



ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

Secondary School Certificate (SSC)

Examination Syllabus

CHEMISTRY X

**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 Sana Anwer Ali
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August 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 <https://dcar.gos.pk/Sindh-Curriculum/Chemistry%20Curriculum%20Grade%20IX-X%20Revised%202017.pdf> 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.



EXAMINATION SYLLABUS

	UNITS	SLOs Student Learning Outcomes	K	U	A
1	Chemical Equilibrium	Define chemical equilibrium in terms of a reversible reaction.		*	
		Write both the forward and the reverse reactions and describe the macroscopic characteristics of each.			*
		Define Law of mass action.		*	
		Derive an expression for the equilibrium constant and its units.			*
		State the necessary conditions for equilibrium and the ways that equilibrium can be recognized.		*	
		Describe the equilibrium constant expression of a reaction.	*		
2	Acid, Base and Salt	Define and give examples of Arrhenius acids and bases.	*		
		Use the Bronsted-Lowry theory to classify substances as acids or bases, or as proton donors or proton acceptors.			*
		Classify substances as Lewis's acids or bases.			*
		Write the equation for the self-ionization of water.		*	
		Give the hydrogen ion or hydroxide ion concentration; classify a solution as neutral, acidic or basic.			*
		Compute and balance a neutralization reaction.			*
		Define Buffers with examples.		*	
		Define and explain salt its preparation and types.		*	

	UNITS	SLOs Student Learning Outcomes	K	U	A
3	Organic Chemistry	Recognize structural, condensed, and molecular formulas of the straight chain hydrocarbons up to ten carbon atoms.	*		
		Identify some general characteristics of organic compounds.	*		
		Explain the diversity and magnitude of organic compounds.		*	
		List some sources of organic compound.	*		
		List the uses of organic compounds.	*		
		Recognize and identify a molecule's functional groups.	*		
		Distinguish between saturated and unsaturated hydrocarbons.			*
		Name the alkanes up to decane, alkenes up to decene and alkynes up to decynes.	*		
		Differentiate between alkanes and alkyl radicals.			*
		Modify alkanes into alkyl radicals.			*
		Define functional group.	*		
		Differentiate between different organic compounds on the basis of their functional groups.			*
		Classify organic compounds into straight chain, branched chain and cyclic compounds.		*	
4	Biochemistry	Describe the composition of carbohydrates		*	
		Distinguish between mono-, di- and tri-saccharides.		*	
		Describe the bonding in a protein molecule.		*	
		Explain the sources and uses of carbohydrates, proteins, and lipids.		*	

	UNITS	SLOs Student Learning Outcomes	K	U	A
		Differentiate between fats and oil.			*
		Describe the importance of nucleic acids.		*	
		Explain the types of nucleic acids (deoxyribonucleic acid (DNA) and ribonucleic acid (RNA)).		*	
		Define and explain vitamins and their importance.		*	
5	Environmental Chemistry I: The Atmosphere	Define atmosphere.	*		
		Explain composition of atmosphere.		*	
		Differentiate between stratosphere and troposphere.			*
		Summarize the components of stratosphere and troposphere.		*	
		Describe major air pollutants.		*	
		Describe source and effects of air pollutants.		*	
		Explain ozone formation.		*	
		Describe acid rain and its effects.		*	
		Describe the ozone depletion and its effects.		*	
		Describe global warming.		*	
6	Environmental Chemistry II: Water	Describe the occurrence of water and its importance in the environment including Industry.		*	
		Review our dependence on water and the importance of maintaining its quality.			*
		Describe the composition and properties of water.		*	
		Differentiate among soft, temporary and permanent hard water.			*

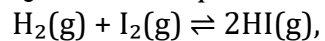
	UNITS	SLOs Student Learning Outcomes	K	U	A
		Describe methods for eliminating temporary and permanent hardness of water.			*
		Identify water pollutants.			*
		Describe the industrial wastes and household wastes as water pollutants.		*	
		Describe the effects of water pollutants on life.		*	
		Describe the various types of water borne diseases.		*	
7	Analytical Chemistry	Explain the basic concepts of analytical chemistry.		*	
		Differentiate between qualitative and quantitative analysis.		*	
		To study the important parameters, errors, accuracy and precision.			*
		Differentiate the classical and instrumental methods.			*
		Define the spectroscopic methods such as ultra-violet and visible spectroscopy, infrared spectroscopy.		*	
		Define the chromatographic methods such as high performance liquid chromatography and gas chromatography.		*	
		Define the electrochemical methods such as potentiometry and conductometry.		*	
		Students will be able to understand the new methods, scientific investigation, they will also be able to communicate their findings using a variety of conventional and advanced technology in the field of analytical chemistry.			*
8	Industrial Chemistry	Know different products prepared in industry.	*		
		Know about saponification process (soap).	*		
		Explain different materials required for soap		*	

	UNITS	SLOs Student Learning Outcomes	K	U	A
		preparation.			
		Construct the flow chart diagram of full process of soap formation.			*
		Describe the preparation of sugar from cane sugar.		*	
		Describe the various steps of sugar formation.		*	
		Know about composition of different soft drinks such as Pepsi, dew, 7-up and coca cola.			*
		Explain various components and differences in different soft drinks.			*
		Explain about the importance of pharmaceutical industries.			*
		Explain about various operations carried out in industry.			*
		Account for quality control for medicines and their importance.			*
		Generalize the relation between chemistry and carrier for various industries.		*	
		Define petroleum.	*		
		Describe the formation of petroleum and natural gas.		*	
		Describe the composition of petroleum.		*	
		Describe briefly the fractional distillation of petroleum.		*	

GRADE 10 CHEMISTRY

PBA Sample Questions

Q1. For the equilibrium reaction:



$$K_c = \frac{[\text{HI}]^2}{[\text{H}_2][\text{I}_2]}$$

If $[\text{HI}]$ increases, what happens to Q relative to K and how does the system respond?

	Condition	Effect
A	$Q > K$	shifts right
B	$Q < K$	shifts left
C	$Q > K$	shifts left
D	$Q = K$	no shift

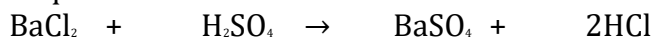
Correct answer: C

Q2. Which row describes a chemical change?

Row	Process 1	Process 2	Process 3	Process 4
A	Melting ice	Dissolving sugar in water	Boiling water	Condensation of steam
B	Burning magnesium	Rusting of iron	Souring of milk	Neutralization of acid with base
C	Breaking glass	Sublimation of iodine	Evaporation of alcohol	Melting wax
D	Freezing water	Dissolving salt	Crushing chalk	Liquefying oxygen

Correct answer: B

Q3. The equation for the reaction between barium chloride and dilute sulfuric acid is shown.



Which row shows the state symbols for this equation?

	BaCl_2	H_2SO_4	BaSO_4	2HCl
A	(aq)	(aq)	(s)	(aq)
B	(aq)	(l)	(s)	(aq)
C	(l)	(aq)	(s)	(l)
D	(aq)	(l)	(aq)	(l)

Correct answer: A

Q4. Four different solutions, J, K, L and M, are tested with universal indicators.

solution	J	K	L	M
colour with universal indicator	green	red	purple	orange

Which solutions are acidic?

- A) J & M B) K & M C) K only D) L only

Correct answer: B

Q5. Which equation correctly represents the reaction of magnesium with dilute sulfuric acid?

- A) $\text{Mg} + \text{H}_2\text{SO}_4 \rightarrow \text{MgSO}_4 + \text{H}_2$
 B) $\text{Mg} + \text{H}_2\text{SO}_4 \rightarrow \text{Mg}(\text{HSO}_4)_2 + \text{H}_2$
 C) $2\text{Mg} + 2\text{H}_2\text{SO}_4 \rightarrow 2\text{MgSO}_4 + 2\text{H}_2$
 D) $\text{Mg} + 2\text{H}_2\text{SO}_4 \rightarrow \text{Mg}(\text{SO}_4)_2 + 2\text{H}_2$

Correct answer: A

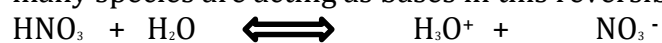
Q6. The reaction of acid and base is called neutralization reaction. Salt and water are the products of a neutralization reaction. In the neutralization reaction: $\text{H}_2\text{SO}_4 + 2\text{KOH} \rightarrow ?$

What are the products?

Row	Product 1	Product 2	Product 3	Product 4
A	K_2SO_4	H_2	-	-
B	KHSO_4	H_2O	KOH	SO_2
C	K_2SO_4	H_2O	-	-
D	K_2SO_4	H_2O_2	H_2	H_2O

Correct answer: C

Q7. According to Lewis Theory, Bases are the species which donate a lone pair of electrons. How many species are acting as bases in this reversible reaction?



- A) 3 B) 2 C) 1 D) 0

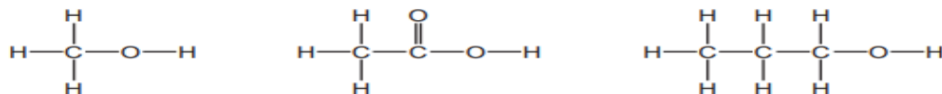
Correct answer: B

Q8. Which row identifies the homologous series to which the molecular structure belongs?

	molecular structure	homologous series
A		alkane
B		alkene
C		alcohol
D		carboxylic acid

Correct answer: A

Q9. The structures of three organic molecules are shown.

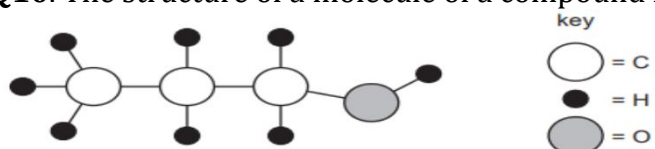


Which description of the three molecules is correct?

	they all have the same general formula, $\text{C}_n\text{H}_{2n+1}\text{OH}$	they all belong to the same homologous series
A	no	no
B	no	yes
C	yes	no
D	yes	yes

Correct answer: A

Q10. The structure of a molecule of a compound is shown.

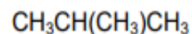
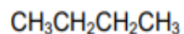


What is the M_r of this compound?

- A) 60 B) 56 C) 59 D) 50

Correct answer: A

Q11. The structural formulae of three hydrocarbons are shown.



Which statement about hydrocarbons is correct?

A	They are all alkanes.
B	They decolourise aqueous bromine.
C	They are structural isomers.
D	They undergo addition reactions.

Correct answer: A

Q12. To which homologous series does X belong and how many atoms are in one molecule of X?



Row	Homologous series	Number of atoms in one molecule
A	Alkene	15
B	Alkyne	17
C	Alkane	17
D	Aromatic hydrocarbon	18

Correct answer: C

Q13. Poor nutrition can lead to a condition called rickets in which bones fail to develop properly. The table shows some minerals and vitamins present in four foods. Which food would be best for a child who has rickets?

	calcium	iron	vitamin C	vitamin D
A	✓	x	✓	x
B	✓	x	x	✓
C	x	✓	✓	x
D	x	✓	x	✓

key

✓ = substance present

x = substance absent

Correct answer: B

Q14. The table shows vitamin and mineral salt content of four foods.

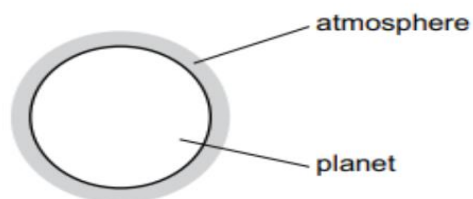
Food	Vitamin C	Vitamin D	Ca	Fe
1	Low	High	Low	Low
2	Low	Low	Low	High
3	Low	Low	High	Low
4	High	Low	Low	low

Which foods would stop a person from suffering from anaemia (lack of haemoglobin) and scurvy (bleeding gums)?

	anaemia	scurvy
A	1	2
B	1	3
C	2	4
D	3	4

Correct answer: C

Q15. A new planet has been discovered and its atmosphere has been analyzed.



The table shows the composition of its atmosphere.

gas	percentage by volume
carbon dioxide	4
nitrogen	72
oxygen	24

Which gases are present in the atmosphere of the planet in a higher percentage than they are in the Earth's atmosphere?

- A) carbon dioxide and oxygen
- B) carbon dioxide only
- C) nitrogen and oxygen
- D) nitrogen only

Correct answer: A

Q16. Oxygen is a reactive element

Which row shows which of oxygen's reactions are useful?

	fuel combustion	rusting	steel manufacture
A	no	no	yes
B	no	yes	no
C	yes	no	yes
D	yes	yes	no

Correct answer: C

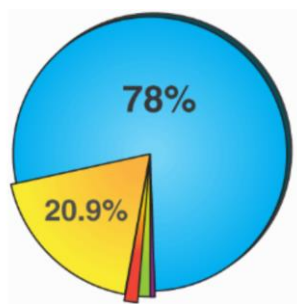
Q17. Sulfur dioxide SO₂, nitrogen dioxide NO₂, and carbon monoxide CO, are air pollutants.

Which row correctly shows their major source?

	motor car engines	power stations
A	CO	NO ₂ , SO ₂
B	NO ₂ , CO	SO ₂
C	SO ₂ , NO ₂	CO
D	SO ₂	NO ₂ , CO

Correct answer: B

Q18. The diagram shows the composition by volume of air.



Region	Percentage
Blue	78%
Yellow	20.9%
Red	Less than 0.17%
Green	Less than 0.9 %
Violet	Less than 0.03 %

What is the Green region?

- A) argon B) carbon dioxide C) nitrogen D) oxygen

Correct answer: A

Q19. The table gives the composition of the atmosphere of four newly discovered planets.

planet	composition of atmosphere
W	argon, carbon dioxide and oxygen
X	argon, nitrogen and oxygen
Y	argon, carbon dioxide and methane
Z	methane, nitrogen and oxygen

On which planets is the greenhouse effect likely to occur?

- A) W only B) W, X and Z C) W and Y only D) W, Y and Z

Correct answer: D

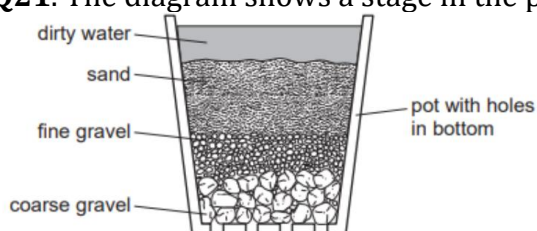
Q20. Domestic water is not safe for direct consumption because it may contain insoluble particles, harmful microorganisms, and dissolved gases. Several processes are used in water treatment plants before it is supplied to homes.

Which row correctly matches the process with its primary role in water purification?

Row	Process	Role in water treatment
A	Filtration	To kill bacteria and other harmful microbes
B	Sedimentation	To allow heavy insoluble particles to settle
C	Chlorination	To remove hardness caused by calcium and magnesium ions
D	Aeration	To filter out fine suspended particles

Correct answer: B

Q21. The diagram shows a stage in the purification of dirty water.



Which process does this apparatus show?

	Process	Reason
A	Chlorination	To kill bacteria and other harmful microbes
B	Condensation	To convert water vapours into liquid
C	Distillation	To separate out dissolved liquids from water
D	Filtration	To larger particles like dirt, leaves, sediment, and other debris present in the water.

Correct answer: D

Q22. Which statements about water are correct?

1. Household water may contain salts in solution.
2. Water for household use is filtered to remove soluble impurities.
3. Water is treated with chlorine to kill bacteria.
4. Water is used in industry for cooling.

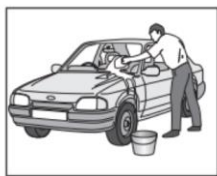
A	1 and 2
B	1 and 3
C	2 and 3
D	1, 3 and 4

Correct answer: D

Q23. The diagram shows some uses of water in the home:



1



2



3

For which uses is it important for the water to have been treated?

- A) 1 only B) 2 only C) 3 only D) 1, 2 and 3

Correct answer: A

Q24. A tank of drinking water has been contaminated with sea-water. The water now contains dissolved salts, suspended sand particles, and harmful bacteria.

Different treatment methods are suggested to make the water safe for consumption.

Which row in the table correctly matches the process with the substance removed?

Row	Process	Substance removed
A	Chlorination	Salts
B	Filtration	Bacteria
C	Electrolysis	Sand
D	Filtration and Chlorination	Sand and Bacteria

Correct answer: D

Q25. 2.00 g of powdered calcium carbonate is added to 50.0 cm³ of hydrochloric acid. Which row correctly identifies the apparatus used to measure these quantities and the products formed?

Row	Apparatus for CaCO ₃	Apparatus for HCl	Products formed
A	Measuring cylinder	Pipette	CaCl ₂ + H ₂
B	Balance	Burette	CaCl ₂ + CO ₂ + H ₂ O
C	Balance	Measuring cylinder	CaCl ₂ + CO ₂ + H ₂ O
D	Pipette	Balance	CaCl ₂ + H ₂ O

Correct answer: C

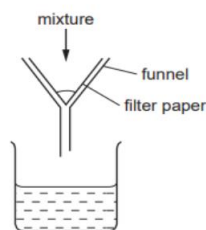
Q26. In an experiment to prepare a standard solution, a student must transfer exactly 5.00 cm³ of concentrated acid to a conical flask before dilution. Several apparatus options are available in the laboratory.

Which row correctly identifies the apparatus that should be used, along with its suitability for delivering this precise volume?

Row	Apparatus	Typical Use
A	Measuring Cylinder	Measuring approximate volumes ($\pm 0.5 \text{ cm}^3$)
B	Beaker	Holding or mixing liquids
C	Volumetric Pipette	Delivering only one fixed volume (e.g., 25 cm ³)
D	Burette	Delivering variable, precise volumes ($\pm 0.05 \text{ cm}^3$)

Correct answer: D

Q27. A mixture is separated using the apparatus shown.



What is the mixture?

- A) aqueous copper chloride and copper
- B) aqueous copper chloride and sodium chloride
- C) ethane and methane
- D) ethanol and water

Correct answer: A

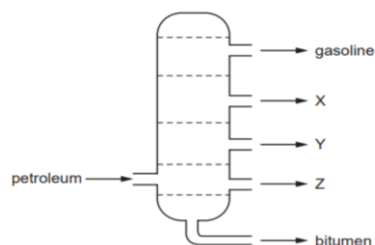
Q28. This apparatus is primarily used to measure:



- A) Molecular mass
- B) pH of a solution
- C) Electrical conductivity of ions in solution
- D) Colour intensity

Correct answer: C

Q29. The diagram shows the separation of petroleum into fractions.



What could X, Y and Z represent?

	X	Y	Z
A	diesel oil	lubricating fraction	paraffin
B	lubricating fraction	diesel oil	paraffin
C	paraffin	lubricating fraction	diesel oil
D	paraffin	diesel oil	lubricating fraction

Correct answer: D

Q30. Petroleum is separated into different fractions by fractional distillation.

Each fraction has a specific use, a typical carbon chain length, and a physical state at room temperature.

Which row correctly matches these properties?

Row	Fraction	Typical Use	Carbon Chain Length	State at Room Temp
A	Petrol (Gasoline)	Fuel for cars	C ₁ –C ₄	Gas
B	Diesel	Fuel for buses/lorries	C ₁₀ –C ₂₀	Liquid
C	Bitumen	Fuel for jet engines	C ₁ –C ₄	Gas
D	Kerosene	Road surfacing	C ₁₅ –C ₂₅	Solid

Correct answer: B

Chemistry Grade X Scheme of Assessment

Maximum marks: 75

Section “A”

Multiple Choice Questions (MCQs)

(12 x 1 = 12)

- Attempt 12 MCQs. Each MCQ carries equal marks.

Practical based assessments (PBAs)

(15 x 1 = 15)

- Attempt 15 MCQs. Each MCQ carries equal marks.

Section “B”

Short Answer Questions

(8 x 3 = 24)

- Attempt any 8 out of 12 questions. Each questions carries equal marks.

Section “C”

Detailed Answer Questions

(4 x 6 = 24)

- Attempt any 4 out of 6 questions. Each question carries equal marks.

Chemistry Grade IX

Table of Specification (TOS)

S.No	Units	Weightage in evaluation 100%	MCQs 1 mark each	PBA's 1 mark each	Short Answers 3 marks each	Detailed Answers 6 marks each
1	Chemical Equilibrium	4	1	0	1	0
2	Acid, Base and Salt	21	2	10	1	1
3	Organic Chemistry	14	2	0	2	1
4	Biochemistry	20	2	5	2	1
5	Environmental Chemistry-I: The Atmosphere	7	1	0	2	0
6	Environmental Chemistry-II: Water	13	1	0	2	1
7	Analytical Chemistry	10	1	0	1	1
8	Chemical Industries	11	2	0	1	1
Total # of Questions asked			12	15	12	6
Total # of Questions to be attempted			12	15	8	4
Maximum marks attainable			12 marks	15 marks	24 marks	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"> • 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 ...?
<p>Apply</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>Question Stems</p> <ul style="list-style-type: none"> • Can you group by characteristics such as ...? • 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...? 	<p>Analyse</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>Question Stems</p> <ul style="list-style-type: none"> • 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...?

<ul style="list-style-type: none"> • 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 ... 	<ul style="list-style-type: none"> • 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 ?
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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 II EXAMINATION
MARKS BREAKUP GRID FOR EXAMINATION 2025

SCIENCE GROUP:

SUBJECT	THEORY	PBA	TOTAL
ENGLISH	100	-	100
URDU EASY / SINDHI EASY	75	-	75
PAKISTAN STUDIES	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	PBA	TOTAL
ENGLISH	100	-	100
URDU EASY / SINDHI EASY	75	-	75
PAKISTAN STUDIES	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	PBA	TOTAL
ENGLISH	100	-	100
URDU EASY / SINDHI EASY	75	-	75
PAKISTAN STUDIES	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