



ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

Secondary School Certificate (SSC)

Examination syllabus PHYSICS 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 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

The physics course at the secondary school level aims to:

1. Cultivate interest, motivation, and a sense of achievement in the study of physics.
2. Foster a deep understanding of concepts, principles, systems, processes, and applications related to physics, enabling students to describe, explain, and apply them in real-life situations.
3. Develop critical thinking, imagination, problem-solving abilities, data management skills, investigative techniques, and effective communication.
4. Instill a sense of responsible citizenship by promoting respect for the environment and encouraging the sustainable use of resources.
5. Highlight the relevance of the scientific method while recognizing its limitations and exploring the dynamic relationship between science, technology, and society.

OBJECTIVES

The objectives of the syllabus are to:

1. Shift the focus from purely factual knowledge to a deeper understanding and application of physics concepts and principles.
2. Prepare students for an increasingly technological world by developing investigation skills and laboratory competencies, including:
 - Measuring, observing, and manipulating tools and equipment.
 - Recording and interpreting data.
 - Analyzing results, making predictions, and effectively communicating findings.
3. Align with the standards and benchmarks set by the National Curriculum Council, incorporating themes and sections that emphasize conceptual linkages and practical relevance.
4. Promote higher-order cognitive skills by defining learning outcomes across six domains:
 - Recalling
 - Understanding
 - Applying
 - Analyzing
 - Evaluating
 - Creating
5. Provide detailed learning outcomes within each unit, emphasizing the development of investigation skills and laboratory work.



EXAMINATION SYLLABUS WITH SCHEME OF ASSESSMENT

Section -01 General Physics

| Unit - 01 Physical Quantities and Measurements Student Learning Outcomes | | | TOS | | |
|---|---|------------------------|-------------|-------------|-------------|
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 1.1 Introduction to physics | 1.1.1 Describe the crucial role of Physics in Science, Technology and Society 1.1.2 List with brief description of various branches of physics | K K | 2 | - | - |
| 1.2 Measuring instruments | 1.2.1 To choose a proper instrument (meter rule, Vernier calipers, screw gauge, physical balance stop watch, measuring cylinder) for the measurement of length, diameter, mass, time and volume in daily life activities. | A | | | |
| 1.3 Prefixes | 1.3.1 Interconvert the prefixes and their symbols to indicate multiple and sub-multiple for both base and derived units | U | | | |
| 1.4 Standard form / scientific notation | 1.4.1 Write the answer in scientific notation in measurements and calculations | A | | | |
| 1.5 Density | 1.5.1 Define term density with SI unit 1.5.2 To determine density of solids and liquids | K A | | | |
| 1.6 Significant figures | 1.6.1 Describe the need using significant figures for recording and stating results in the laboratory | U | | | |

Section 02 Newtonian Mechanics

| Unit - 02 Kinematics Student Learning Outcomes | | | TOS | | |
|---|--|-----------------|------|------|------|
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 2.1 Rest and motion | 2.1.1 Describe using examples how objects can be at rest and in motion simultaneously. | K | 1 | 2 | - |
| 2.2 Types of motion | 2.2.1 Identify different types of motion i.e., translatory, (linear, random, and circular); rotatory and vibratory motions and distinguish among them. | U | | | |
| 2.3 Describing motion | 2.3.1 Define with examples distance, displacement, speed, velocity and acceleration (with units) | K U | | | |
| | 2.3.2 Differentiate with examples between distance and displacement, speed and velocity | | | | |
| 2.4 Scalars and vectors | 2.4.1 Differentiate with examples between scalar and vector quantities | U U | | | |
| | 2.4.2 represent vector quantities by drawing | | | | |
| 2.5 Graphical analysis of motion | 2.5.1 Plot and interpret distance-time graph and speed-time graph | U, A | | | |
| | 2.5.2 Determine and interpret the slope of distance-time and speed-time graph | A U | | | |
| | 2.5.3 Determine from the shape of the graph, the state of a body (i) at rest (ii) moving with constant speed (iii) moving with variable speed | A | | | |
| | 2.5.4 Calculate the area under speed-time graph to determine the distance traveled by the moving body. | | | | |
| 2.6 Equations of motion | 2.6.1 Solve problems related to uniformly accelerated motion using appropriate equations | A A | | | |
| | 2.6.2 To rearrange the equation according to the requirement of the problem | | | | |
| 2.7 Motion due to gravity | 2.7.1 Solve problems related to freely falling bodies using 10 m/s^2 as the acceleration due to gravity. | A | | | |

| Unit - 3 Dynamics | | | TOS | | |
|-----------------------------|--|------------------|------|------|------|
| Student Learning Outcomes | | | | | |
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 3.1 Momentum | 3.1.1 Define momentum with SI unit 3.1.2 Calculating momentum using equation $p = mV$ 3.1.3 Solve problem using the equation Force = change in momentum / change in time 3.1.4 Identify the safety devices (such as packaging of fragile objects, the action of crumple zones and seatbelts) utilized to reduce the effects of changing momentum. | K A A U | 2 | 2 | 1 |
| 3.2 Newton's laws of motion | 3.2.1 State Newton's laws of motion 3.2.2 Distinguish between mass and weight 3.2.3 Solve problem using $F = ma$, and $w = mg$ | K U A | | | |
| 3.3 Friction | 3.3.1 Define friction 3.3.2 Explain the effect of friction on the motion of a vehicle in the context of tyre surface, road conditions including skidding, braking force 3.3.3 Identify the relationship between load and friction by sliding a trolley carrying different load with the help of a spring balance on different surfaces 3.3.4 Demonstrate that rolling friction is much lesser than sliding friction | K U U U | | | |

| Unit - 4 Turning effect of forces | | | TOS | | |
|-----------------------------------|--|-----------------|------|------|------|
| Student Learning Outcomes | | | | | |
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 4.1 Force on bodies | 4.1.1 Define like and unlike parallel forces | K | 2 | 1 | 1 |
| 4.2 Addition of forces | 4.2.1 State head to tail rule of vector addition of forces/vectors | K | | | |
| 4.3 Resolution of forces | 4.3.1 Describe how a force is resolved into its perpendicular components 4.3.2 Determine the magnitude and direction of a force from its perpendicular components. | U A | | | |
| 4.4 Moment of force | 4.4.1 Define moment of force or torque as moment = force x perpendicular distance from pivot to the line of action of force. 4.4.2 Explain the turning effect of force by relating it to everyday life. 4.4.3 Illustrate by describing a practical application of moment of force in the working of bottle opener, spanner, door/windows handle etc. | K U A | | | |
| 4.5 Principle of moments | 4.5.1 State the principle of moments 4.5.2 Verify the principle of moments by using a metre rod balanced on a wedge | K A | | | |
| 4.6 Centre of mass | 4.6.1 Define the Centre of mass and Centre of gravity of a body 4.6.2 Determine the position of Centre of mass/gravity of regularly and irregularly shaped objects | K A | | | |
| 4.7 Couple | 4.7.1 Define couple as a pair of forces tending to produce rotation. 4.7.2 Prove that the couple has the same moments about all points 4.7.3 Demonstrate the role of couple in the steering wheels and bicycle pedals | K A A | | | |
| 4.8 Equilibrium | 4.8.1 Define equilibrium and classify its types by quoting examples from everyday life. 4.8.2 State the two conditions for equilibrium of a body | K K | | | |

| | | | | | |
|---------------|--|------------|--|--|--|
| | 4.8.3 Solve problems on simple balanced systems when bodies are supported by one pivot only | A K | | | |
| | 4.8.4 Describe the states of equilibrium and classify them with common examples | | | | |
| 4.9 Stability | 4.9.1 Explain effect of the position of the Centre of mass on the stability of simple objects Demonstrate through a balancing toy, racing car etc. that the stability of an object can be improved by lowering the Centre of mass and increasing the base area of the objects | U U | | | |

| Unit - 5 Forces and Matter | | | | | |
|-----------------------------------|--|------------------------|-------------|-------------|-------------|
| Student Learning Outcomes | | | TOS | | |
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 5.1 Forces acting on solids | 5.1.1 Using forces to change the shape and size of the body | U | 1 | 2 | 2 |
| 5.2 Stretching springs | 5.2.1 Carry out experiment to produce extension against load graph 5.2.2 Interpret extension against load graph | U A | | | |
| 5.3 Hook's law | 5.3.1 Define Hook's law 5.3.2 Calculate extension in spring and spring constant using formula $F = kx$ | K A | | | |
| 5.4 Pressure | 5.4.1 Define and explain pressure 5.4.2 To understand the factors that affect the pressure 5.4.3 To calculate the pressure using formula $P = F/A$ 5.4.4 To understand hydraulic machines | K U A U | | | |

| Unit - 6 Gravitation | | | | | |
|----------------------------------|---|-----------------|------|------|------|
| Student Learning Outcomes | | | TOS | | |
| Contents | students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 6.1 Law of Gravitation | 6.1.1 State Newton's law of gravitation | K | 1 | - | 2 |
| | 6.1.2 Explain that the gravitational forces are consistent with Newton's third law. | U | | | |
| | 6.1.3 Explain gravitational field as an example of field of force. | U | | | |
| | 6.1.4 Solve problems using Newton's law of gravitation | A | | | |
| 6.2 Weight | 6.2.1 Define weight (as the force on an object due to a gravitational field.) | K | | | |
| 6.3 Measurement of mass of earth | 6.3.1 Calculate the mass of earth by using law of gravitation | A | | | |
| 6.4 Artificial satellites | 6.4.1 Discuss the importance of Newton's law of gravitation in understanding the motion of satellites | U | | | |
| | 6.4.2 Describe how artificial satellites keep on moving around the earth due to gravitational force | U | | | |

| Unit - 7 Energy sources and transfer of energy Student Learning Outcomes | | | TOS | | |
|---|---|------------------|------|------|------|
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 7.1 Work | 7.1.1 Define work and its SI unit. 7.1.2 Calculate work done using equation $\text{Work} = \text{force} \times \text{distance moved in the direction of force}$ | K A | 1 | 1 | 1 |
| 7.2 Energy forms | 7.2.1 Define kinetic energy and potential energy 7.2.2 Use Kinetic Energy $E_k = \frac{1}{2} mv^2$ and potential energy $E_p = mgh$ to solve problems. | K A | | | |
| 7.3 Conversion of energy | 7.3.1 Describe the processes by which energy is converted from one form to another with reference to fossil fuel energy, hydroelectric generation, solar energy, nuclear energy, geothermal energy, wind energy, biomass energy and tidal energy. | U | | | |
| 7.4 Renewable and nonrenewable energy sources | 7.4.1 Differentiate energy sources as non-renewable and renewable energy sources with examples of each. | U | | | |
| 7.5 Efficiency | 7.5.1 Define efficiency of a working system and calculate the efficiency of an energy conversion using the formula $\text{efficiency} = \frac{\text{energy converted into the required form}}{\text{total energy input}}$ 7.5.2 Explain why a system cannot have an efficiency of 100%. | K U | | | |
| 7.6 Power | 7.6.1 Define power and calculate power from the formula $\text{Power} = \frac{\text{work done}}{\text{time taken}}$ 7.6.2 Define the unit of power “watt” in SI and its conversion with horse power | K, A K, A | | | |

Section 03 Energy and thermal Physics

| Unit - 8 Properties of Matter | | | TOS | | |
|---------------------------------------|---|------------------------|-------------|-------------|-------------|
| Student Learning Outcomes | | | | | |
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 8.1 Kinetic molecular model of matter | 8.1.1 Describe States of matter 8.1.2 State kinetic molecular model of matter | U K | 1 | 1 | 1 |
| 8.2 Forces and kinetic theory | 8.2.1 Explain the kinetic model in terms of forces b/w particles | U | | | |
| 8.3 Gases and the kinetic theory | 8.3.1 Explain the behavior of gases 8.3.2 Calculate changes in pressure and volume | U A | | | |

| Unit - 9 Thermal Properties of Matter Student Learning Outcomes | | | TOS | | |
|--|---|-----------------|------|------|------|
| Contents | Students should be able to: | Cognitive level | MCQS | CRQS | ERQS |
| 9.1 Heat and temperature | 9.1.1 Differentiate b/w heat and temperature | U | 1 | 1 | 1 |
| 9.2 Specific heat capacity | 9.2.1 Define the terms heat capacity and specific heat capacity with SI unit | K | | | |
| | 9.2.2 Describe one everyday effect due to relatively large specific heat of water | K | | | |
| 9.3 Heat of fusion and heat of vaporization | 9.3.1 Describe heat of fusion and heat of vaporization (as energy transfer without a change of temperature for change of state) | K A | | | |
| | 9.3.2 Describe experiments to determine heat of fusion and heat of vaporization of ice and water respectively by sketching temperature-time graph on heating ice. | | | | |
| 9.4 Evaporation process | 9.4.1 Explain the process of evaporation and the difference between boiling and evaporation. | U U A | | | |
| | 9.4.2 Explain that evaporation causes cooling | | | | |
| | 9.4.3 List the factors which influence surface evaporation | | | | |
| 9.5 Thermal expansion | 9.5.1 Define thermal expansion | K | | | |
| | 9.5.2 Describe qualitatively the thermal expansion of solids (linear and volumetric expansion) | U | | | |
| | 9.5.3 List and explain some of the everyday applications and consequences of thermal expansion | A | | | |
| | 9.5.4 Explain the thermal expansion of liquids (real and apparent expansion) | U | | | |

| Unit - | Content | Weighting in %age | Periods (Theory) | Periods (Investigation / Practical work) |
|---------------|---------------------------------------|--------------------------|-------------------------|---|
| PART-I | | | | |
| 1. | Physical quantities and measurement | 12% | 13 | 7 |
| 2. | Kinematics | 15% | 15 | 9 |
| 3. | Dynamics | 8% | 8 | 5 |
| 4. | Turning effect of forces | 19% | 19 | 10 |
| 5. | Forces and Matter | 8% | 8 | 5 |
| 6. | Gravitation | 8% | 8 | 5 |
| 7. | Energy Sources and Transfer of Energy | 13% | 13 | 7 |
| 8. | Properties of Matter | 6% | 7 | 5 |
| 9. | Thermal properties of matter | 11% | 10 | 8 |
| | | 100% | 100 | 60 |

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 ? |
|--|---|

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 |
| TOTAL | 505 | 45 | 550 |

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 |
| TOTAL | 505 | 45 | 550 |

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 |
| TOTAL | 550 | - | 550 |