**Rubric Chemistry-I 2nd Annual Exam 2022**

**Section B**

**Subject: Chemistry SSC-I (Local 2022) Final: 23-09-2022 Time 5:05PM**

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| **Q No.** **Part No** | **Criteria** | **Level 1 (Marks)** | **Level 2 (Marks)** | **Level 3 (Marks)** | **Level 4 (Marks)** | **Level 5 (Marks)** |
| **2(i)** | State boyles law drive its mathematical expression  | Correct statement (2) | Partially correct (1) | Any relevant information (0.5) | Wrong (0) |  |
| Correct derivation (1) | Partially correct (0.5) | Wrong (0) |  |  |
| **2(ii)** | Write gram atomic masses(molar masses) | Correct molar masses of C,Na and Al (3) | Correct molar masses of any two (2) | Correct molar mass any one (1) | Wrong (0) |  |
| **2(iii)** | Write the electronic configuration of 12C6, 24Mg12, and 35Cl17, | Correct electronic configuration of three (3)  | Correct electronic configuration of two (2) | Correct electronic configuration of one (1) | Wrong answer (0) |  |

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| **2(iv)** | Determine molecular masses 1. NH3
2. (NH2)2CO
 | 1. Correct molecular mass calculation of NH3(1.5)

  | Partially correct calculations (1) | Wrong answer (0) |  |
| 1. Correct molecular mass calculation of (NH2)2CO (1.5)
 | Partially correct calculations (1) | Wrong answer (0) |  |
| **2 (v)** | Write the common names of group1. Group IA
2. Group IIA
3. Group VIIIA
 | Correct names of three Groups (03)  | Correct names of two Groups (02)  | Correct name of any one Group (01)  | Wrong (0) |
| **2(vi)** | Electronic determine group and period of following a.1s2, 2s2,2p6b.1s2, 2s2,2p6, 3s2c.1s2, 2s2,2p3 | Correct group and period of a.1s2, 2s2,2p6 (1) | Partially correct (0.5) | Wrong answer (0) |  |
| Correct group and period of b.1s2, 2s2,2p6, 3s2 (1) | Partially correct (0.5) | Wrong answer (0) |  |
|  |  | Correct group and period of c.1s2, 2s2,2p3 (1) | Partially correct (0.5) | Wrong answer (0) |  |
| **2 (vii)** | What is ionization energy discuss its trend along periodic table  | Correct definition and trend along periodic table (3) | Partially correct definition and trend along periodic table (2) | Partially correct definition and partially correct trend along periodic table (1) | Wrong  |
| **2(viii)** | Location of an element 16X32 be identified on periodic table by its electronic configuration | All three correct parameters i.e. electronic configuration, group and period(03) | Any two correct parameters (02) | Any one correct parameter (01) | Wrong answer(0) |
| **2 (ix)** | Commercial importance of Platinum | Any three correct points of commercial importance of Platinum (03) | Any two correct points(02) | Any one correct point(01) | Wrong answer(0) |
| **2(x)** | Explaining the composition of Aqua regia and how it is used to dissolve the noble metals | Correctly explaining the composition of Aqua regia (2.5) | Partially correct explanation of Aqua regia (1.5) | Wrong answer (0) |  |
| Writing correct reason of usage of Aqua regia in dissolving the noble metals (0.5) | Wrong (0) |  |  |
| **2 (xi)** | Showing formation of cations from given metals using electron dot cross structures | Correct formation of cation from Be (1.5) | Partially correct formation (1) | Any relevant information (0.5) | Wrong formation (0) |
| Correct formation of cation from Al (1.5) | Partially correct formation (1) | Any relevant information (0.5) | Wrong formation (0) |
| **2(xii)** | Definition of Allotropes and explanation of allotropes of phosphorous | Correct definition of allotropes(1) | Partially correct definition of allotropes(0.5) | Wrong answer(0) |  |
| Correct explanation of both red and white phosphorous(2) | Either correct explanation of red phosphorous OR white phosphorous(1) | Any relevant information (0.5) | Wrong answer(0) |
| **2 (xiii)** | Preparation of MgSO4 from the given data and describing its process of preparation  | Correct calculation (2) | Partially correct calculation (1) | Wrong answer(0) |  |
| Correctly describing the process of preparation (1) | Partially correct description (0.5) | Wrong answer(0) |  |
| **2(xiv)** | Stating octet and duplet rules with examples  | Correctly stating/defining both octet and duplet rules (02) | Correctly stating/defining any one rule (01) | Partially correct information (0.5) | Wrong answer (0) |
| One correct example of each of the two rules (1) | One correct example of any one rule (0.5) | Wrong example (0) |  |
| **2 (xv)** | Explanation of production of electrical energy from a dry cell with help of reactions at anode and cathode | Correct explanation (1) | Partially correct explanation (0.5) | Wrong answer (0) |  |
| Writing correct reaction occurring at anode (1) | Partially correct reaction (0.5) | Wrong answer (0) |  |
| Writing correct reaction occurring at cathode (1) | Partially correct reaction (0.5) | Wrong answer (0) |  |

**Section C**

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| **Q No.** **Part No** | **Criteria** | **Level 1 (Marks)** | **Level 2 (Marks)** | **Level 3 (Marks)** | **Level 4 (Marks)** | **Level 5 (Marks)** |
| **3(a)** | Statement of Charle’s Law and calculation of initial volume of Ammonia gas from given data | Correct statement (02) | Partially correct (01) | Wrong statement (0) |  | Wrong statement and calculations (0) |
| Correct calculations i.e. conversion into kelvin scale, applying correct formula and correct answer (3) | Calculations correctly showing any two aspects (2) | Calculations correctly showing any one aspect (1) | Wrong answer (0) |  |
| **3(b)** | Definition of Isotopes and its Importance and uses in daily life | Correct definition of isotopes (1) | Partially correct (0.5) | Wrong definition (0) |  |  |
| Any four correct uses/importance of isotopes in daily life(04) | Any three correct uses/importance of isotopes in daily life(03) | Any two correct uses/importance of isotopes in daily life(02) | Any one correct use/importance of isotopes in daily life(01) | Wrong (0) |
| **4(a)** | Explanation of electron affinity and electronegativity along with their trends in periodic table | Correct definition/explanation of electron affinity and its trend in groups and periods(03) | Partially correct i.e. showing any two aspects(02) | Showing any one correct aspect(01) | Wrong answer (0) |  |
| Correct definition/explanation of electronegativity and its trend in groups and periods(03) | Partially correct i.e. showing any two aspects(02) | Showing any one correct aspect(01) | Wrong answer (0) |  |
| **4(b)** | Formation of covalent bond and description of single, double and triple covalent bonds between two non-metallic atoms with the help of structures | Correct formation/definition of covalent bond (01) | Partially correct formation/definition (0.5) | Wrong answer (0) |  |  |
| Correct description of single covalent bond formation with the help of structure(01) | Partially correct (0.5) | Wrong answer (0) |  |  |
| Correct description of double covalent bond formation with the help of structure(01) | Partially correct (0.5) | Wrong answer (0) |  |  |
| Correct description of triple covalent bond formation with the help of structure(01) | Partially correct (0.5) | Wrong answer (0) |  |  |

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| **5 (a)** | Definition of Molarity and calculating molarity of the given solution  | Correct definition of Molarity (01) | Partially correct definition(0.5) | Wrong definition (0) |  |  |
| Applying any correct formula, correct calculations and correct answer along with correct unit (04) | Any three correct aspects (3) | Any two correct aspects (2) | Partially correct response (1) | Wrong answer (0) |
| **5(b)** | Explanation of electrolytic refining of copper and showing anode, cathode and flow of electrons in a sketched diagram | Correctly explaining electrolytic refining of copper (03) | Partially correct response (2) | Any correct relevant information (1) | Wrong answer (0) |  |
| Correctly showing anode, cathode and flow of electrons in a sketched diagram(02) | Partially correct response (01) | Wrong attempt (0) |  |  |