
Bauxite	$\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$	Al	Zincite	ZnO	Zn
Copper Iron Pyrites	CuFeS_2	Cu	Rock salt	NaCl	Na
Zinc Blende	ZnS	Zn	Cinnabar	HgS	Hg
Magnesite	MgCO_3	Mg	Magnetite	Fe_3O_4	Fe
Epsom salt	$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	Mg	Galena	PbS	Pb
Horn Silver	AgCl	Ag	Gypsum	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$	Ca
Pyrolusite	MnO_2	Mn	Lime stone	CaCO_3	Ca
Haematite	Fe_2O_3	Fe	Carallite	$\text{KCl} / \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$	Mg

Differences (A.S I)

1. Write the differences between convex and concave mirrors?

S.No	Convex mirror	Concave mirror
1.	The reflecting surface is away from the C	The reflecting surface is towards the C
2.	The Focus lies behind the mirror.	The Focus lies in front of the mirror.
3.	Its known as diverging mirror.	Its known as converging mirror.
4.	Its magnification is +ve only.	Its magnification is +ve and -ve.
5.	It forms always Diminished, Erect and Virtual image.	It forms real, inverted image except when object placed between P and F.
6.	It is used as rear view mirror in cars and bikes.	It is used by Dentist to check the teeth, as shaving mirror and as solar cooker.

2. Write the differences between the Real image and virtual image?

S.NO	Real image	Virtual image
1.	It is an inverted image	It is an erected image
2.	It can be caught on the screen	It cannot be caught on the screen
3.	It can be formed by using concave mirrors but not with convex mirrors.	It can be formed by both concave and convex mirrors.
4.	It is formed by the reflected rays in ray diagram	It is formed by extending of reflected rays in ray diagram

3. Write the uses of the concave and convex mirrors?

S.No	Concave mirrors	Convex mirrors
1	Dentists use this mirror to check the teeth.	These mirrors are used as rear-view mirrors in vehicles
2	In the microscopes	At junctions of the roads,
3	As shaving mirror	In the shopping malls, at parking areas
4	In the preparation of solar cooker.	At curved roads.

4. Write the differences between Acids and Bases?

S.No	Acids	Bases
1	Sour in taste.	Bitter in taste.
2	Blue litmus turns to red	Red litmus turns to blue
3	Contains H^+ ions	Contains OH^- ions
4	pH values 0-6 (less than 7)	pH values 8-14 (greater than 7)
5	Examples HCl, H_2SO_4	Examples NaOH, KOH

5. Write the differences between Convex lens and Concave lens?

S.No	Convex lens	Concave lens
1	Thick in middle and thin at edges.	Thin in middle and thick at edges.
2	It is converging lens	It is diverging lens
3	It forms both Real and Virtual images.	It forms only Virtual images.
4	Focal length is +Ve.	Focal length is -Ve.
5	Used to correct Hypermetropia.	Used to correct Myopia.

6. Write the differences between Myopia and Hypermetropia?

S.No	Myopia	Hypermetropia
1	Also known as near-sightedness	Also known as Far-sightedness
2	Able to see near objects	Able to see far objects
3	Not able to see distant objects	Not able to see near objects
4	Image formed in front of retina	Image formed beyond retina
5	Can be corrected by Concave lens	Can be corrected by Convex lens

7. Write the differences between Orbit and Orbital?

S.No	Orbit	Orbital
1	Path of electron around nucleus	Probability of finding electron around nucleus.
2	Represented by K,L,M,N,O,....	Represented by s, p, d, f..
3	Information given by Principal Quantum Number 'n'	Information given by Angular Quantum Number 'l'
4	It is 2D	It is 3D

8. Write the differences between Ionic and Covalent compounds?

S.No	Ionic compounds	Covalent compounds
1	Generally Solid substances	Generally Gas substances
2	Have high Melting point (MP)	Have low Melting point (MP)
3	Have high Boiling point (BP)	Have low Boiling point (BP)
4	Soluble in water and insoluble in Non polar solvents	Insoluble in water and soluble in Non polar solvents
5	Highly reactive	Low reactive

9. Write the differences between Potential difference and Electro Motive Force?

S.No	Potential difference	Electro Motive Force (EMF)
1	Work done by Electric force	Work done by Chemical force
2	It exists, when circuit is closed	It exists, when circuit is opened
3	S.I units are Volts	S.I units are Volts
4	Measured with Volt meter	Measured with Volt meter

10. Write the differences between Ohmic and Non Ohmic conductors?

S.No	Ohmic conductors	Non Ohmic conductors
1	They Obey the ohm's law	They do not obey the ohm's law
2	V/I is constant	V/I is not constant
3	V-I graph is straight line from the origin	V-I graph is curve line from the origin
4	These are electric conductors	These are semi-conductors
5	Metals are examples	LEDs are examples

11. Write the differences between Electric motor and Generator?

S.No	Electric motor	Generator
1	Converts Electric energy to Mechanical energy	Converts Mechanical energy to Electrical energy
2	Follows Fleming's left-hand rule	Follows Fleming's right-hand rule
3	It uses electricity	It generates electricity
4	Used in Electric cars, fans, washing machines etc...	Used to generate electric current

12. Write the differences between Roasting and Calcination?

S.No	Roasting	Calcination
1	Ore is heated in presence of air or oxygen.	Ore is heated in absence of air or oxygen.
2	Mainly used for Sulphide ores.	Mainly used for Carbonate ores.
3	Oxygen is required.	Oxygen is not required.
4	It is an Oxidation reaction.	It is a decomposition reaction.

13. Write the differences between Diamond and Graphite?

S.No	Diamond	Graphite
1	Tetrahedral structure at carbon	Trigonal planar structure at carbon
2	SP ³ hybridisation	SP ² hybridisation
3	Bond angle at C is 109 ⁰ .28'	Bond angle at C is 120 ⁰
4	Hardest substance	Soft substance
5	Bad conductor of electricity	Good conductor of electricity

14. Write the differences between Saturated and unsaturated hydrocarbons?

S.No	Saturated hydro carbons	Unsaturated hydro carbons
1	Contains single bonds between Carbons	Contains at least one double or triple bond between Carbons
2	Alkanes	Alkenes and Alkynes
3	Under go substitution reactions	Under go Addition reactions
4	Least reactive	Highly reactive.