

FATIMA GIRLS CADET COLLEGE MURREE

SYLLABUS FOR ENTRY TEST – 1st YEAR – 2026

English

The syllabus has been revised to provide the aspirant candidates an outline of the topics in which they shall be examined in the upcoming Entry test 2025. The main purpose of the targeted topics is to assess the literary, grammatical, comprehension, creative and conceptual abilities of the students in the subject of English. The topics are:-

- Tenses
- Parts of Speech
- Poetic Devices
- Prefix/suffix
- Arrangement of sentences
- Gerunds
- Idioms
- Phrasal Verbs
- Active/ passive
- Narration
- Types of sentences
- Structure of sentences
- Phrase & Clauses
- Singular/plurals
- Spelling Correction
- Words meanings
- Synonyms/antonyms
- Words sentences
- Translation (Urdu to English, English to Urdu)
- Paraphrasing
- Comprehension
- Essay Writing
- Story Writing
- Picture Depiction
- Letter Writing
- Application Writing
- Dialogue Writing

Physics:-

- Unit 10: Simple Harmonic Motion
- Unit 12: Geometrical Optics
- Unit 13: Electrostatics
- Unit 14: Current Electricity
- Unit 15: Electromagnetism
- Unit 18: Nuclear Physics

Chemistry:-

Reference: Chemistry for Grade X (KPK Textbook Board Peshawar)

- Chemical Equilibrium:
 - Reversible reaction & Dynamic Equilibrium,
 - Law of Mass Action, Equilibrium Constant & its Units,
 - Importance and Conditions of Equilibrium.
- Acid Bases and Salts:
 - Various Concept of Acid & bases,
 - pH Scale and pOH Scale,
 - Salts, Neutralization Reaction.
- Organic Chemistry:
 - Organic Compounds, Characteristics, and Uses,
 - Alkanes & Alkyl Radicals,
 - Functional Groups,
 - Homologous Series.
- Hydrocarbons:
 - Alkanes,
 - Alkenes,
 - Alkynes (All Physical, Chemical Properties & Reaction).
- Biochemistry:
 - Carbohydrates,
 - Proteins,
 - Lipids,
 - Vitamins
- Chemical Industries:
 - Metallurgy & Basic metallurgical Operations,
 - Solvay Process,
 - Petroleum Industry.
- Environmental Chemistry:
 - Atmosphere,
 - Air pollution, Acid rain, Ozone
 - Water, Soft & Hard Water,
 - Water Borne Diseases & Effect of Water Pollution.

Maths (For Pre-Engineering Only):-

- **Quadratic Equations:** Solution of Quadratic equations using Factorization, Completing the squares method and Quadratic formula.
- **Theory of Quadratic Equations:** Solve Cube roots, Properties of cube roots of Unity, Proofs involving ω and ω^2 .
- **Variation:** Ratio, proportion and Real life problems based on variations (direct and inverse).

- **Partial Fractions:** with repeated and non-repeated Linear factors, repeated and non-repeated quadratic factors.
- **Sets & Function:** Set theory, Binary relations, Functions & its types.
- **Basic Statistics:** Calculate Arithmetic mean, Median, Mode, and Geometric mean & Harmonic mean for Un-grouped & Grouped data. Calculate Range, variance & standard deviation for Un-grouped & Grouped data
- **Trigonometry:** Trigonometric ratios and their real life application.
- **Reference: Mathematics for Grade X** (KPK Textbook Board Peshawar)

Biology (For Pre-Medical Only):-

- Homeostasis
- Coordination and control
- Support and movement
- Biotechnology.
- Inheritance

FATIMA GIRLS CADET COLLEGE MURREE

SYLLABUS FOR CLASS CLASS 8th (ENTRY TEST – 2026)

English

The syllabus has been revised to provide the aspirant candidates an outline of the topics in which they shall be examined in the upcoming Entry test 2025. The main purpose of the targeted topics is to assess the literary, grammatical, comprehension, creative and conceptual abilities of the students in the subject of English.

- Tenses
- Parts of Speech
- Poetic Devices
- Prefix/suffix
- Arrangement of sentences
- Active/ passive
- Narration
- Types of sentences
- Structure of sentences
- Phrase & Clauses
- Singular/plurals
- Spelling Correction
- Words meanings
- Synonyms/antonyms
- Words sentences
- Translation (Urdu to English, English to Urdu)
- Paraphrasing
- Comprehension
- Essay Writing
- Story Writing
- Picture Depiction

Gen Science

The syllabus has been revised to provide the aspirant candidates an outline of the topics in which they shall be examined in the upcoming Entry test 2024. The topics include chemistry, biology, physics, and technology. For test preparation, students may refer to the KPK Textbook of General Science for Grade VII.

- **Structure of atom:**
 - Sub-atomic Particles
 - Atomic number & Atomic Mass
 - Diagram of Atom Structure (first 18 elements)
 - Ions & its Types
 - Identify the types & number of Elements in Simple Molecules
 - Chemical Formula of Common Substances

- **Chemical Bond**
- **Solution**
 - Type of Solutions
- **Physical & Chemical Changes**
- **Plant System**
 - Photosynthesis
 - Respiration
- **Human Respiration & Circulatory System**
- **Immunity and Diseases**
- **Force & Motion**
 - Distance –Time Graphs
 - Contact band Non-Contact Forces
 - Forces as Action & Reaction pair
- **Waves and Energy**
 - Mechanical & Electromagnetic Waves
 - Transverse Waves & longitudinal Waves
 - Properties of waves
 - Relation Between (i) Frequency And Time Period (ii) Amplitude & Frequency
 - Sound Waves And its properties.
 - Factors Affecting Loudness of Sound
- **Heat And Temperature**
 - Scales
 - Thermal Expansion and its Effects
 - Transfer of Heat (i) Conduction (ii) Convection (iii) Radiation
 - Thermal Insulation
- **Earth & Space**
 - Gravity, Mass, Weight
 - Revolution of Earth
- **Dispersion of light**
 - Refraction of light,
 - Law effects applications,
 - Colours of object

Maths:-

The syllabus has been revised to provide the aspirant candidates an outline of the topics in which they shall be examined in the upcoming Entry test 2024. The main purpose of the targeted topics is to assess the conceptual, analytical and computational abilities of the students in the subject of Mathematics. The use of calculator is strictly prohibited during the examination. For test preparation, students may refer to the KPK Textbook of Mathematics for Grade VII.

➤ **Sets**

Descriptive, Set builder and Tabular from a set. Union, Intersection and difference of two sets. Universal over lapping, disjoint, complement of a set. Commutative, Associative and Distributive laws.

➤ **Rational Numbers**

Addition, Subtraction, Multiplication and division of rational numbers. Additive and multiplicative inverses. Comparison of two rational numbers (greater than or less than).

➤ **Square Root of Positive Number**

Finding square root by Division and Factorization method. Real life problem involving Squares.

➤ **Direct and Inverse Variation**

Difference between Rate and Ratio. Real life problems using unitary and proportion method

➤ **Financial Arithmetic**

Finding Percentage of a number. Problems related to Zakat and Ushr.

➤ **Algebra**

Addition, Subtraction, Multiplication and Division of algebraic expressions. Types of polynomial. Solution of Linear equations. Formula: $(a \pm b)^2 = a^2 \pm 2ab + b^2$ and $a^2 - b^2 = (a + b)(a - b)$

➤ **Properties of Geometric figures**

Finding areas and perimeters of regular figures like Square, Rectangle, Isosceles triangle and circle.

اسلامیات

۱۔ سورۃ فاتحہ (ترجمہ) ۲۔ درود

شریف (ترجمہ)

۳۔ قرآن پاک کی آخری دس^{۱۰} سورتیں)

(ترجمہ)

۴۔ غزوہ بدر

۵۔ غزوہ احد

۶۔ غزوہ خندق ۷۔

فتح مکہ ۱۰۔ حقوق

العباد ۱۲۔ دیانت

داری

۱۴۔ رسول اللہ صلی اللہ علیہ وآلہ وسلم

اغراض و مقاصد:

اردو ہماری قومی زبان ہے، یہ ہماری نصاب کا لازمی حصہ ہے۔ داخلہ کے تحریری امتحان کے اردو نصاب میں طلبہ کی تخلیقی صلاحیتوں کو ان کے ذخیرہ الفاظ، جملوں کی ساخت، املا، انداز تحریر اور اردو زبان و قواعد سے ان کی روشناسی، درست املا اور جوں کو جانچنا، شعر فہمی اور ذخیرہ الفاظ کے مناسب استعمال کے ذریعے طلبہ کی صلاحیتوں کو پرکھنا بنیادی مقاصد میں شامل ہیں۔

سلیبس:

- ۱۔ مضمون نگاری: کسی علمی، معاشرتی، مہماتی، تاریخی، تفریحی، تجزیاتی، شخصی اور واقعاتی موضوع پر ایک مدلل اور جامع مضمون لکھنا۔
یہ مضمون ۲۵۰ سے ۴۰۰ الفاظ پر مشتمل ہونا چاہیے۔
- ۲۔ تفہیم: دی گئی عبارت میں کچھ سوالات کے اپنے الفاظ میں جوابات یا عبارت میں سے محاورات اور ضرب الامثال کا انتخاب اور اپنے جملوں میں استعمال یا عبارت میں سے بنیادی قواعد کے سوالات مثلاً، فعل، حرف، اسم کا انتخاب اور مختلف کی الفاظ و قواعد کے مطابق شناخت۔۔
- ۳۔ جملوں کی بناوٹ، مختلف جملوں کو دی گئی ہدایت کے مطابق تبدیل کرنا۔ مثلاً، فعل کی تبدیلی، تذکیر و تانیث کی تبدیلی، واحد جمع کی تبدیلی، سوالیہ، منفی اور بیانیہ تبدیلیاں، مترادف و متضاد الفاظ کی تبدیلیاں۔
- ۴۔ خالی جگہیں پر کرنا، ضرب الامثال، روزمرہ اور محاورات کے مطابق جملوں کی تکمیل۔

FATIMA GIRLS CADET COLLEGE MURREE

Syllabus for Entrance Examination Class VII

English

Identify Part of Speech

Fill in the Blanks (Preposition):

Adjective	:	Synonyms	:
Correct the spelling	:	Comprehension of Passage	:
		Do as Directed	:
		Passive Voice	:
		Translation into English	:
		Translation into Urdu	:
		Composition	:

PART – 2 MATHEMATICS & GENERAL SCIENCE

1. Numbers and Operations

- a. Rational Numbers and Decimal Numbers
 - b. Simplification
 - c. Sets
 - d. Rate, Ratio and Proportion
 - e. Financial Arithmetic
- e. Square and Square Roots

2. Algebra

- a. Number Sequence and Patterns
- b. Algebraic Expressions
- c. Linear Equation

3. Measurements

- a. Distance, Speed and Time
- b. Perimeter and Area

4. Geometry

- a. Practical Geometry
- b. Angles Properties of Polygons
- c. Transformation

5. Data Management

- a. Statistics

GENERAL SCIENCE SECTION

Subjects	Topics
Biology	Plant Systems Human Respiratory and Circulatory Systems Immunity and Diseases
Chemistry	Structure of an Atom Physical and Chemical Changes Chemical Bonds Solution
Physics	Forces and Motion Waves and Energy Heat and Temperature
Space and Technology	Technology in Everyday Life Earth and Space

اسلامیات

- ۱۔ بری عادات سے اجتناب
- ۲۔ (چوری غیبت دھوکہ)
- ۳۔ عدل و احسان و معاملات
- ۴۔ حسن معاشرت
- ۵۔ توحید کی اہمیت اور اثرات
- ۶۔ طہارت اور پاکیزگی
- ۷۔ نماز کی فرضیت اور اہمیت۔
- ۸۔ نبوت اور رسالت
- ۹۔ کلمات طیبہ
- ۱۰۔ سورۃ زلزلہ اور سورۃ عص

Geography

1- Structure of the Earth and Types of Rocks:

- The Earth
- Plate tectonics
- Types of rocks
- The Rock Cycle
- Importance of rocks

Uses of rocks in everyday life

2- Mountains, Plateaus and Valleys:

Mountains.

Difference between mountain and a plateau.

Valley.

Major valleys in Pakistan.

Major types of mountains in Pakistan.

Choice of settlement.

Interdependence-land based.

Grid Reference.

3- Climatic Regions of the World:

Weather.

Climate.

Climatic zones of the world.

Climate change.

Ways to improve the quality of global weather.

Vegetation in different climatic regions.

Climatic zones of Pakistan.

4- Forests of the World:

Natural vegetation and agriculture.

Types of forests.

Layers of rainforests.

Amazon rainforest.

Urban forest.

The role of forests in the economy.

Forests found in Pakistan.

Difference between forests found in the northern and southern parts of Pakistan.

Interdependence of resources(forests) within the global economy.

Technological advancement in forestry.

Deforestation.

Ways to reduce deforestation.

5- Natural Disasters:

Impact of natural disasters on human beings.

Primary and secondary impacts of natural disasters.

Developing countries are most at risk.

Global warming and natural disasters.

Human activities that result in natural disasters.

Ways that can help to deal with natural disasters.

The most common natural disaster in Pakistan.

Ways to preserve natural resources to improve environment.

6- Changing Earth and Human Activity:

Processes involved in changing landforms.

Types of weathering.

Factors affecting weathering.

Erosion.

Types of erosion.

Erosion caused by the human activity.

Weathering and erosion as destructive processes.

Ways to minimize the impacts of weathering and erosion.

History

1- Part 1- Ancient Civilizations (Mesopotamia):

Introduction to History.

Early ages of Human History.

Civilization.

The Mesopotamian Empires.

The Sumerians (4500-2300BCE).

Akkadians (2300-2154BCE).

Babylonians(1895-1531BCE).

Assyrians(1531-539BCE)

Mesopotamian Art and Architecture.

Trade and Occupations in Mesopotamia.

Part 2: Ancient Civilizations (Egyptian Civilization):

The River Nile in Ancient Egyptian Civilization.

First King of Ancient Egypt.

Life of the people of the Egypt civilization.

Religion.

Art and Scripts.

The most Influential Person in the Government.

Pyramids and its Chambers.

Trade and Occupations.

Part 3: Ancient Civilizations(Indus Valley and Chinese Civilization)

Early Settlements in Mehrgarh (7000-2500BCE).

Indus Valley Civilization (3300-1700BCE).

Mohenjo-Daro.

Harappa.

Salient Features of the Indus Valley Civilization.

The Decline of the Indus Valley Civilization.

The Chinese Civilization.

Main Features of the Shang Dynasty (1600-1046BCE).

Main Features of Zhou Dynasty (1046-256BCE).

Significant Characteristics of the Chinese Civilization.

Ancient Chinese Architecture.

The Great Wall of China-one of the Seven Wonders of the World.

2- Persian, Greek and Roman Civilizations:

The Persian Empire (around 550BCE-330BCE).

Ancient Greeks

Around 1200BCE-323BCE).

Ancient Greek Periods.

The Legacy of Greek Culture.

The Roman Empire (Around 753BCE-1453BCE).

3- Ancient India (Aryans, Kushans and Guptas):

The Aryans Origin.

Mauryan dynasty (322-185BCE).

Ashoka (272-232BCE).

Kushans.

Gupta Dynasty (320CE-600CE).

4- Rise of Islamic Civilization:

Conditions of Arabia Before Islam.

Hazrat Muhammad Rasoolullah(S.A.W.W).

Misaq-e-Madina (The Charter of Medina).

Conquest of Mukarramah.

Reforms Implemented by Hazrat Muhammad Rasoolullah (S.A.W.W).

Rashidun Caliphate (Khilafat-e-Rashida).

Hazrat Abu Bakr Siddique.

Hazrat Umar Farooq.

Hazrat Usman Ghani.

Hazrat Ali al-Murtaza.

Features of the pious caliphate.

Computer

1. ICT Fundamentals

- * Definition and components of ICT
- * Types of computer systems (desktop, laptop, tablet, server)
- * Input, output and storage devices
- * Basic software vs hardware concepts

2. Digital Skills

- * File management (create, save, organize folders)
- * Word processing basics (typing, formatting, inserting images)
- * Internet basics (browsers, searching, bookmarking)
- * Basic digital productivity tips (shortcuts, printing)

3. Algorithmic Thinking & Problem Solving

- * What is an algorithm — step-by-step instructions and examples
- * Problem decomposition (breaking problems into smaller parts)
- * Flowcharts and pseudocode (symbols, writing simple flowcharts)
- * Logical reasoning: sequence, selection (if), and iteration (loop) ideas

4. Programming

- * Introduction to a beginner-friendly language/environment (e.g., Scratch or block-based / simple text-based)
- * Writing simple programs: input → process → output
- * Basic programming constructs: variables, conditions (if/else), loops (for/while)
- * Debugging and testing: finding and fixing simple errors

5. Digital Citizenship

- * Online safety and privacy (strong passwords, personal data protection)
- * Netiquette and respectful online behaviour
- * Cyberbullying — recognition and prevention
- * Digital footprint and ethical use of information

6. Entrepreneurship in the Digital Age

- * Basics of entrepreneurship and digital business models
- * Small online business ideas (e.g., e-shop, freelancing, content creation)
- * Using digital tools for business (social media, simple websites, payments)
- * Creativity, idea validation, and basic marketing concepts

FATIMA GIRLS CADET COLLEGE MURREE

Syllabus for Entrance Examination Class 9th

General Science

Chemistry;

Periodic table

- Periods, groups, blocks
- Name and location of 1st 18 elements
- Properties and uses of metals and non metal

Chemical reactions

- Balancing chemical equations
- Types of chemical equations
- Law of conservation of mass
- Exothermic and endothermic reactions
- Ionic and covalent bond

Acids, bases and salts

- Some common sources of acids
- Properties of acids
- Properties of bases/alkalis
- Uses of acids and bases
- Salts, their properties and uses
- pH scale and indicators

Biology;

Ecology

- Energy flow in ecosystem
- Ecological interdependence
- Ecological imbalance
- Environmental problems including factors affecting global warming
- Protection of endangered species

Human Nervous System

- Nerve cell and types of neurons
- Central nervous system including brain and spinal cord
- Voluntary and involuntary actions
- Reflex action and reflex arc

Variations, Heredity and Cell division

- Heredity
- Difference between adaptation and variation
- Basis of heredity
- Watson and crick model of DNA

Biotechnology

- Importance of genetic engineering
- Introducing gene into bacterium
- Fermentation
- Biotechnology products
- Applications of biotechnology

English

- Tenses
- Verb Forms
- Sentence Structure
- Parts of Speech

- Voice
- Modals
- Conditionals
- Articles
- 09. Subject-Verb Agreement
- Narration
- Paragraph writing

- Parts of Speech
- Prefix/suffix
- Arrangement of sentences
- Active/ passive
- Narration
- Types of sentences
- Structure of sentences
- Phrase & Clauses
- Singular/plurals
- Spelling Correction
- Words meanings
- Synonyms/antonyms
- Words sentences
- Translation (Urdu to English, English to Urdu)
- Paraphrasing
- Comprehension
- Essay Writing
- Story Writing
- Picture Depiction

اسلامیات

عقیدہ آخرت

زکوٰۃ

حج

حضرت محمد کی دعوت و تبلیغ

غزوہ خیبر

مساوات

حقوق العباد

حضرت امام حسین

Mathematics

The syllabus has been designed to provide the candidates with a clear outline of the topics on which they will be examined in the **Entry Test for Grade 9**. The main purpose of the targeted content is to assess the conceptual, analytical and computational abilities of students in Mathematics at Grade 8 level. Use of calculator is strictly prohibited during the examination. For preparation, students may refer to the Federal Board (FBISE) Mathematics textbook for Grade 8.

- **Real Numbers**

Properties of real numbers, rational and irrational numbers, representation of real numbers on the number line, laws of exponents, operations on real numbers and simple word problems.

- **Estimation and approximation**

Estimating and rounding off whole numbers, decimals and fractions, significant figures, approximate calculations in the four operations, checking reasonableness of answers in practical situations.

- **Square root and Cube Root**

Squares and cubes of numbers, finding square roots and cube roots by prime factorization and division methods, use of square root and cube root in problem solving, simplification of expressions involving roots.

- **Financial Arithmetic**

Profit, loss and discount; simple interest, hire purchase, commission and tax; percentage increase and decrease; real-life problems related to daily financial transactions.

- **Sets**

Representation of sets in roster and set-builder form, types of sets, subset and power set, universal set and complement, Venn diagrams, union and intersection of sets and their use in simple problem situations.

- **Algebra and Sequence**

Algebraic expressions and their operations, identities and use in simplification, introduction to arithmetic and geometric sequences, n th term of a sequence and related word problems.

- **Linear equation and Inequalities**

Formulation and solution of linear equations in one variable, applications to word problems, graphical representation of simple linear equations, concept of inequality and solution of linear inequalities in one variable.

- **Transformations**

Concept of transformation in the plane, translation, reflection, rotation and enlargement of simple figures, identification of images under given transformations and use of coordinate plane for basic transformations.

- **Geometry**

Properties of parallel lines cut by a transversal, triangles and their congruence, quadrilaterals and their properties, interior and exterior angles of polygons, introduction to circles including chords, arcs, central and inscribed angles.

- **Practical geometry**

Construction of triangles and quadrilaterals with given conditions, construction of parallel and perpendicular lines, angle bisectors and perpendicular bisectors, basic constructions related to circles.

- **Mensuration**

Perimeter and area of triangles, quadrilaterals and circles; surface area and volume of prisms and cylinders; conversion of units; word problems involving composite figures and practical situations.

- **Data Handling**

Collection, organization and presentation of data using tables, bar graphs, histograms and pie charts; interpretation and comparison of data from graphs; calculation of mean, median and mode for ungrouped data.

- **Probability**

Concept of random experiment, sample space and event; expressing probability as a fraction; simple problems on probability using coins, dice, cards and everyday situations.