**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 group   1. 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, 2s2,2p6  b.1s2, 2s2,2p6, 3s2  c.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) |  |  |