



# 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,

Beena Kohati-Bilal Academic Head – Curriculum Development & Training Ziauddin University Examination Board

#### 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 <a href="http://dcar.gos.pk/BoC\_Other\_Pages/curriculum\_dev.html">http://dcar.gos.pk/BoC\_Other\_Pages/curriculum\_dev.html</a> 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.

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#### **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	Categor	ization		Marks	Distribu	tion	Total
	Students should be able to:	K	U	A	MCQs	CRQs	ERQs	
	Know the historical background of chemistry.	*			1			
Unit -1	Explain the contribution of Muslim scientists in the development of chemistry.		*					
Fundamentals Of	1.1 .1 Define chemistry 1.1.2 Importance in daily life.	*				1		
Chemistry	1.2 Identify and explain different branches of chemistry with the help of examples.	*	*			2		
Weightage:	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.		*					

	T	1			ı		,
	1.4.1 Distinguish between atoms and						
	ions. Molecule and molecular ions.						
	Ions and free radicals.		*				
	1.4.2 Molecules &Types of						
	Molecules						
	Worccures						
			*				
	1.6.1 Relate gram atomic mass,						
	gram molecular mass,						
	1.6.2 What is mole, gram formula			*			
	mass						
	1.6.3Describe how Avogadro's						
			*				
	number is related to the mole of any						
	substance.					2	
			١.			3	
	Identify the chemical equation in		*				
	terms of moles.						
				1.			
	Calculation with balance equation			*			
	using mole representative particles						
	masses.						
	Distinguish the terms gram atomic		*				
	mass, gram molecular mass and						
	gram formula mass						
	Change atomic mass, molecular			*			
	mass and formula into gram mass,						
	gram molecular mass and gram						
	formula mass.						
	Torritura mass.						
	Students will be able to:						
UNIT2	2.! Describe the discovery of		*				
	(atomic particle)						
ATOMIC	2.1.1Electron,						
STRUCTURE	21.12 Proton		*				
			*				
Weightage:	2.1.3 Neutron.		*				
14	2.1 Define Atomic Number (Z),						
	Mass Number (A) in term of						
	number of proton and/or neutron						
	how they are related.						
	now mey are related.						
	2217 7 7		*				
	2.2.1 Describe the contributions						
	Rutherford made to the						
	development of the atomic theory.						
	2.2.2 Explain how Bohr's atomic	*	*				
	model is different.						
	model is unferent.						
	221D @ M 1 41 4						
	2.3.1 Define Modern theories of						
	Atomic Structure ( De Broglie						

	what is its trend within a group and					
	within a period in the periodic table					
	within a period in the periodic table					
	4.1 Why do atoms form chemical		*			
	bonds					
	4.2 How formation of bond take					
			*			
	place.		-4-			
	4.3 Types of Bonds		١.			
	4.3.1 Explain how Ionic Bonds		*			
	form	*				
UNIT 4	4.3.2 Define Covalent Bond and its		*			
Chemical	Types					
Bonding	4.3.3 Dative Covalent Bonds	*	*			
	(Coordinate Covalent Bonds)					
	4.3.4 Difference between Polar and			*		
Weightage:	Non Polar Bonds					
14	4.3.4 Explain with the help of					
	diagram how Metallic Bonds are		*			
	formed					
	Torriled		*			
	4.4 What are Intermolecular					
	Forces					
			*			
	4.4.1Describe with the e.g. of HCl					
	how Dipole-Dipole Interactions takes					
	place	ata				
	4.4.2 Define Hydrogen Bonding &	*	*			
	explain it with the help of HF					
		*				
	4.5 On which factor Nature of	*				
	Bonding depends					
	4.5.1What are Ionic Compounds					
	4.5.2 Explain Covalent Bond					
	Compounds					
	•		*			
	4.5.3 Compare Covalent					
	Compounds & Coordinate					
	Covalent Compounds			*		
	4.5.4 What are the difference					
	between Polar and Non-Polar					
	Compounds					
	4.5.5 E-mlain		*			
	4.5. 5 Explain metals with its					
	properties					

				1		
	5. Define Diffusion &Effusion	*				
Unit 5	5.1 What are the characteristics Boltz Mann Maxwell Kelvin observed on the Gaseous state 5.1 Why density of gases increase on			*		
Physical	cooling?		*			
States of	5.1 What is the unit of density in	*				
Matter	gases					
	5.2 Boyle's establishes a relation					
Weightage:	between pressure-volume changes in			*		
12	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.					
	Charles & 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 Definehe plasma with help of	*				
	examples.					
	5.8 Define Bose Einstein					
	Condensate with help of example.					
UNIT 6	6.1 Define the following terms:	*	*			
Solution	solution, aqueous solution, solute					
***	and solvent and give an example of each.					
Weightage:	cucii.	<u> </u>		1		

6.2 Explain the difference between saturated, unsaturated and		*					
supersaturated solutions.		*					
6.2.4 Prepare to dilute solution numerically							
6.3 Classify Types of Solutions	ate	*					
6.4 Concentration Units	*	*					
6.4.1 Calculate Percentage by mass by Volume		*					
6.4. What is Molarity Calculate the Molarity of a Solution in the problem	*						
6.4 Describe how to prepare a solution of given Molarity.		*	*				
6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3.		*					
6.5 Define solution & factors effect on it.							
6.6 Define colloids and suspensions.							
6.6.1 Differentiate between solutions, suspension and colloid			*				
7.1 Define oxidation and reduction	*						
Explain oxidation and reduction in terms of loss or gain of electrons.		*					
7.2 Define Electrochemical cell & its Application		*					
	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume 6.4. What is Molarity Calculate the Molarity of a Solution in the problem 6.4 Describe how to prepare a solution of given Molarity. 6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3. 6.5 Define solution & factors effect on it. 6.6 Define colloids and suspensions.  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  * 6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume 6.4. What is Molarity Calculate the Molarity of a Solution in the problem 6.4 Describe how to prepare a solution of given Molarity. 6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3. 6.5 Define solution & factors effect on it. 6.6 Define colloids and suspensions.  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  *  6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume  6.4. What is Molarity Calculate the Molarity of a Solution in the problem  6.4 Describe how to prepare a solution of given Molarity.  6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3.  6.5 Define solution & factors effect on it.  6.6 Define colloids and suspensions.  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  *  6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume 6.4. What is Molarity Calculate the Molarity of a Solution in the problem 6.4 Describe how to prepare a solution of given Molarity. 6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3. 6.5 Define solution & factors effect on it. 6.6 Define colloids and suspensions.  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  * 6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume 6.4 What is Molarity Calculate the Molarity of a Solution in the problem 6.4 Describe how to prepare a solution of given Molarity.  6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3.  6.5 Define solution & factors effect on it.  6.6 Define colloids and suspensions.  *  *  *  *  *  *  *  *  *  *  *  *  *	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically 6.3 Classify Types of Solutions  *  6.4 Concentration Units 6.4.1 Calculate Percentage by mass by Volume  6.4. What is Molarity Calculate the Molarity of a Solution in the problem  6.4 Describe how to prepare a solution of given Molarity.  6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3.  6.5 Define solution & factors effect on it.  6.6 Define colloids and suspensions.  *  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its	saturated, unsaturated and supersaturated solutions.  6.2.4 Prepare to dilute solution numerically  6.3 Classify Types of Solutions  *  6.4 Concentration Units  6.4.1 Calculate Percentage by mass by Volume  6.4. What is Molarity Calculate the Molarity of a Solution in the problem  6.4 Describe how to prepare a solution of given Molarity.  6.4.1 Convert between the Molarity of a solution and its concentration in g/dm3.  6.5 Define solution & factors effect on it.  6.6 Define colloids and suspensions.  *  *  6.6.1 Differentiate between solutions, suspension and colloid  7.1 Define oxidation and reduction in terms of loss or gain of electrons.  7.2 Define Electrochemical cell & its

	T		1	ı	ı	ı	1	1
<b>ELECTRO</b>		*						
<b>CHEMISTRY</b>	7.2.1 Define Concepts of							
	Electrolyte							
	& Electrolysis with example	*						
XX/-:-1-4								
Weightage:								
12	7.2.2 Sketch an electrolytic cell,							
	label the cathode and the anode.							
		*						
	7.2.3 Faraday's law of Electrolysis							
	& it's solve its numerical.							
	& it's solve its numerical.							
	List the nessible uses of an	*						
	List the possible uses of an							
	electrolytic cell.		*					
	Sketch a Danniell cell, labeling the							
	cathode, the anode, and the							
	direction of flow of the electrons.							
		*						
	Distinguish between electrolytic		*					
	and Galvanic cells.							
	7.3 Define corrosion.	*						
		T						
	Describe rusting of iron as an							
	example of corrosion.		*					
	chample of correspond							
	Summarize the methods used to							
	prevent corrosion.							
	prevent corrosion.							
	7.4 Explain alast worldting of		*					
	7.4 Explain electroplating of							
	metals on steel (using examples of							
	zinc, Tin and chromium plating).							
	D 11 1 1 1 1							
	Describe how a battery produces							
	electrical energy							
	Classifying the type of elements		*					
	into metals, non-metals and							
TINITT O	metalloids.							
UNIT 8		*						
CHEMICAL	Draw flow chart diagram of	*						
REACTIVIT	classification of metals, non-metals							
Y	and metalloids.							
Weightage:	Show how cations and anions are	*						
	related to the terms metals and							
12	non-metals.							
	iivii-iiivais.							
	Identify elements as an allrali metal							
	Identify elements as an alkali metal or an alkaline earth metal.	*						
	от ан аткание еагиі шетат.							
	A nolygo why ollyoli motals are							
	Analyze why alkali metals are not	1						

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

**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?

- What does this mean?
- What expectations are there?
- What information can you infer from...?
- What is the main idea of ...?
- What restrictions would you add?
- What seems likely?
- What seems to be ...?
- What would happen if ...?
- What might happen if ...?
- Which are the facts?
- Which statements support ...?

#### **Apply**

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.

#### **Ouestion Stems**

- Can you group by characteristics such
- Choose the best statements that apply...
- Clarify why ...
- Do you know of another instance where ...?
- Draw a story map...
- Explain why a character acted in the way that he did...
- From the information given, can you develop a set of instructions about ...?
- How would you develop ...?
- How would you change ...?
- How would you demonstrate...?

#### Analyse

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.

#### **Question Stems**

- Can you distinguish between ...?
- Can you explain what must have happened when ...?
- Determine the point of view, bias, values, or intent underlying the presented material...
- Discuss the pros and cons of ...
- How can you classify ... according to ...?
- How can you compare the different parts?
- How can you sort the different parts...?
- How is ... connected to ...?
- How is ... similar to ...?
- How would you categorise...?
- How would you explain...?

- How would you develop?
- How would you explain ...?
- How would you modify ...?
- How would you present...?
- How would you solve ...?
- Identify the results of ...
- Illustrate the ...
- Judge the effects of ... What would result ...?
- Predict what would happen if ...
- Tell how much change there would be if ...
- Tell what would happen if ...
- What actions would you take to perform ...?
- What do you think could have happened next?
- What examples can you find that?
- What other way would you choose to ...?
- What questions would you ask of ...?
- What was the main idea ...?
- What would the result be if ...?
- Which factors would you change if
- Who do you think...?
- Why does this work?
- Write a brief outline ...
- Write in your own words ...

- What could the ending have been if ... had taken place?
- State the point of view of ...
- What are some of the problems of ...?
- What assumptions ...?
- What can you infer about...?
- What can you point out about ?
- What conclusions ...?
- What do you see as other possible outcomes?
- What does the author assume?
- What explanation do you have for ...?
- What ideas justify the conclusion?
- What ideas validate...?
- What is the analysis of ...?
- What is the function of ...?
- What is the problem with ...?
- What motive is there?
- What persuasive technique is used?
- What statement is relevant?
- What was the turning point?
- What were some of the motives behind ...?
- What's fact? Opinion?
- What's the main idea?
- What's the relationship between?
- Which events could not have happened?
- Why did ... changes occur?
- Why do you think?

# **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
-	UNDERSTAND				
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	РВА	TOTAL
ENGLISH	100	-	100
URDU NORMAL / SINDHI	75	-	75
NORMAL			
ISLAMIYAT/ETHICS	75	-	75
PHYSICS	60	15	75
CHEMISTRY	60	15	75
BIOLOGY	60	15	75
MATHEMATICS	75	-	75
TOTAL	505	45	550

# **COMPUTER SCIENCE GROUP:**

SUBJECT	THEORY	РВА	TOTAL
ENGLISH	100	-	100
URDU NORMAL/SINDHI	75	-	75
NORMAL			
ISLAMIYAT/ETHICS	75	-	75
PHYSICS	60	15	75
CHEMISTRY	60	15	75
COMPUTER SCIENCE	60	15	75
MATHEMATICS	75	-	75
TOTAL	505	45	550

# **GENERAL GROUP:**

SUBJECT	THEORY	РВА	TOTAL
ENGLISH	100	-	100
URDU NORMAL / SINDHI	75	-	75
NORMAL			
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
TOTAL	550	-	550