



Federal Board SSC-I Examination

Chemistry Model Question Paper

(Curriculum 2022-2023)

Section - A (Marks 12)

Time Allowed: 20 minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent.

Deleting/overwriting is not allowed.

Do not use lead pencil.

ROLL NUMBER					

Version No.			

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

Candidate Sign. _____

Invigilator Sign. _____

Q1. Fill the relevant bubble against each question according to curriculum. Each part carries one mark.

	Question					A	B	C	D
		A	B	C	D	A	B	C	D
(i)	Suggest the primary focus of organic chemistry?	The behavior of inorganic salts	The study of carbon-based molecules and their reactions	The study of metals and alloys	The properties of gases and their interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(ii)	Which of the following elements has the largest atomic size?	Fluorine	Oxygen	Chlorine	Bromine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(iii)	Identify the covalent compound.	MgO	CaO	H ₂ O	KF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(iv)	Suggest the correct reagents in the reduction of alkyl halides.	Al ₂ O ₃ at 35 ^o C	Conc. H ₂ SO ₄ at 170 ^o C	Zn + Dust	Zn + HCl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(v)	Identify which of the following element in the given reaction is oxidized H ₂ S+Cl ₂ →2HCl + S	H	Cl	S	S and Cl ₂	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(vi)	Why is the proton number unique to each element and used to arrange elements in the periodic table?	Protons determine the mass of the element	Protons define the atomic number of the element	Protons dictate the number of neutrons in the nucleus	Protons indicate the number of electrons in the atom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(vii)	Predict which one of the following pairs has the same mass?	1 mole of N ₂ O and 1 mole of CO ₂	1 mole of H ₂ and 1 mole NH ₃	1 mole of H ₂ O and 1 mole of H ₂ O ₂	1 mole of H ₂ SO ₄ and 1 mole of HNO ₃	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(viii)	Element X belongs to Group VII of the periodic table. Which of the following properties is most likely associated with Element X?	High reactivity with water.	Has electropositive character.	Exists as a diatomic gas at room temperature.	Forms covalent compounds with metals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(ix)	Identify the compound which is unsaturated.	CH ₃ CH ₂ OH	CH ₄	CH ₃ CH=CH ₂	CH ₃ CH ₂ NH ₂	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(x)	General formula of carboxylic acid is	RCHO	ROR	RCOOH	RCOR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(xi)	Which compound is most likely to damage marble buildings due to the reaction with acid rain?	CaSO ₄	Ca(NO ₃) ₂	CaCO ₃	CaC ₂ O ₄	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(xii)	Suggest which statement about solubility is INCORRECT ?	It refers to the ability of a solute to dissolve in a solvent	It is measured in grams per liter of solvent	It is affected by temperature, pressure, and the nature of the solute and solvent.	It is independent of temperature .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Federal Board SSC-I Examination

Model Question Paper Chemistry

(Curriculum 2022-23)

Time allowed: 2.40 hours

Total Marks: 53

Note: Answer all parts from Section 'B' and all questions from Section 'C' on the E-sheet.

Write your answers on the allotted /given spaces.

SECTION-B (Marks 33)

Q. 2	Attempt the following questions (11x3 = 33)				
(i)	Write equation(s) which represents the dissociation of H_2SO_4 in water.	1.5+ 1.5	OR	Draw structural formula of following molecules. a. Benzene b. Ethanol c. Propanone	1.+1 +1
(ii)	Predict reactions of Cl_2 with following halide ions. a. Br^{-1} b. I^{-1}	1+1+ 1	OR	Determine neutron and proton number of following elements. a. ${}_{13}^{27}X$ b. ${}_{18}^{36}Y$ c. ${}_{30}^{64}Z$	1.5+ 1.5
(iii)	Compare following properties of liquid Crystals with liquids. a. Molecular arrangement b. Fluidity	1.5+ 1.5	OR	Identify oxidizing agents in each of the following reactions. a. $2NH_3 + 3CuO \rightarrow 3Cu + N_2 + 3H_2O$ b. $2FeCl_2 + Cl_2 \rightarrow 2FeCl_3$	1.5+ 1.5
(iv)	How do NO and NO_2 contribute to the chemical reactions that lead to acid rain?	1.5+ 1.5	OR	How can exothermic reactions be distinguished from endothermic reactions. Explain by giving examples.	1.5+ 1.5
(v)	How do following water pollutants effect living organisms? 1. House hold wastes 2. Agricultural wastes 3. Metals	1+1+ 1	OR	How can sunlight be important in substitution reaction of methane with chlorine? Explain with reactions.	1+2
(vi)	Give three examples of transition metals where they act as catalysts.	1+1+ 1	OR	What are the primary nutrients provided by urea, ammonium salts, and nitrates when used as fertilizers?	1+1 +1
(vii)	Write general formulas of the following homologous series. Give one example in each case. a) Alkanes b) Alkenes c) Alcohols	1+1+ 1	OR	Identify the group and period number of the following unknown elements. a. ${}_{6}^{12}A$ b. ${}_{19}^{39}B$ c. ${}_{9}^{19}C$	1+1 +1
(viii)	Consider following equilibrium. $CoCl_2 \cdot 2H_2O(s) + Heat \rightleftharpoons CoCl_2(g) + H_2O(g)$ Predict the direction of reaction when following changes are applied on this system at equilibrium. a. Heating the system. b. Addition of water c. Removal of water	1+1+ 1	OR	Describe carbohydrates as more efficient source of energy than fats and proteins.	03
(ix)	Give the ways a closed system contribute to the establishment of equilibrium in reversible reactions?	03	OR	Define Bronsted-Lowry acids and bases with two examples each.	03
(x)	Calculate the number of atoms in each of the following samples. a. 3.4 moles of nitrogen gas b. 15 g of Sodium metal	2+1	OR	How does the energy profile diagram for an endothermic reaction differ from that of an exothermic reaction in terms of activation energy and enthalpy change?	1.5+ 1.5
(xi)	Define isotopes of an element. Write isotopes of hydrogen, give their atomic and mass numbers.	1+2	OR	Define following branches of chemistry. a. Astrochemistry b. Geochemistry c. Physical chemistry	1+1 +1

SECTION– C (Marks20)

Note: Attempt all questions. Marks of each question are given along with each question.

Q.3	Predict the trend of atomic size, ionization energy and electronegativity of group IIA of periodic table by using knowledge of chemical periodicity.	2+2+2	OR	Draw the dot-and- cross diagrams and Lewis dot structures for the following compounds. HCN, MgO, C ₂ H ₄	2+2+2
Q.4	Describe reactions of HCl with the following. A. Zn B. NaOH C. Na ₂ CO ₃	2x3	OR	How alkanes can be prepared from the following and also mention the type of reactions in each case. A. CH ₃ – C = CH ₂ B. CH ₃ -C≡C-CH ₃ C. CH ₃ CH ₂ CH ₂ Cl	2x3
Q.5	Write down the formula of following compounds. a. Ferric chloride b. Sodium sulphate c. Magnesium chloride d. Sulphur dioxide	4	OR	Define oxidation and reduction in terms of: a. oxygen and hydrogen b. gain and loss of electrons (change in oxidation state).	2+2
Q.6	Define solubility. How can it be affected by the change in temperature? Explain with graph.	1+1+2	OR	Identify sources of lipids and their recommended daily intake for young adults.	2+2