



CHEMISTRY SSC-I

Inclusive Scheme of Studies 2024 (1200) Marks

SECTION – A (Marks 12)

Time allowed: 20 Minutes

Candidate Sign. _____

Invigilator Sign. _____

Answer Sheet No. _____

Version No.				
1	9	0	5	1

0	0	●	0	0
●	1	1	1	●
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	●	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	●	9	9	9

ROLL NUMBER						

0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Deleting/overwriting is not allowed.

Do not use lead pencil.

Fill the relevant bubble against each question according to curriculum:

Question	A	B	C	D	A	B	C	D
1. Which part of the atom contains protons and neutrons?	Electron cloud	Shells	Nucleus	Orbits	☐	☐	☐	☐
2. Which type of compounds generally have low boiling points?	Ionic compounds	Network solids	Metallic compounds	Covalent compounds	☐	☐	☐	☐
3. Which compound is formed by Al^{3+} and O^{2-} ?	AlO	Al_2O	Al_2O_3	Al_3O_2	☐	☐	☐	☐
4. The net ionic equation for forming silver chloride is:	$Na^+ + Cl^- \rightarrow NaCl$	$AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$	$Ag^+_{(aq)} + Cl^-_{(aq)} \rightarrow AgCl_{(s)}$	$Ag_{(s)} + Cl_{(g)} \rightarrow AgCl_{(s)}$	☐	☐	☐	☐
5. Which symbol shows a reversible reaction?	$\rightarrow$	$\rightleftharpoons$	$=$	$\leftrightarrow$	☐	☐	☐	☐
6. Which reaction best shows a property of a base?	Base + metal $\rightarrow$ salt	Base + water $\rightarrow$ acid	Base $\rightarrow$ ions only	Base + acid $\rightarrow$ salt + water	☐	☐	☐	☐
7. The period number of an element depends on the number of:	Occupied shells	Electrons	Protons	Neutrons	☐	☐	☐	☐
8. Carbon monoxide and particulates are mainly produced by:	Complete combustion	Incomplete combustion	Plant respiration	Evaporation	☐	☐	☐	☐
9. Sulfur contributes to acid rain mainly by forming:	HNO_3	H_2CO_3	HCl	H_2SO_4	☐	☐	☐	☐
10. Which substance in natural water is useful for aquatic life?	Dissolved oxygen	Sewage	Dissolved Nitrates	Dissolved Plastics	☐	☐	☐	☐
11. Which compound is an alkane?	C_2H_4	C_4H_{10}	C_2H_2	C_3H_6	☐	☐	☐	☐
12. Substitution reactions commonly occur in:	Alkanes	Alkynes	Alkenes	Aldehydes	☐	☐	☐	☐

SUPPLEMENTARY TABLE

—ISA-I 26005-(M)—

Mass No	1	4	7	9	11	12	14	16	19	20	23	24	27	28	31	32	35.5	40	39	40
Symbol	H	He	Li	Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	K	Ca
Atomic No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



CHEMISTRY SSC-I

Inclusive Scheme of Studies 2024 (1200) Marks

26

Time allowed: 2:40 Hours

Total Marks Sections B and C: 48

SECTION – B (Marks 30)

(10 x 3 =30)

Q. 2 Attempt the following parts.

(i)	Identify the branch of chemistry that deals with statements: a. Temperature of the earth is increasing gradually due to increase in concentration of CO ₂ . b. Contact process is used to manufacture sulphuric acid on large scale. c. When a gas is cooled to -273°C it liquefies.	1+1 +1	OR	How is solubility affected by increasing temperature for given solutions: a. KCl in water (endothermic solution) b. $\text{Ca}(\text{OH})_2$ in water (exothermic solution)	1.5 + 1.5
(ii)	How do the paths of positive and negative charges differ in the same uniform electric field? Make a sketch.	1+1 +1	OR	What is meant by reversible chemical reaction? Does it ever go to completion? Give reason.	1+1 +1
(iii)	How is carbon-14 used to determine the age of ancient objects? Explain briefly.	03	OR	Calculate the number of molecules present in 2 moles of CO ₂ .	03
(iv)	What is activation energy? What is meant by a successful collision in a chemical reaction?	2+1	OR	State Bronsted-Lowry acid base concept. Give example of reaction between HCl and NH ₃ .	1+1 +1
(v)	$\text{CoCl}_2 \cdot 6\text{H}_2\text{O}(\text{pink solid}) \rightleftharpoons \text{CoCl}_2(\text{blue solid}) + 6\text{H}_2\text{O}$ How is above reaction affected by addition of water?	03	OR	Complete the given displacement reactions if possible: a. $\text{Cl}_2 + 2\text{KF} \rightarrow$ b. $\text{F}_2 + 2\text{KI} \rightarrow$ c. $\text{Cl}_2 + 2\text{KBr} \rightarrow$	1x3
(vi)	What is periodic table? On what basis are elements arranged in the modern periodic table?	2+1	OR	Name three nitrogen-containing fertilizers used in agriculture.	1+1 +1
(vii)	What is meant by the thermal stability of hydrogen halides? Arrange HF, HCl, HBr, and HI in order of increasing thermal stability.	2+1	OR	What is meant by healthy eating? How does it support body functions?	2+1
(viii)	Draw the structural formula of ethene (C ₂ H ₄) and ethanol (C ₂ H ₅ OH) showing the correct bonds.	1.5 + 1.5	OR	Name the three main biomolecules and state one food source of each.	1+1 +1
(ix)	Write any three characteristics of homologous series.	03	OR	Give two examples of carbohydrate-rich foods. Briefly explain the role of carbohydrates in human body.	1+2
(x)	Write chemical equations for the combustion of methane: a. In limited supply of oxygen b. In excess supply of oxygen	1.5 + 1.5	OR	Briefly describe the compressibility of solids, liquids and gases with reason.	1+1 +1

SECTION – C (Marks 18)

Note: Attempt the following questions.

(3x6=18)

Q.3	Compare diamond and graphite in terms of their structure and properties.	3+3	OR	Describe metallic bond in terms of electrostatic attraction. Write any two properties of metals which makes them different from the non-metals.	4+2
Q.4	Identify the oxidizing and reducing agents in given reactions by assigning their oxidation states (H=+1, O=-2) a. $\text{WO}_3 + 3\text{H}_2 \rightarrow \text{W} + 3\text{H}_2\text{O}$ b. $\text{H}_2\text{S} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{S}$	3+3	OR	Differentiate between strong acid and a weak acid. Write dissociation equations for HCl and CH ₃ COOH in aqueous solution to support your answer.	1+1 +2 +2
Q.5	a. What is meant by exothermic reaction and endothermic reactions? b. Calculate the enthalpy change (ΔH) for given reaction. $\text{H}_{2(g)} + \text{F}_{2(g)} \rightarrow 2\text{HF}_{(g)}$ Bond energy values for H-H, F-F and H-F bonds are 436 kJ/mol, 155 kJ/mol and 567 kJ/mol.	(1.5 + 1.5) +3	OR	Explain in detail how the following properties change down a group in the periodic table for Group-1A elements: a. Atomic radius b. Reactivity Give reasons for each trend.	3+3

SUPPLEMENTARY TABLE

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Mass No	1	4	7	9	11	12	14	16	19	20	23	24	27	28	31	32	35.5	40	39	40
Symbol	H	He	Li	Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	K	Ca
Atomic No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20