**RUBRICS: HSSC 1st ANNUAL EXAMINATION 2022**

**SUBJECT: CHEMISTRY-II (HA) Final 01-07-2022 Time 12:39PM**

| **Q.# /Part #** | **Criteria**  | **Level 1 (Marks)** | **Level 2(Marks)** | **Level 3 (Marks)** | **Level 4 (Marks)** | **Level 5 (Marks)** |
| --- | --- | --- | --- | --- | --- | --- |
| $$2(i)$$ | Reason of Thermal stability of carbonates | Correct reasons with two examples (3) | Correct reason with one example (2) | Only correct reason (1) | Any relevant information (0.5) | Wrong (0) |
| $$2(ii)$$ | Regular and anomalous trends in ionization energies  | Correct regular trend and correct anomalous trend (3) | Correct one trend and partial correct 2nd trend (2) | Partially correct any one trend (1.5) | Any relevant information (1) | Wrong (0) |
| $$2(iii)$$ | Reactions of [Fe(H2O)6]3+ | Three correct reactions (3) | Two correct reactions (2) | One correct reaction (1) | Any relevant information (0.5) | Wrong(0) |
| $$2(iv)$$ | Reason for variable oxidations states | Correct complete reason (3) | Partially correct reason (2) | Any relevant information (1) | Wrong (0) |  |
| $$2(v)$$ | Description of Homologous series and Homologous series of 1st four amides | Correct description 0f Homologous series (2) | Partially correct description of Homologous series (1) | Any relevant information (0.5) | Wrong(0) |  |
| Homologous series of 1st four amides (1) | Any relevant information (0.5) | Wrong(0) |  |  |
| $$2(vi)$$ | Preparation 1-Butyne from a. Vicinal dihalide b. germinal dihalide  | Correct preparation from Vicinal dihalide (1.5) | Partially correct preparation from Vicinal dihalide (1) | Any relevant information (0.5) | Wrong(0) |  |
| Correct preparation from germinal dihalide (1.5) |  Partially correct preparation from germinal dihalide (1) | Any relevant information (0.5) | Wrong(0) |  |
| $$2(vii)$$ | Why the salts of Be+2 cannot accommodate more than four water molecules  | Correct complete description(3) | Partially correct description (2) | Any relevant information (1) | Wrong (0) |  |
| $$2(viii)$$ | Differentiation between Propyne & Propene  | Correct complete two chemical tests (3) | Correct complete one chemical test and partial correct 2nd (2) | Correct complete one chemical test (1) | Any relevant information (0.5) | Wrong (0) |
| $2(ix$) | Mechanism of E1 reaction with one evidence  | Complete correct Mechanism of E1 reaction (2) | Partially correct Mechanism of E1 reaction (1) | Any relevant information (0.5) | Wrong (0) |  |
| Correct one evidence (1) | Partially correct one evidence (0.5) | Wrong (0) |  |  |
| $2(x$) | Reaction of Grignard reagent with acetaldehyde and propanone | Complete correct reaction of Grignard reagent with acetaldehyde (1.5) | Partially correct reaction of Grignard reagent with acetaldehyde (1) | Any relevant information (0.5) | Wrong (0) |  |
| Complete correct reaction of Grignard reagent with propanone (1.5) | Partially correct reaction of Grignard reagent with propanone (1) | Any relevant information (0.5) | Wrong (0) |
| $$2(xi)$$ | Comparison of Basicity of Amines | Correct description of comparison of Basicity of Amines with reason(3) | Partially correct description of Basicity of Amines (2) | Any relevant information (1) | Wrong (0) |  |
| $$2(xii)$$ | Comparison of Acidity of Phenol and alcohol  | Correct comparison of Acidity of Phenol and Alcohol (3) | Partially correct comparison of Acidity of Phenol and Alcohol (2) | Any relevant information (1) | Wrong (0) |  |
| 2(xiii) | Lucas test to differentiate with alcohols | Correct differentiation of primary, secondary and tertiary alcohols (3) |  Partially correct response (2) | Any relevant information (1) | Wrong (0) |  |
| $$2(xiv)$$ | Reactions of Acetaldehyde  | Three correct reactions (3) | Two correct reactions (2) | One correct reaction (1) | Wrong (0) |  |
| $$2(xv)$$ | Reactions of Acetic anhydride  | Three correct reactions (3) | Two correct reactions (2) | One correct reaction (1) | Wrong (0) |  |
| 2(xvi) | Conversion of acetic acid | correct conversion in to C2H5OH (1.5) | Partially correct conversion in to C2H5OH (1) | Any relevant information (0.5) | Wrong (0) |  |
| correct conversion in to CH3COCH3 (1.5) | Partially correct conversion in to CH3COCH3 (1) | Any relevant information (0.5) | Wrong (0) |  |
| 2(xvii) | Differentiation between primary, secondary and tertiary proteins | Complete correct differentiation between primary, secondary and tertiary proteins with structures (3) | Partially correct differentiation between primary, secondary and tertiary proteins (2) | Any relevant information (1) | Wrong (0) |  |
| 2(xviii) | Raw material for hair dye | Three correct description of any raw materials (3) | Two correct description of any raw materials (2) | One correct description of any raw material (1) | Any relevant information (0.5) | Wrong (0) |
| 2(xix) | Differentiation between oxidizing and reducing smog | Complete correct differentiation between oxidizing and reducing smog (3) | Partially correct differentiation between oxidizing and reducing smog (2) | Any relevant information (1) | Wrong (0) |  |
| 2(xx) | Differentiation between UV and IR spectroscopies | Three correct differences (3) | Two correct differences (2) | One correct difference (1) | Wrong (0) |  |
| $$3(a)$$ | Reason of reaction of Group IV elements with water | Correct Response (1) | Partially Correct Response (0.5) | Wrong (0) |  |  |
| Reactions of tetra halides of group-IV with H2O along with mechanism  | Correct reaction of tetra halides of group-IV with H2O along with mechanism having two steps (4) | Correct mechanism with two steps (3) | Correct mechanism with one step and partially correct 2nd step (2) | Correct mechanism with one step (1) | Wrong (0) |
| Why CCl4 does not show hydrolysis | Correctly written reason (2) | Partially correctly written reason (1) | Any relevant information (0.5) | Wrong (0) |  |
| $3(b$) | Polymerization | Correct complete description (1) | Partially correct response(0.5) | Wrong (0) |  |  |
| Types of Polymerization | Two correct names (2) | One correct name (1) | Any relevant information (0.5) | Wrong (0) |  |
| Explanation of examples of two types of Polymerization ( addition polymerization and condensation polymerization  | Correct Explanation of two types of Polymerization with examples (3) | Correct explanation of one type of Polymerization and partially correct explanation of 2nd type (2) | Correct explanation with example of any one type (1) | Any relevant information (0.5) | Wrong (0) |
| $4$ (a) | Optical isomerism | Correct description of optical isomerism (1) | Partially Correct description of optical isomerism (0.5) | Wrong (0) |  |  |
| Condition for its existence  | Two correct conditions for its existence (3) | One correct condition for its existence (1.5) | Any relevant information (1) | Wrong (0) |  |
| Isomers of tartaric acid  | Two correct structures (3) | One correct structures (1.5) | Any relevant information (1) | Wrong (0) |  |
| 4 (b) | Aldol condensation  | Correct description aldol condensation (1) | Partially correct description of aldol condensation(0.5)  | Wrong (0) |  |  |
| Reaction for condensation between two molecules of Acetaldehyde and two molecules of Acetone | Two Correct reactions (2) | Partially correct response (1) | Any relevant information (0.5) | Wrong (0) |  |
| Reaction mechanism  | Correct reaction mechanism (3) | Partially Correct reaction mechanism (2) | Any relevant information (1) | Wrong (0) |  |
| 5 (a) | Mass spectroscopy | Correct description of mass spectroscopy (1) | Partially correct response (0.5) | Wrong (0) |  |  |
| Working of mass spectrometer  | Correct description of four parameters of mass spectrometer (4) | Correct description of three parameters of mass spectrometer (3) | Partially correct response (2) | Any relevant information (1) | Wrong (0) |
| Application  | Correct application (2) | Partially correct application (1) | Any relevant information (0.5) | Wrong (0) |  |
| 5 (b) | Greenhouse effect  | Correct description of greenhouse effect (1) | Partially correct description of greenhouse effect (0.5) | Wrong (0) |  |  |
| Global warming | Correct description of global warming (2) | Partially correct description of global warming (1) | Any relevant information (0.5) | Wrong (0) |  |
| Chlorofluoro carbons destroying Ozone layer | Correct description (3) | Partially correct response (2) | Any relevant information (1) | Wrong (0) |  |