



**ZIAUDDIN UNIVERSITY**  
EXAMINATION BOARD

# **Secondary School Certificate (SSC)**

## **Examination syllabus**

### **CHEMISTRY IX**

**Based on Provincial revised curriculum  
(Sindh)**

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## PREFACE

The Ziauddin University Examination Board (ZUEB) was established under **Sindh ACT XLI 2018**, with the primary objective of enhancing the quality of education in Sindh. ZUEB is responsible for administering examinations for the **Secondary School Certificate (SSC)** and **Higher Secondary School Certificate (HSSC)** in alignment with the most recent revisions to the **National Curriculum**, as outlined by the **Directorate of Curriculum Assessment and Research (DCAR), Sindh**. Through its ordinance, ZUEB is mandated to provide examination services for both English, Urdu, and Sindhi medium candidates from private schools across Sindh. This examination syllabus reflects ZUEB's dedication to achieving the educational goals set by the provincial authorities.

In collaboration with subject professors, ZUEB has developed a comprehensive syllabus for each subject. It is important to distinguish between the syllabus and the curriculum. The syllabus serves as a guide for both teachers and students, outlining the key areas of focus within the subject. It provides students with a clear understanding of what is expected of them in their studies and helps them prepare effectively for their exams.

This examination syllabus incorporates all cognitive outcomes derived from the **Provincial Curriculum Statement**, ensuring that assessments are both valid and reliable. While the focus is primarily on the cognitive domain, significant emphasis is placed on the application of knowledge and understanding.

The syllabus is made available to all stakeholders via the ZUEB website to assist affiliated schools in planning their teaching. It is crucial to note that the syllabus, rather than the prescribed textbook, forms the foundation of ZUEB examinations. Additionally, this syllabus supports the development of learning materials for both students and teachers. ZUEB remains committed to supporting students undertaking the SSC and HSSC courses by facilitating their learning outcomes through this detailed syllabus document.

To further assist in the learning process, ZUEB provides a dedicated **e-resource tab** on its website, offering both text-based and video content on various subjects. These 15-20 minute instructional videos, created around key subject concepts, allow students to learn at their own pace and convenience. The videos can be used as a reinforcement tool to revisit lessons already taught or as pre-lesson material. This initiative is an ongoing effort, and new videos will continue to be uploaded.

We encourage all students and educators to make the most of these resources for a more enriched and flexible learning experience.

Sincerely,

**Shahbaz Nasim**  
**Head – Measurement & Testing**  
**Ziauddin University Examination Board**

**Reviewed by Beena Kohati-Bilal**  
**Head - Curriculum & Assessment**  
**Ziauddin University Examination Board**  
**29.01.2025**

## Rationale For The Reviewed Provincial Curriculum

The process of revising the National Curriculum 2006 began in August 2004, when the newly elected government of Pakistan initiated education reforms across the country. These reforms included the introduction of a new National Education Policy, a National Education Census, and a revision of curricula (Ministry of Education, 2009).

In practice, the overhaul of the secondary school curriculum began in 2006, leading to a review of the scheme of studies for classes I to XII and the revision of curricula for 25 compulsory subjects.

The 18th Amendment to the Constitution of Pakistan, enacted in 2010, significantly altered the federal-provincial relationship by abolishing the "concurrent legislative list." This amendment granted provinces greater legislative and financial autonomy in sectors such as education and health. The most notable implication of the 18th Amendment for education was the transfer of responsibility for curriculum development, syllabus planning, policy formation, and educational standards to the provinces, marking a significant step forward for education.

In Sindh, the School Education Department tasked a Curriculum Review Team with revising the National Curriculum 2006 for all subjects. The goal was to create a curriculum better suited to the needs of students and teachers while aligning with the principles of the 18th Amendment. Subject-specific curriculum review committees were established to critically examine and align the curriculum's content, both contextually and textually, ensuring coherence across various subjects. The Bureau of Curriculum (BoC) played a crucial role in organizing workshops and meetings in Hyderabad to facilitate the completion of this task. The support of numerous educationists, researchers, and teachers was invaluable in successfully revising the curriculum.

The revised National Curriculum, along with the original version, is available on the DCAR website at [http://dcar.gos.pk/BoC\\_Other\\_Pages/curriculum\\_dev.html](http://dcar.gos.pk/BoC_Other_Pages/curriculum_dev.html) for easy access.

The Ziauddin University Examination Board (ZUEB) SSC and HSSC syllabi are developed in accordance with the Sindh Revised Curriculum. To date, textbooks for various subjects have been developed based on the revised curriculum.

## **AIMS AND OBJECTIVES:**

### **AIMS:**

This two-year study of Chemistry aims to develop in all students:

- a scientific understanding of the physical world.
- cognitive, affective, and psychomotor abilities appropriate to the acquisition and use of
- chemical knowledge, understanding, attitude, and skills.
- an appreciation for the products and influences of science and technology, balanced by a
- concern for their appropriate application.
- an understanding of the nature and limitations of scientific activity.
- an ability to apply the understanding of Chemistry to relevant problems (including those
- from everyday real-life) and to approach those problems in rational ways.
- respect for evidence, rationality and intellectual honesty.
- the capacities to express themselves coherently and logically, both orally and in writing,
- and to use appropriate modes of communication characteristic of scientific work.
- the ability to work effectively with others.
- 

### **OBJECTIVES:**

A statement of objectives relevant to each of the general aims is listed below. The sequence is in no particular order.

#### **Understanding the physical world:**

Students should understand the scientific concepts inherent in the theme for each chapter and be able to:

- State, exemplify, and interpret the concepts.
- Use appropriately, fundamental terms and classification related to the concepts.
- Cite, explain or interpret, scientific evidence in support of the concepts.
- Using appropriate cognitive, affective and psychomotor abilities:

#### **Students should show ability to:**

- formulate questions that can be investigated by gathering first or second-hand data.
- Find relevant published background information.
- Formulate hypotheses and make predictions from them.
- Plan an investigation and carry out the planned procedure.
- Use appropriate and relevant motor skills in carrying out investigations.
- Observe phenomena and describe, measure and record these as data.
- Classify, collate and display data.
- Curriculum for chemistry grades ix & x 2017 3
- Construct and/or interpret visual representations of phenomena and relationships (diagrams, Graphs, flowcharts, physical models).
- Analyze data and draw conclusions.
- Evaluate investigative procedures and the conclusions drawn from such investigations.
- Understanding the nature and limitations of scientific activity:
- For each facet of scientific activity selected for study, students should:
- Describe and exemplify it.
- Use appropriately any fundamental terms and classification related to it.

- Recognize that the problem-solving nature of science has limitations.
  - Acknowledge that people engaged in science, a particularly human enterprise, have the
  - Characteristics of people in general.
  - Appreciating influences of science and technology:
  - Recognize that the technology resulting from scientific activity influences the quality of life
  - And economic development through or by improvements in medical / health care, nutrition, And agricultural techniques.
- Explain that these influences may be the result of unforeseen consequences, rapid
- Exploitation, or rapid cultural changes.
  - Realize that advances in technology require judicious applications.
  - Respecting evidence, rationality and intellectual honesty:
  - Display respect for evidence, rationality and intellectual honesty given the number of
  - Emotive issues in the area of chemistry.
  - Showing capacities to communicate:
  - Comprehend the intention of a scientific communication, the relationship among its parts and its relationship to what they already know.
  - Select and use the relevant parts of a communication.
  - Translate information from communications in particular modes (spoken, written, tables, graphs, flowcharts, diagrams) to other modes.
  - Students should actively participate in group work and:
  - Share the responsibility for achieving the group task.
  - Show concern for the fullest possible involvement of each group member



**EXAMINATION SYLLABUS WITH SCHEME OF ASSESSMENT**

|  | CHEMISTRY IX  |                |   |   |                    |      |      |       |
|--|---|----------------|---|---|--------------------|------|------|-------|
|  | SLOs  | Categorization |   |   | Marks Distribution |      |      | Total |
|  | Students should be able to:   | K              | U | A | MCQs               | CRQs | ERQs |       |
| Unit -1<br><br>Fundamentals<br>Of<br>Chemistry<br><br><br><b>Weightage:<br/>12</b> | 1. Know the historical background of chemistry.                                     | *              |   |   | 1                  |      |      |       |
|  | Explain the contribution of Muslim scientists in the development of chemistry.      |                | * |   |                    |      |      |       |
|  | 1.1 .1 Define chemistry   | *              |   |   |                    | 1    |      |       |
|  | 1.1.2 Importance in daily life.   | *              |   |   |                    |      |      |       |
|  | 1.2 Identify and explain different branches of chemistry with the help of examples. | *              | * |   |                    | 2    |      |       |
|  | 1.21 Differentiate between main branches of chemistry.                              |                |   | * |                    |      |      |       |
|  | 1.3 Distinguish between matter and substance.                                       |                | * |   |                    |      |      |       |
|  | 1.3.1 Define Ions, molecular ions, formula units and free radicals.                 | *              |   |   |                    |      |      |       |
|  | 1.3.2 Define atomic number, atomic mass and atomic mass unit.                       | *              |   |   |                    |      |      |       |
|  | 1.3.3-5 Differentiate among element, compound and mixture.                          |                | * |   |                    |      |      |       |
|  | 1.3.11 Define relative atomic mass based on C-12.                                   | *              |   |   |                    |      |      |       |
|  | 1.3.12 Differentiate empirical and molecular formula.                               |                | * |   |                    |      |      |       |
|  | 1.4Classify the chemical species from the given examples.                           |                | * |   |                    |      |      |       |
|  |   | *              |   |   |                    |      |      |       |

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|  | <p>1.4.1 Distinguish between atoms and ions. Molecule and molecular ions. Ions and free radicals.</p> <p>1.4.2 Molecules &amp; Types of Molecules</p> <p>1.6.1 Relate gram atomic mass, gram molecular mass,</p> <p>1.6.2 What is mole, gram formula mass</p> <p>1.6.3 Describe how Avogadro's number is related to the mole of any substance.</p> <p>Identify the chemical equation in terms of moles.</p> <p>Calculation with balance equation using mole representative particles masses.</p> <p>Distinguish the terms gram atomic mass, gram molecular mass and gram formula mass</p> <p>Change atomic mass, molecular mass and formula into gram mass, gram molecular mass and gram formula mass.</p> |          | <p>*</p> <p>*</p>                            | <p>*</p> |  | 3 |  |  |
|  |  |          |  |          |  |   |  |  |
| <p>UNIT2<br/>ATOMIC<br/>STRUCTURE</p> <p>Weightage:<br/>14</p> | <p><b>Students will be able to:</b></p> <p><b>2.1 Describe the discovery of (atomic particle)</b></p> <p><b>2.1.1 Electron,</b></p> <p><b>2.1.2 Proton</b></p> <p><b>2.1.3 Neutron.</b></p> <p><b>2.1 Define Atomic Number (Z), Mass Number (A) in term of number of proton and/or neutron how they are related.</b></p> <p><b>2.2.1 Describe the contributions Rutherford made to the development of the atomic theory.</b></p> <p><b>2.2.2 Explain how Bohr's atomic model is different.</b></p> <p><b>2.3.1 Define Modern theories of Atomic Structure ( De Broglie</b></p>   | <p>*</p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> |          |  |   |  |  |



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|   | <p><b>Hypothesis &amp; Schrodinger atomic model)</b></p> <p><b>2.4 Describe the presence of sub shells in a shell.<br/>Distinguish between Shells and Sub shells.</b></p> <p><b>2. 4.1What is the Electronic Configuration of the first 18 Elements in the Periodic Table?</b></p> <p><b>2.5 Define and compare isotopes of an Atom.</b></p> <p><b>2.5.1 Discuss the examples of the isotopes of the H, C, Cl and U.</b></p> <p><b>2.5.1 Draw the structure of different isotopes from mass number and atomic number.</b></p> <p><b>2.5.1State the importance and uses of the isotopes in various fields of life.</b></p>   |  | *  |  |  |  |  |  |
|   |   |  | *  | *  |  |  |  |  |
|   |   |  | *  | *  |  |  |  |  |
|   |   | *  | *  | *  |  |  |  |  |
|   |   | *  | *  | *  |  |  |  |  |
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| <p><b>UNIT -3</b></p> <p><b>Periodic Table&amp; Periodicity Of Properties</b></p> <p><b>Weightage: 08</b></p> | <p>3.1.1 State the periodic law.</p> <p>3.1.1 Distinguish between a period and a group in the periodic table.</p> <p>3.1.2 What is Modern Periodic table?</p> <p>3. 1.3Determine the demarcation of the periodic table into an s-block, p-block, d-block</p> <p>3.1.3 Determine the location of families on the Periodic table<br/>What is the periodicity of properties?</p> <p>3.2.1 Recognize the atomic size &amp; atomic radius of different elements.</p> <p>3.2.2 Define Ionization Potential &amp; on which factor it depends?</p> <p>3.2.3 Define electron affinity</p> <p>3.2.4 Explain how the shielding effect influences periodic trends.</p> <p>3.2.5 Describe Electronegativity,</p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> |  |  |  |  |



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| <b>Unit 5</b><br><br><b>Physical States of Matter</b><br><br><b>Weightage: 12</b> | 5. Define Diffusion & Effusion   | * |   |   |  |  |  |
|   | 5.1 What are the characteristics Boltzmann Maxwell Kelvin observed on the Gaseous state                                  |   |   | * |  |  |  |
|   | 5.1 Why density of gases increase on cooling?  |   | * |   |  |  |  |
|   | 5.1 What is the unit of density in gases   | * |   |   |  |  |  |
|   | 5.2 Boyle's establishes a relation between pressure-volume changes in a gas at constant temperature Express the relation |   | * | * |  |  |  |
|   | 5.2.1 Calculate volume, temperature & pressure numerically   |   |   | * |  |  |  |
|   | 5.2.2 Compare the physical states of matter with reference to intermolecular forces present between them.                |   | * |   |  |  |  |
|   | 5.3.3 Account for temperature volume changes in a gas using Charles's Law.   |   | * |   |  |  |  |
|   | 5.3.4 Summarize the properties of liquids like evaporation, vapor pressure, Freezing and boiling point.                  |   | * | * |  |  |  |
|   | 5.4 Describe physical properties of solids   |   |   |   |  |  |  |
|   | 5.5 Differentiate between amorphous and crystalline solids.  | * |   |   |  |  |  |
|   | 5.6 Explain the allotropic forms of solids.  | * |   |   |  |  |  |
|   | 5.5.7 Define the plasma with help of examples.   | * |   |   |  |  |  |
|   | 5.8 Define Bose Einstein Condensate with help of example.  |   |   |   |  |  |  |
|   |  |   |   |   |  |  |  |
| <b>UNIT 6</b><br><b>Solution</b><br><br><b>Weightage:</b>                         | <b>6.1 Define the following terms: solution, aqueous solution, solute and solvent and give an example of each.</b>       | * | * |   |  |  |  |

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| 16     | <p><b>6.2 Explain the difference between saturated, unsaturated and supersaturated solutions.</b></p> <p><b>6.2.4 Prepare to dilute solution numerically</b></p> <p><b>6.3 Classify Types of Solutions</b></p> <p><b>6.4 Concentration Units</b></p> <p><b>6.4.1 Calculate Percentage by mass by Volume</b></p> <p><b>6.4. What is Molarity Calculate the Molarity of a Solution in the problem</b></p> <p><b>6.4 Describe how to prepare a solution of given Molarity.</b></p> <p><b>6.4.1 Convert between the Molarity of a solution and its concentration in g/dm<sup>3</sup>.</b></p> <p><b>6.5 Define solution &amp; factors effect on it.</b></p> <p><b>6.6 Define colloids and suspensions.</b></p> <p><b>6.6.1 Differentiate between solutions, suspension and colloid</b></p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> | <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p> |  |  |  |  |  |
| Unit 7 | <p><b>7.1 Define oxidation and reduction</b></p> <p><b>Explain oxidation and reduction in terms of loss or gain of electrons.</b></p> <p><b>7.2 Define Electrochemical cell &amp; its Application</b></p>  | <p>*</p> <p>*</p> <p>*</p>  | <p>*</p> <p>*</p> <p>*</p>  |  |  |  |  |  |

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| <b>ELECTRO<br/>CHEMISTRY</b><br><br><b>Weightage:<br/>12</b>              | <b>7.2.1 Define Concepts of Electrolyte &amp; Electrolysis with example</b>                                | * |   |  |  |  |  |  |
|   | <b>7.2.2 Sketch an electrolytic cell, label the cathode and the anode.</b>                                 | * |   |  |  |  |  |  |
|   | <b>7.2.3 Faraday's law of Electrolysis &amp; it's solve its numerical.</b>                                 | * |   |  |  |  |  |  |
|   | <b>List the possible uses of an electrolytic cell.</b>   | * | * |  |  |  |  |  |
|   | <b>Sketch a Daniell cell, labeling the cathode, the anode, and the direction of flow of the electrons.</b> | * |   |  |  |  |  |  |
|   | <b>Distinguish between electrolytic and Galvanic cells.</b>  |   | * |  |  |  |  |  |
|   | <b>7.3 Define corrosion.</b>   | * |   |  |  |  |  |  |
|   | <b>Describe rusting of iron as an example of corrosion.</b>  |   | * |  |  |  |  |  |
|   | <b>Summarize the methods used to prevent corrosion.</b>  |   | * |  |  |  |  |  |
|   | <b>7.4 Explain electroplating of metals on steel (using examples of zinc, Tin and chromium plating).</b>   |   |   |  |  |  |  |  |
|   | <b>Describe how a battery produces electrical energy</b>   |   |   |  |  |  |  |  |
|   |  |   |   |  |  |  |  |  |
| <b>UNIT 8<br/>CHEMICAL<br/>REACTIVITY</b><br><br><b>Weightage:<br/>12</b> | <b>Classifying the type of elements into metals, non-metals and metalloids.</b>                            |   | * |  |  |  |  |  |
|   | <b>Draw flow chart diagram of classification of metals, non-metals and metalloids.</b>                     | * |   |  |  |  |  |  |
|   | <b>Show how cations and anions are related to the terms metals and non-metals.</b>                         | * |   |  |  |  |  |  |
|   | <b>Identify elements as an alkali metal or an alkaline earth metal.</b>                                    | * |   |  |  |  |  |  |
|   | <b>Analyze why alkali metals are not</b>   |   |   |  |  |  |  |  |

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|  | <p><b>found in the free state in nature.</b></p> <p><b>Explain the differences in ionization energies of alkali and alkaline earth metals. .</b></p> <p><b>Describe the position of sodium in Periodic Table, its simple properties and uses. .</b></p> <p><b>Describe the position of calcium and magnesium in Periodic Table, their simple properties and uses.</b></p> <p><b>Differentiate between soft and hard metals (Iron and Sodium).</b></p> <p><b>Describe the inertness of noble metal.</b></p> <p><b>Identify the commercial value silver, Gold and Platinum.</b></p> <p><b>Compile some important reactions of halogens.</b></p> <p><b>Name some elements, which are found in uncombined state in nature</b></p> |   |   | * |  |  |  |  |
|  |   |   | * |   |  |  |  |  |
|  |   |   | * |   |  |  |  |  |
|  |   |   | * |   |  |  |  |  |
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|  |   | * |   |   |  |  |  |  |
|  |   |   |   |   |  |  |  |  |

**Total Marks: 60**

**MCQs :12**

**CRQs: 8/ 12 (24 Marks)**

**ERQs: 4/6 (24 Marks)**

## DEFINITIONS OF COGNITIVE LEVELS

### **Remember**

Remembering is the act of retrieving knowledge and can be used to produce things like definitions or lists. The student must be able to recall or recognise information and concepts. The teacher must present information about a subject to the student, ask questions that require the student to recall that information and provide written or verbal assessment that can be answered by remembering the information learnt.

#### **Question Stems**

- Can you name all the ...?
- Describe what happens when ...?
- How is (are) ...?
- How would you define ...?
- How would you identify ...?
- How would you outline ...?
- How would you recognise...?
- List the ... in order.
- What do you remember about ...?
- What does it mean?
- What happened after?
- What is (are) ...?
- What is the best one?
- What would you choose ...?
- When did ...?
- Where is (are) ...?
- Which one ...?
- Who spoke to ...?
- Who was ...?
- Why did ...?

### **Understand**

The next level in the taxonomic structure is Understanding, which is defined as the construction of meaning and relationships. Here the student must understand the main idea of material heard, viewed, or read and interpret or summarise the ideas in their own words. The teacher must ask questions that the student can answer in their own words by identifying the main idea.

#### **Question Stems**

- Can you clarify...?
- Can you illustrate ...?
- Condense this paragraph.
- Contrast ...
- Does everyone think in the way that ... does?
- Elaborate on ...
- Explain why ...
- Give an example
- How can you describe...?
- How would you clarify the meaning...?
- How would you compare ...?
- How would you differentiate between ...?
- How would you describe...?
- How would you generalise...?
- How would you identify ...?
- Is it valid that ...?
- Is this the same as ...?
- Outline ...
- Select the best definition...
- State in your own words...
- This represents ...
- What are they saying?
- What can you infer from ...?
- What can you say about ...?
- What could have happened next?
- What did you observe?

|   |   |
|---|---|
|   | <ul style="list-style-type: none"> <li>• What does this mean?</li> <li>• What expectations are there?</li> <li>• What information can you infer from...?</li> <li>• What is the main idea of ...?</li> <li>• What restrictions would you add?</li> <li>• What seems likely?</li> <li>• What seems to be ...?</li> <li>• What would happen if ...?</li> <li>• What might happen if ...?</li> <li>• Which are the facts?</li> <li>• Which statements support ...?</li> </ul>  |
| <p><b>Apply</b></p> <p>The third level in Bloom's taxonomy, Applying, marks a fundamental shift from the pre-Bloom's learning era because it involves remembering what has been learnt, having a good understanding of the knowledge, and applying it to real-world exercises, challenges or situations. Students must apply an abstract idea in a concrete case to solve a problem or relate it to prior experience. The teacher must provide opportunities for students to use theories and problem-solving techniques in new situations and review and check their work. Assessment questions should be provided that allow students to define and solve problems.</p> <p><b>Question Stems</b></p> <ul style="list-style-type: none"> <li>• Can you group by characteristics such as ...?</li> <li>• Choose the best statements that apply...</li> <li>• Clarify why ...</li> <li>• Do you know of another instance where ...?</li> <li>• Draw a story map...</li> <li>• Explain why a character acted in the way that he did...</li> <li>• From the information given, can you develop a set of instructions about ...?</li> <li>• How would you develop ...?</li> <li>• How would you change ...?</li> <li>• How would you demonstrate...?</li> </ul> | <p><b>Analyse</b></p> <p>Analysing is the cognitive level where students can take the knowledge they have remembered, understood and applied, then delve into that knowledge to make associations, discernments or comparisons. Students should break down a concept or idea into parts and show relationships between these parts. Teachers must give students time to examine concepts and their requisite elements. Students are required to explain why they chose a solution.</p> <p><b>Question Stems</b></p> <ul style="list-style-type: none"> <li>• Can you distinguish between ...?</li> <li>• Can you explain what must have happened when ...?</li> <li>• Determine the point of view, bias, values, or intent underlying the presented material...</li> <li>• Discuss the pros and cons of ...</li> <li>• How can you classify ... according to ...?</li> <li>• How can you compare the different parts?</li> <li>• How can you sort the different parts...?</li> <li>• How is ... connected to ...?</li> <li>• How is ... similar to ...?</li> <li>• How would you categorise...?</li> <li>• How would you explain...?</li> </ul> |



|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• How would you develop?</li> <li>• How would you explain ...?</li> <li>• How would you modify ...?</li> <li>• How would you present...?</li> <li>• How would you solve ... ?</li> <li>• Identify the results of ...</li> <li>• Illustrate the ...</li> <li>• Judge the effects of ... What would result ...?</li> <li>• Predict what would happen if ...</li> <li>• Tell how much change there would be if ...</li> <li>• Tell what would happen if ...</li> <li>• What actions would you take to perform ...?</li> <li>• What do you think could have happened next?</li> <li>• What examples can you find that ?</li> <li>• What other way would you choose to ...?</li> <li>• What questions would you ask of ...?</li> <li>• What was the main idea ...?</li> <li>• What would the result be if ...?</li> <li>• Which factors would you change if ...?</li> <li>• Who do you think...?</li> <li>• Why does this work?</li> <li>• Write a brief outline ...</li> <li>• Write in your own words ...</li> </ul> | <ul style="list-style-type: none"> <li>• What could the ending have been if ... had taken place?</li> <li>• State the point of view of ...</li> <li>• What are some of the problems of ...?</li> <li>• What assumptions ...?</li> <li>• What can you infer about...?</li> <li>• What can you point out about ?</li> <li>• What conclusions ...?</li> <li>• What do you see as other possible outcomes?</li> <li>• What does the author assume?</li> <li>• What explanation do you have for ...?</li> <li>• What ideas justify the conclusion?</li> <li>• What ideas validate...?</li> <li>• What is the analysis of ...?</li> <li>• What is the function of ...?</li> <li>• What is the problem with ...?</li> <li>• What motive is there?</li> <li>• What persuasive technique is used?</li> <li>• What statement is relevant?</li> <li>• What was the turning point?</li> <li>• What were some of the motives behind ...?</li> <li>• What's fact? Opinion?</li> <li>• What's the main idea?</li> <li>• What's the relationship between?</li> <li>• Which events could not have happened?</li> <li>• Why did ... changes occur?</li> <li>• Why do you think ?</li> </ul> |
|--|---|

## BLOOM'S TAXONOMY WITH EXAMPLES

### Conclusion

If you are a teacher looking for ways to engage your students in learning, this LIST of questions might be interesting for your classroom practice. Bloom's Taxonomy question stems can help elicit higher-order thinking skills and promote critical thinking among learners at different taxonomy levels. These question stems can also encourage students to think about their knowledge through reflection before answering questions.

### ACTION WORDS FOR COGNITIVE LEVELS

| Knowledge   | Understand  | Apply   | Analyze  | Evaluate  | Create  |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| define  | explain   | solve   | analyze  | reframe   | design  |
| identify  | describe  | apply   | appraise   | criticize   | compose   |
| describe  | interpret   | illustrate  | judge  | evaluate  | create  |
| label   | paraphrase  | modify  | support  | order   | plan  |
| list  | summarize   | use   | compare  | compare   | combine   |
| name  | classify  | calculate   | decide   | classify  | formulate   |
| state   | compare   | change  | discriminate   | contrast  | invent  |
| match   | differentiate   | choose  | recommend  | distinguish   | hypothesize   |
| recognize   | discuss   | demonstrate   | summarize  | infer   | substitute  |
| select  | distinguish   | discover  | assess   | separate  | write   |
| examine   | extend  | experiment  | choose   | explain   | compile   |
| locate  | predict   | relate  | convince   | select  | construct   |
| memorize  | associate   | show  | defend   | categorize  | develop   |
| quote   | contrast  | sketch  | estimate   | connect   | generalize  |
| recall  | convert   | complete  | grade  | differentiate   | integrate   |
| reproduce   | demonstrate   | construct   | measure  | divide  | modify  |
| tabulate  | estimate  | dramatize   | predict  | order   | organize  |
| tell  | express   | interpret   | rank   | prioritize  | prepare   |
| Copy  | identify  | manipulate  | score  | survey  | produce   |

|           |            |          |              |            |             |
|-----------|------------|----------|--------------|------------|-------------|
| discover  | indicate   | paint    | select       | calculate  | rearrange   |
| duplicate | infer      | prepare  | test         | conclude   | rewrite     |
| enumerate | relate     | teach    | argue        | correlate  | adapt       |
| listen    | restate    | act      | conclude     | deduce     | anticipate  |
| observe   | select     | collect  | consider     | devise     | arrange     |
| omit      | translate  | compute  | critique     | diagram    | assemble    |
| read      | ask        | explain  | debate       | dissect    | choose      |
| recite    | cite       | list     | distinguish  | estimate   | collaborate |
| record    | discover   | operate  | editorialize | evaluate   | facilitate  |
| repeat    | generalize | practice | justify      | experiment | imagine     |
| retell    | group      | simulate | persuade     | focus      | intervene   |
| visualize | illustrate | transfer | rate         | illustrate | make        |
|           | judge      | write    | weigh        | organize   | manage      |
|           | observe    |          |              | outline    | originate   |
|           | order      |          |              | plan       | propose     |
|           | report     |          |              | question   | simulate    |
|           | represent  |          |              | test       | solve       |
|           | research   |          |              |            | support     |
|           | review     |          |              |            | test        |
|           | rewrite    |          |              |            | validate    |
|           | show       |          |              |            |             |

**SSC PART I EXAMINATION**  
**MARKS BREAKUP GRID FOR EXAMINATION 2025**

**SCIENCE GROUP:**

| SUBJECT                     | THEORY     | PBA       | TOTAL      |
|-----------------------------|------------|-----------|------------|
| ENGLISH                     | 100        | -         | 100        |
| URDU NORMAL / SINDHI NORMAL | 75         | -         | 75         |
| ISLAMIYAT/ETHICS            | 75         | -         | 75         |
| PHYSICS                     | 60         | 15        | 75         |
| CHEMISTRY                   | 60         | 15        | 75         |
| BIOLOGY                     | 60         | 15        | 75         |
| MATHEMATICS                 | 75         | -         | 75         |
| <b>TOTAL</b>                | <b>505</b> | <b>45</b> | <b>550</b> |

**COMPUTER SCIENCE GROUP:**

| SUBJECT                   | THEORY     | PBA       | TOTAL      |
|---------------------------|------------|-----------|------------|
| ENGLISH                   | 100        | -         | 100        |
| URDU NORMAL/SINDHI NORMAL | 75         | -         | 75         |
| ISLAMIYAT/ETHICS          | 75         | -         | 75         |
| PHYSICS                   | 60         | 15        | 75         |
| CHEMISTRY                 | 60         | 15        | 75         |
| COMPUTER SCIENCE          | 60         | 15        | 75         |
| MATHEMATICS               | 75         | -         | 75         |
| <b>TOTAL</b>              | <b>505</b> | <b>45</b> | <b>550</b> |

**GENERAL GROUP:**

| SUBJECT                     | THEORY     | PBA      | TOTAL      |
|-----------------------------|------------|----------|------------|
| ENGLISH                     | 100        | -        | 100        |
| URDU NORMAL / SINDHI NORMAL | 75         | -        | 75         |
| ISLAMIYAT/ETHICS            | 75         | -        | 75         |
| GENERAL SCIENCE             | 75         | -        | 75         |
| GENERAL MATH                | 75         | -        | 75         |
| EDUCATION                   | 75         | -        | 75         |
| ECONOMICS                   | 75         | -        | 75         |
| CIVICS                      | 75         | -        | 75         |
| ISLAMIC STUDIES             | 75         | -        | 75         |
| <b>TOTAL</b>                | <b>550</b> | <b>-</b> | <b>550</b> |