Rubric Chemistry-I Annual Exam 2023

Section B
Subject: Chemistry SSC-I (Local 2023)

Q No. Part No	Criteria	Level 1 (Marks)	Level 2 (Marks)	Level 3 (Marks)	Level 4 (Marks)	Level 5 (Marks)
2(i)	Briefly Explain and give one example of Free radical, Bio Chemistry and Atomic No.	Correct explanation of Free radical with example (1)	Partially correct response i.e. either correct explanation or example (0.5)	Wrong answer (0)		
		Correct explanation of Biochemistry with example (1)	Partially correct response i.e. either correct explanation or example (0.5)	Wrong answer (0)		
		Correct explanation of Atomic No. with example (1)	Partially correct response i.e. either correct explanation or example (0.5)	Wrong answer (0)		
2(ii)	Distinguish between empirical formula and molecular formula with examples	Correct differentiation between the two with examples (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)	
2(iii)	Identifying the properties of isotopes of carbon	Identifying any three correct properties (03)	Identifying any two correct properties and partially correct one property (2.5)	Identifying any two correct properties (02)	Identifying any one correct property and one partially correct property (1.5)	Identifying any one correct property (01)

2(iv)	Why atom is electrically neutral	Correct explanation (03)	Partially correct explanation (02)	Any relevant information (01)	Wrong answer (0)
2 (v)	How Bohr's atomic model differ from	Correct differentiation between the two (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)
	Rutherford's atomic model				
2(vi)	What is meant by electronegativity and explanation of trend along the period and down the group	Correct explanation of Electronegativity (01)	Partially correct explanation (0.5)	Wrong answer (0)	
		Correct explanation in group (01)	Partially correct (0.5)	Wrong answer (0)	
		Correct explanation in period (01)	Partially correct (0.5)	Wrong answer (0)	
2 (vii)	Location of an element $_{16}O^{8}$ be identified in periodic table	Writing correct location both group No and period No (3)	Writing partially correct location (any one parameter is correct) (1.5)	Wrong answer (0)	
2(viii)	Information of $_{35}Cl^{17}$ to form an ion	Writing/Drawing correct formation of anion in Cl (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)
2 (ix)	Interpret type of bonding in H_2O	Writing/Drawing correct interpretation of covalent bonding in H_2O (03)	Writing/Drawing partially correct interpretation of covalent bonding in H_2O (02)	Any relevant information (01)	Wrong answer (0)
2(x)	Describe any two: a. Diffusion b. Vapour pressure c.Evaporation	Writing correct explanation of any one (1.5)	Writing partially correct explanation of any one (1)	Any relevant information (0.5)	Wrong answer (0)
		Writing correct explanation of second term (any) (1.5)	Partially correct response (1)	Any relevant information (0.5)	Wrong answer (0)
2 (xi)	Calculate the volume required to produce $500cm^3$ of one molar H_2SO_4	Correct calculation of volume (03)	Partially correct Calculation of the volume (02)	Any relevant information (01)	Wrong answer (0)

2(xii)	Sketch Daniel cell and label	Correct sketch (1.5)	Partially correct sketch (01)	Any relevant information (0.5)	Wrong answer (0)
	cathode, anode and direction of flow of electron	All three correctly labelled (1.5)	Any two correct labelled (01)	Any one correct labeling (0.5)	Wrong answer (0)
2 (xiii)	Categorize WO_3 and H_2 as oxidizing agent and Reducing agent	Correctly categorize WO_3 as oxidizing agent (1.5)	Partially Correctly categorize WO_3 as oxidizing agent (01)	Wrong answer (0)	
		Correctly categorize H_2 as Reducing agent (1.5)	Partially Correctly categorize H_2 as Reducing agent (01)	Wrong answer (0)	
2(xiv)	Arrange according to the increasing acidic strength	Writing correct order of acidity (03)	writing Partially Correct order of acidity (02)	Any relevant information (01)	Wrong answer (0)
2 (xv)	Which element is more metallic Mg or Al	Correctly identifying and explaining the element with higher metallic character (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)

Section C

Q No. Part No	Criteria	Level 1 (Marks)	Level 2 (Marks)	Level 3 (Marks)	Level 4 (Marks)	Level 5 (Marks)
3(a)	Statement of Boyl's Law and derivation of expression	Correct statement of Boyl's Law (02)	Partially correct statement (01)	Any relevant information (0.5)	Wrong answer (0)	
		Correct derivation (03)	Partially Correct derivation (02)	Some correct steps (01)	Wrong answer (0)	
3(b)	Describe the formation of Na from fused NaCl	Correct description (02)	Partially correct description (01)	Any relevant information (0.5)	Wrong answer (0)	
		Two correct reactions (03)	Any one correct and the other one partially correct (02)	One correct reaction (1.5)	Any relevant information (1)	Wrong answer (0)
4(a)	Describing the formation of ionic bond in KCl and MgF_2 and drawing dot and cross model	Correctly drawing dot and cross model for the formation KCl (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)	
		Correctly drawing dot and cross model for the formation MgF_2 (03)	Partially correct response (02)	Any relevant information (01)	Wrong answer (0)	
4(b)	What is Concentration by discussing Molarity	Correct statement/description of concentration (02)	Partially correct statement/description of concentration (01)	Any relevant information (0.5)	Wrong answer (0)	
		Correct statement/description/Formula of Molarity (02)	Partially correct statement/description/Formula of Molarity (01)	Any relevant information (0.5)	Wrong answer (0)	

5 (a)	Explain why methanol is soluble in water and benzene is not soluble in water	Correct explanation of methanol being soluble in water (02)	Partially correct explanation (01)	Any relevant information (0.5)	Wrong answer (0)	
		Correct explanation of benzene being insoluble in water (02)	Partially correct explanation (01)	Any relevant information (0.5)	Wrong answer (0)	
5(b)	Describe single, double and triple covalent bonds with examples	Correct description/explanation of single covalent bond with example (02)	Partially correct response (01)	Any correct relevant information (0.5)	Wrong answer (0)	
		Correct description/explanation of double covalent bond with example (02)	Partially correct response (01)	Any correct relevant information (0.5)	Wrong answer (0)	
		Correct description/explanation of triple covalent bond with example (02)	Partially correct response (01)	Any correct relevant information (0.5)	Wrong answer (0)	