



# Higher Secondary School Certificate (HSSC)

## **Examination syllabus**

Physics XI

**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 <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:**

#### **VISION STATEMENT**

Promotion of process skills, problem solving abilities and application of concepts, useful in real life situation for making physics learning more relevant, meaningful and stimulating.

#### **AIMS**

The Aims of Physics at higher secondary level are to enable student to:

- Develop among the students the habit of scientific and rational thinking and an attitude to search for order and symmetry in diverse phenomena of nature and thereby to appreciate the supreme wisdom and creative powers of the creator.
- Become lifelong learner, effective problem solver, responsible and productive citizens in a technological world.
- Strengthen the concepts developed at the secondary level to lay firm foundation for further learning of physics at the tertiary level, in engineering or in other physics dependent and vocational courses.
- Develop process skills and experimental, observational, manipulative, decision making and investigatory skills in the students.
- Understand and interpret scientific information presented in verbal, mathematical or graphical form and to translate such information from one form to another.
- Understand and appreciate the inter relationship and balance that exists in nature, the problems
  associated with the over exploitation of the environmental resources and disturbance because of
  the human activities in the ecological balance, thus taking
  care of the environment.

#### **CURRICULUM DESIGN ON FOLLOWING OBJECTIVES**

- The curriculum is designed to emphasize on the understanding and application of physics concepts and principles to prepare the learners for rapidly changing technological as well social scenario of the world and requirements of the market and society.
- This approach has been adopted in recognition of the need for students to develop skills that will be of long-term value in an increasingly technological world.
- The curriculum framework is based on the standards and benchmarks framed by Provincial Curriculum Council. It comprises of eight main themes/sections.
- Each section is further divided into "units" showing their conceptual linkages.
- Each unit is furthermore divided into Students Learning Outcomes which not only covers the fundamental laws/principles of physics but also cutting-edge technological application used in our daily life.
- In order to specify the syllabus as precisely as possible and also to emphasize the importance of higher order abilities and skills other than recall, learning outcomes have been used throughout.

- Each unit of the syllabus is specified by content section/major concepts followed by detailed learning outcomes.
- The intended level and scope of treatment of a content is defined by the stated learning outcomes with easily recognizable domain of
- (i) Recalling
- (ii) Understanding
- (iii) Applying
- (iv) Analyzing
- (v) Evaluating
- (vi) And creating, under the subhead "skills" measuring, observing, manipulating, recording and interpreting /analyzing, predicting and communicating

abilities/ skills are expected to be developed through related investigations, activities And practical work.

## ZIAUDDIN UNIVERSITY EXAMINATION BOARD

## SLOs CATEGORIZATION XI-PHYSICS Detailed Syllabus

| CHAPTER                                 | TOPIC   | Student learning outcomes  |
|---|---|--|
| Chapter no 1 Scope of physics.          | <ul> <li>Introduction to physics</li> <li>S. I Base,         Supplementary and         derived units</li> <li>Dimensionality</li> <li>Errors and uncertainty</li> <li>Significant figures</li> <li>Precision and accuracy</li> </ul>  | <ul> <li>Describe Physics.</li> <li>Describe the scope of Physics in science, technology and society.</li> <li>State SI base units, derive units, and supplementary units for various measurements.</li> <li>Derive formulae in simple cases using dimensions.</li> <li>Why all measurements contain some uncertainty.</li> <li>Distinguish between systematic errors and random errors.</li> <li>Write answers with correct scientific notation, number of significant figures and units in all numerical and practical work.</li> <li>Identify that least count or resolution of a measuring instrument is the smallest increment measurable by it. Differentiate between precision and accuracy.</li> </ul> |
| Chapter no 2<br>Scalars and<br>vectors. | <ul> <li>Vectors</li> <li>Addition by rectangular components system</li> <li>Displacement / Distance with graphical representation</li> <li>Speed and velocity with graphical representation</li> <li>Acceleration, equations of uniformly accelerated motion</li> <li>Projectile Motion</li> </ul> | <ul> <li>Describe a vector and its representation</li> <li>Describe the Cartesian coordinate system.</li> <li>Resolve a vector into two perpendicular components.</li> <li>Describe vector nature of displacement.</li> <li>Analyze and interpret patterns of motion of objects using displacement-time graph, velocity-time graph acceleration-time graph</li> <li>Determine the instantaneous velocity of an object moving along the same straight line by measuring the slope of displacement time graph.</li> <li>Understand projectile motion</li> <li>Calculate height, range and time of flight using equations of projectile motion</li> </ul>   |

| Chapter no 3<br>Motion                        | <ul> <li>Newton's Laws of<br/>Motion</li> <li>Momentum and<br/>Impulse</li> <li>Law of Conservation of<br/>Momentum</li> </ul>  | <ul> <li>Apply Newton's laws to explain motion of objects Define inertia</li> <li>Describe and use of the concept of weight as the effect of a gravitational field on a mass. Apply Newton's laws of motion as the rate of change of momentum</li> <li>Describe the Cartesian coordinate system.</li> <li>Represent a vector into two perpendicular</li> <li>Explain law of conservation of Momentum</li> <li>Describe elastic and inelastic collision with examples Solve different problems of elastic and inelastic collisions between two bodies in one dimension by using law of conservation of momentum.</li> </ul>   |
|---|---|--|
| Chapter no 4<br>Motion in two<br>Dimension    | <ul> <li>Projectile Motion</li> <li>Trajectory of projectile</li> <li>Application</li> <li>Uniform circular motion</li> <li>Linear and circular motion</li> <li>relation</li> </ul> | <ul> <li>Define projectile motion</li> <li>Relate components of projectile motion.</li> <li>Maximum height Range and maximum time</li> <li>Describe various applications of projectile motion.</li> <li>Define angular displacement, angular velocity and angular acceleration and express angular displacement in radians. Solve problems by using S= r θ and v=r ω</li> <li>Describe qualitatively motion in a curved path due to a perpendicular force.</li> <li>Derive and use centripetal acceleration a = rω², a = v²/r. Solve problems using centripetal force F = mrω², F = mv2/r.</li> <li>Describe situations in which the centripetal acceleration is caused by a tension force, a frictional force, a gravitational force, or a normal force.</li> <li>Describe the equation tanθ = v2/rg, relating banking angle θ to the speed v of the vehicle and the radius of curvature r</li> </ul> |
| Chapter no 5<br>Torque<br>Angular<br>Momentum | <ul> <li>Torque</li> <li>Centre of mass and gravity</li> <li>Equilibrium</li> <li>Location of axis</li> <li>Angular momentum</li> </ul>   | <ul> <li>Define torque.</li> <li>Describe couple and its forces.</li> <li>Determine how Centre of mass and gravity is calculated</li> <li>Describe conditions of equilibrium.</li> <li>Determining location of axis.</li> <li>Describe angular momentum how it is calculated</li> </ul>  |
| Chapter no 6<br>Gravitation                   | <ul><li> Gravitation Law</li><li> Density of earth</li><li> Artificial Gravity.</li></ul>   | <ul> <li>State and explain newtons law of universal gravitation</li> <li>Calculate value of g at altitude</li> <li>Estimate value of g at depth.</li> </ul>  |

|                                      | T   |   |
|--------------------------------------|---|---|
| Chapter no 7<br>Work Power<br>Energy | <ul> <li>Work as Scalar Product of Force and Displacement</li> <li>Work done by a variable force graphical method</li> <li>Kinetic Energy</li> </ul>  | <ul> <li>Find out how to create gravity artificially.</li> <li>Describe the concept of work in terms of the product of force F and displacement d in the direction of force</li> <li>Distinguish between positive, negative and zero work with suitable examples.</li> <li>Calculate the work done from the force displacement graph.</li> <li>Define work by variable force. Calculate the work done from the force displacement graph.</li> <li>Recall the concept of K.E Derive the equation of K.E by using W =f*d</li> </ul>   |
|                                      | <ul> <li>Potential Energy</li> <li>Work done against<br/>Gravitational Field</li> <li>Absolute Potential<br/>energy</li> <li>Escape Velocity</li> <li>Power</li> <li>Work Energy Theorem</li> <li>Transformation of<br/>Energy</li> </ul> | <ul> <li>Recall the concept of potential Energy</li> <li>Derive the equation of P.E from W = F. d</li> <li>Show that the work done in gravitational field is independent of path</li> <li>Calculate gravitational potential energy at a certain height due to work against gravity</li> <li>Describe that the gravitational PE is measured from a reference level and can be positive or negative, to denote the orientation from the reference level. 5.6.2 Use equations of absolute potential energy to solve problems</li> <li>Explain the concept of escape velocity in term of gravitational constant G, mass m and radius of planet r.</li> <li>Express power as scalar product of force and velocity. Explain that work done against friction is dissipated as heat in the environment.</li> <li>State Work Energy Theorem Utilize work – energy theorem in a resistive medium to solve problems.</li> <li>State law of conservation of energy</li> <li>Explain Law of conservation of energy with the help of suitable examples</li> </ul> |

#### Chapter no 8 Wave motion and sound

- Simple harmonic Motion (SHM)
- Uniform Circular Motion and SHM
- Practical SHM
   Systems Mass Spring &
   Simple Pendolum
- . Energy Conservation in SHM
- Speed of Sound in Air
- Superposition of Sound Waves
- Doppler Effect of Sound

- Describe necessary conditions for execution of simple harmonic motion. Investigate the motion of an oscillator using experimental and graphical method
- Describe necessary conditions for execution of simple harmonic motions.
- Describe that when an object moves in a circle, the motion of its projection on the diameter of the circles is SHM.
- Define the terms amplitude, period, frequency, angular frequency and phase Identify and use the equation;  $a=-\omega 2x$  as the defining equation of SHM.
- Prove that the motion of mass attached to a spring is SHM. Analyze the motion of a simple pendulum is SHM and calculate its time period. Interpret time of the simple pendulum varies with its length
- Describe the interchanging between kinetic energy and potential energy during SHM.
- Explain that speed of sound depends on the properties of medium
- Identify the factors on which speed of sound in air depends. Solve problems using the formula V = V T 273
- Describe the principle of superposition of two waves from coherent sources.
- Describe modes of vibration of strings. Describe formation of stationary waves in vibrating air columns
- Explain the observed change in frequency of a mechanical wave coming from a moving object as it approaches and moves away Recall the applications of Doppler Effect such as radar, sonar, astronomy, satellite, and radar speed traps.
- Outline some cardiac problems that can be detected using the Doppler's effect.

| Chapter no 9<br>Nature of light | <ul> <li>Nature of Light</li> <li>Wave Fronts</li> <li>Huygen's Principle</li> <li>Interference of Light</li> <li>Diffraction</li> </ul> | <ul> <li>Understand electromagnetic spectrum</li> <li>Recall that light is a part of a continuous spectrum of electromagnetic waves</li> <li>Describe the concept of wave fronts and its types</li> <li>State Huygens's Principle and use it to construct wave front after a time interval.</li> <li>State the necessary conditions to observe interference of light.</li> </ul> |
|---------------------------------|--|--|
|                                 |  | <ul> <li>Describe Young's double slit experiment and the evidence it provides to support the wave theory of light.</li> <li>Describe interference pattern produced by Newton rings Describe the parts and working of</li> </ul>  |
|                                 |  | <ul> <li>Michelson Interferometer and its uses.</li> <li>Explain diffraction and identify that interference occurs between waves that have been diffracted.</li> <li>Describe and explain diffraction at a narrow slit.</li> </ul>   |
|                                 |  | Describe the use of a diffraction grating to determine the wavelength of light and carry out calculations using dsinθ=n λ.  Describe the phenomena of diffraction of X-rays  |
|                                 |  | through crystals. Measure the slit separation/<br>grating element 'd' of a diffraction grating by<br>using the known wavelength of laser light.  |
| Chapter no 10                   | • Lenses   | Define types of lenses.  |
| Geometrical optics.             | Linear Magnification     Combination of Lances   | <ul> <li>Describe image formation.</li> <li>Derive thin Lense formula.</li> </ul>  |
| орисэ.                          | Combination of Lenses  | <ul><li>Derive thin Lense formula.</li><li>Defects of Lense.</li></ul>   |
|                                 |  | <ul> <li>Describe construction and working of compound microscope.</li> </ul>  |
|                                 |  | Describe magnification of astronomical and Galileans telescope.  |

## **Ziauddin University Examination Board**

**Grade XI - PHYSICS** 

**Scheme of Assessment** 

Maximum marks: 85

Science (Pre-Engineering, Pre-Medical & Science General Groups)

#### Section 'A': Multiple Choice Questions (20%) 17 marks

(1x17=17)

Multiple Choice Question must be covered complete Syllabus of Education

- Each MCQs carry 1 mark
- Given MCQs will be = 17 MCQs
- All MCQs to be answered

#### Section "B" (Constructed Response questions) (40%) 36 Marks

(9x4=36)

- Short Answer Question must be given from the prescribed Syllabus all content is to be followed.
- Fourteen (14) Short Answer Questions may be given. Each Question having (4 Marks). In this Section Student shall attempt (9 Questions).

#### Section "C" (Extended Response Questions) (40%) 32 Marks (8x4=32)

• Three (03) Questions of (two parts like Question 3.(a)(b), 4.(a)(b) & 5. (a)(b) of 8,8 marks) may be given in this section and (02 Questions) are to be answered and each Question having (16 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    | analain       | solve       | o            | reframe       | dasian      |
|           | explain       |             | analyze      |               | 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     |
| Сору      | 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       |          |              |            |             |

## HSSC PART I EXAMINATION MARKS BREAKUP GRID FOR EXAMINATION 2025

#### **GROUP: PRE-MEDICAL**

| SUBJECT       | THEORY | РВА | TOTAL |
|---------------|--------|-----|-------|
| ENGLISH       | 100    | -   | 100   |
| URDU NORMAL / | 100    | -   | 100   |
| URDU EASY     |        |     |       |
| ISLAMIYAT /   | 50     | -   | 50    |
| ETHICS        |        |     |       |
| PHYSICS       | 85     | 15  | 100   |
| CHEMISTRY     | 85     | 15  | 100   |
| BIOLOGY       | 85     | 15  | 100   |
| TOTAL         | 505    | 45  | 550   |

### **GROUP: PRE-ENGINEERING**

| SUBJECT       | THEORY | РВА | TOTAL |
|---------------|--------|-----|-------|
| ENGLISH       | 100    | -   | 100   |
| URDU NORMAL / | 100    | -   | 100   |
| URDU EASY     |        |     |       |
| ISLAMIYAT /   | 50     | -   | 50    |
| ETHICS        |        |     |       |
| PHYSICS       | 85     | 15  | 100   |
| CHEMISTRY     | 85     | 15  | 100   |
| MATHEMATICS   | 100    |     | 100   |
| TOTAL         | 520    | 30  | 550   |

## **GROUP: GENERAL SCIENCE**

| SUBJECT          | THEORY | РВА | TOTAL |
|------------------|--------|-----|-------|
| ENGLISH          | 100    | -   | 100   |
| URDU NORMAL /    | 100    | -   | 100   |
| URDU EASY        |        |     |       |
| ISLAMIYAT /      | 50     | -   | 50    |
| ETHICS           |        |     |       |
| PHYSICS          | 85     | 15  | 100   |
| COMPUTER SCIENCE | 75     | 25  | 100   |
| MATHEMATICS      | 100    |     | 100   |
| TOTAL            | 510    | 40  | 550   |

## **GROUP: COMMERCE**

| SUBJECT       | THEORY | РВА | TOTAL |
|---------------|--------|-----|-------|
| ENGLISH       | 100    | -   | 100   |
| URDU NORMAL / | 100    | -   | 100   |
| URDU EASY     |        |     |       |
| ISLAMIYAT /   | 50     | -   | 50    |
| ETHICS        |        |     |       |
| ECONOMICS     | 75     | -   | 75    |
| P.O.C         | 75     | -   | 75    |
| ACCOUNTING    | 100    | -   | 100   |
| BUSINESS      | 50     |     | 50    |
| MATHEMATICS   |        |     |       |
| TOTAL         | 550    |     | 550   |

## **GROUP: HUMANITIES**

### (Any Three Electives)

| SUBJECT          | THEORY | РВА | TOTAL |
|------------------|--------|-----|-------|
| ENGLISH          | 100    | -   | 100   |
| URDU NORMAL /    | 100    | -   | 100   |
| URDU EASY        |        |     |       |
| ISLAMIYAT /      | 50     | -   | 50    |
| ETHICS           |        |     |       |
| COMPUTER SCIENCE | 75     | 25  | 100   |
| ISLAMIC STUDIES  | 100    |     | 100   |
| MATHEMATICS      | 100    | -   | 100   |
| SOCIOLOGY        | 100    |     | 100   |
| ECONOMICS        | 100    |     | 100   |
| EDUCATION        | 100    |     | 100   |
| CIVICS           | 100    |     | 100   |
| NURSING          | 85     | 15  | 100   |
| TOTAL            | 550    |     | 550   |

## **GROUP: MEDICAL TECHNOLOGY**

| SUBJECT       | THEORY | РВА | TOTAL |
|---------------|--------|-----|-------|
| ENGLISH       | 100    | -   | 100   |
| URDU NORMAL / | 100    | -   | 100   |
| URDU EASY     |        |     |       |
| ISLAMIYAT /   | 50     | -   | 50    |
| ETHICS        |        |     |       |
| MICROBIOLOGY  | 85     | 15  | 100   |
| HEMATOLOGY &  | 85     | 15  | 100   |
| BLOOD BANKING |        |     |       |
| ANATOMY &     | 85     | 15  | 100   |
| PHYSIOLOGY    | 03     | 13  | 100   |
| TOTAL         | 505    | 45  | 550   |

## **GROUP:** PRE-NURSING

| SUBJECT            | THEORY | РВА | TOTAL |
|--------------------|--------|-----|-------|
| ENGLISH            | 100    | -   | 100   |
| URDU NORMAL /      | 100    | -   | 100   |
| URDU EASY          |        |     |       |
| ISLAMIYAT /        | 50     | -   | 50    |
| ETHICS             |        |     |       |
| BIO-CHEMISTRY      | 85     | 15  | 100   |
| FUNDAMENTALS       | 85     | 15  | 100   |
| OF NURSING         |        |     |       |
| ELEMENTARY ANATOMY | 85     | 15  | 100   |
| & MICRO TECHNIQUE  |        |     |       |
| TOTAL              | 505    | 45  | 550   |