Version No.			

ROLL NUMBER						

Answer Sheet No._____

Sign. of Candidate _____

Sign. of Invigilator _____

CHEMISTRY SSC–I (3rd Set)

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.**

Q.1 Fill the relevant bubble for each part. Each part carries one mark.

(1) Predict the oxidation number of Chromium in $K_2Cr_2O_7$ is:

A. +2 ◯ B. +3 ◯

C. +5 ◯ D. +6 ◯

(2) Identify which one of the following is **NOT** amorphous solid:

A. Rubber ◯ B. Glass ◯

C. Table Sugar ◯ D. Plastic ◯

(3) Predict which one of the following halogen has the lowest electronegativity?

A. Iodine ◯ B. Bromine ◯

C. Chlorine ◯ D. Fluorine ◯

(4) Name the element which has electronic configuration $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$:

A. Calcium ◯ B. Magnesium ◯

C. Neon ◯ D. Argon ◯

(5) Elements of the same group have same valence shell electronic configuration. Predict which one of the following pair of elements has similar chemical properties:

A. K, Cr ◯ B. Cu, Ca ◯

C. F, Cl ◯ D. N, O ◯

(6) The amount of NaOH required to prepare 0.5 M solution is:

A. 20g ◯ B. 30g ◯

C. 40g ◯ D. 80g ◯

(7) Name the process by which metal lose electron:

A. Electroplating ◯ B. Electrolysis ◯

D. Electronegativity ◯ D. Electropositivity ◯

(8) Identify which one of the following is a formula unit:

A.	NaCl	◯	B.	H_2O	◯
C.	HCl	◯	D.	HNO_3	◯

(9) Predict the mass number of an atom depend upon:

A.	Only protons	◯
B.	Neutron and Electron	◯
C.	Electron and Proton	◯
D.	Proton and Neutron	◯

(10) Predict which is cause of shielding effect in elements:

A.	Neutrons	◯	B.	Protons	◯
C.	Inner Electrons	◯	D.	Reduction in effective nuclear change	◯

(11) Identify which one of the following is an example of milk:

A.	Solution	◯	B.	Colloid	◯
C.	Suspension	◯	D.	Compound	◯

(12) Identify the bond present in HCN.

A.	Polar-covalent bond	◯
B.	Ionic bond	◯
C.	Non-polar covalent bond	◯
D.	Metallic bond	◯

Federal Board SSC-I Examination
Chemistry Model Question Paper
(Curriculum 2006)

Time allowed: 2.40 hours Total Marks: 53

Note: Answer any eleven parts from Section 'B' and attempt any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 33)

Q.2 Attempt any **ELEVEN** parts from the following. All parts carry equal marks. $(11 \times 3 = 33)$

i. Differentiate between analytical and physical chemistry (at least two).
ii. Explain the method of preparation of 0.5M NaOH in $100cm^3$ solution from 1M NaOH.
iii. Draw the structure of isotopes of chlorine.
iv. Briefly explain octet and duplet rule with example.
v. Identify the characteristic of ionic compounds.
vi. Demonstrate diffusion and effusion of the gasses with the help of examples.
vii. Differentiate between saturated and unsaturated solutions (at least two).
viii. Describe the formation of solution by mixing solid into gases with example.
ix. State the common rules for assigning the oxidation number.
x. List three uses of electrolytic cells.
xi. Write down the oxidation and reduction reaction in voltaic cell at Anode and Cathode.
xii. Show how cations and anions are related to term metals and nonmetals.
xiii. Briefly describe why alkali metals are not found in free state in nature.
xiv. Tabulate soft and hard metals with suitable examples.
xv. List the commercial value of silver, gold and platinum.

SECTION – C (Marks 20)

Note: Attempt any **TWO** questions. All questions carry equal marks. $(2 \times 10 = 20)$

Q.3 a. Differentiate between oxidation and reduction in term of oxygen and hydrogen with equations. (2+2)
b. Identify the relationship between electronic configuration and the position of an element in the periodic table. $_{19}K^{39}$,$_{17}Cl^{35}$and $_{16}S^{32}$ (6)

Q.4 a. Define empirical and molecular formula. Show the formation of empirical formula from molecular formula of the given compounds: $C_6H_{12}O_6$, $C_8H_{16}O_2$ and $C_{12}H_{22}O_{11}$. (6)
b. Compare the physical state of matter with regards to intermolecular forces between them. (4)

Q.5 a. Use the rule that "like dissolves like" Describe dissolution of KCl in water with the help of diagram. (4+2)
b. How will you discuss the reactivity of halogens by using following reactions: (4)
i) $KI + Br_2 \longrightarrow 2KBr + I_2$
ii) $KBr + Cl_2 \longrightarrow 2KCl + Br_2$

* * * * *

CHEMISTRY SSC-I (3rd Set)
Student Learning Outcomes Alignment Chart

SECTION A

Q.1

1. Determine the oxidation number of an atom of any element in a compound.
2. Differentiate between amorphous and crystalline solids.
3. Describe how electronegativities change within a group and within a period in the periodic table.
4. Classify the elements (into two categories: groups and periods) according to the configuration of their outer most electrons.
5. Recognize the similarity in the chemical and physical properties of elements in the same family of elements.
6. Solve problems involving the Molarity of a solution.
7. Show how cations and anions are related to the terms metals and non-metals.
8. Classify the chemical species from given examples.
9. Define relative atomic mass based on C-12 scale.
10. Explain how shielding effect influences periodic trends.
11. Differentiate between solutions, suspension and colloids.
12. Describe the formation of a covalent bond between two non-metallic elements.

SECTION-B

Q.2

i. Differentiate between branches of chemistry.
ii. Describe how to prepare a solution from given molarity.
iii. Draw the structure of different isotopes from mass number and atomic number.
iv. State the octet and duplet rules.
v. Describe the characteristics of an ionic bond
vi. Explain the properties of gases (diffusion, effusion and pressure).
vii. Explain the difference between saturated, unsaturated and supersaturated solutions.
viii. Explain the formation of solutions (mixing solids into gases, solids into liquids, solids into solids) and give an example of each.
ix. State the common rules used for assigning oxidation numbers to free elements, ions (simple and complex), molecules, atoms.
x. List the possible uses of an electrolytic cell.
xi. Identify the half-cell in which oxidation occurs and the half-cell in which reduction occurs given a voltaic cell.
xii. Show how cations and anions are related to the terms metals and non-metals.
xiii. Explain why alkali metals are not found in the Free State in nature.
xiv. Differentiate between soft and hard metals (Iron and Sodium).
xv. Identify the commercial value of Silver, Gold and Platinum.

SECTION-C

Q.3 a. Define oxidation and reduction in terms of loss or gain of oxygen or hydrogen.
b. Identify the relationship between electron configuration and the position of an element on the periodic table.

Q.4 a Differentiate between empirical and molecular formula.
b. Compare the physical states of matter with regard to intermolecular forces present between them.

Q.6 a. Use the rule that “like dissolves like” to predict the solubility of one substance in another.
b. Compile some important reactions of halogens.

CHEMISTRY SSC-I (3rd Set)

TABLE OF SPECIFICATION

Topics/Subtopics	Fundamentals of chemistry 1	Structure of atoms 2	Periodic table 3	Structure of Molecules 4	Physical states of matter 5	Solutions 6	Electrochemistry 7	Chemical Reactivity 8	Total marks for each Assessment Objective	%age of cognitive level
(Knowledge based)		1(4)(1)			2vi(3) 2viii(3) 5a(6)		2ix(3) 2x(3)	1(7)(1) 2xiii(3) 2xiv(3)	26	29.9%
(Understanding based)	1(8)(1) 2i(3)	1(5)(1) 1(9)(1)	1(3)(1) 1(10)(1) 3b(6)	1(12)(1) 2iv(3) 2v(3) 4b(4)		1(2)(1) 1(11)(1) 2ii(3) 2vii(3)	1(1)(1) 2xi(3) 3a(4)	2xv(3)	44	50.6%
(Application based)	4a(6)	2iii(3)				1(6)(1)		2xii(3) 5b(4)	17	19.5%
Total marks for each Topic/ Subtopic	10	06	08	11	12	09	14	17	87	100%

KEY:

1(1)(1)

Question No. (Part No.) (Allocated Marks)

Note: (i) The policy of FBISE for knowledge based questions, understanding based questions and application based questions is approximately as follows:

a) 30% knowledge based.
b) 50% understanding based.
c) 20% application based.

(ii) The total marks specified for each unit/content in the table of specification is only related to this model question paper.

(iii) The level of difficulty of the paper is approximately as follows:

a) 40% easy
b) 40% moderate
c) 20% difficult