



Cadet College Thelum

Paper pattern – Entrance Test

Mathematics / Physics / Chemistry / Biology

Four types of questions will be asked as given below:-

Q-1	Fill in the blanks	07 Marks
Q-2	Multiple choice	07 Marks
Q-3	Write short answers of the Questions	20 Marks
Q-4	Two long questions	(8+8 Marks)

GROUPWISE SUBJECTS FOR WRITTEN TEST

Group	Subjects for Test	Total Marks
Pre-Engineering / Computer Science	a. English	50
	b. Urdu	25
	c. Physics	50
	d. Chemistry	50
	e. Mathematics	50
	Total Marks	225
Pre-Medical	a. English	50
	b. Urdu	25
	c. Physics	50
	d. Chemistry	50
	e. Biology	50
	Total Marks	225

سلیبس برائے داخلہ ٹیسٹ – 2019

کل نمبر: 25

مضمون: اردو

(15 نمبر)

کسی ایک موضوع پر مضمون لکھنا (میٹرک لیول)

سوال نمبر 1

(10 نمبر)

کہانی لکھنا میٹرک لیول

سوال نمبر 2



Cadet College Thelum

Syllabus for Entrance Test

Subject: English

Total Marks: 50

Q-1 Essay Writing

10 Marks

One topic will be given from the following: -

1. I want to be an army officer
2. Terrorism
3. Village / City life
4. Foot ball / cricket/ basket ball match
5. Swimming
6. Hazrat Muhammad (PBUH) / Quaid-e-Azam/ Allama Iqbal/ Abdul Sattar Edhi
7. My Ambition
8. A dream

Q-2 Story Writing

07 Marks

One topic will be given from the following: -

1. A sad / happy event of my life
2. A friend in need is a friend indeed
3. A big reward
4. The Muslim brotherhood
5. Honesty is the best policy
6. The foolish stag
7. Robbers turn good citizens

Q-3 Translate in to Urdu

05 Marks

Unseen paragraph will be given

Q-4 Pair of words (Metric Level)

08 Marks

Four Pair of words will be given

Use of Parts of Speech (Metric Level)

20 Marks

Noun / Pronoun / Prepositions/ Verbs / adverb / Adjective / Article (Q 5, 6, 7, 8)

Q-5 Write the correct form of personal pronoun

05 Marks

e.g It was Ali _____ called on you (who, whom)

Q-6 Use a, an or the where necessary

05 Marks

e. g _____ apple has _____ sweet taste.

Q-7 Fill in the blanks with suitable prepositions

05 Marks

e. g I am glad _____ his success.

Q-8 Use the correct form of verb

05 Marks

e. g It _____ since morning (rain)



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Syllabus for Entrance Test

Subject: Mathematics

Total Marks: 50

TITLE	TOPICS
Quadratic Equations	(i). Quadratic equation a. Solution by factorization b. Solution by completing square (ii). Quadratic formula (iii). Equations reducible to Quadratic form (iv). Radical equations
Partial Fractions	(i). Fraction (ii). Resolution of fraction into partial fractions (All Types of resolutions)
Sets and Functions	(i). Sets (types etc) (ii). All operations on sets (iii). De Morgan's Laws (iv). Venn Diagram (v). Ordered pairs and Cartesian product
Introduction to Trigonometry	(i). Introduction (ii). Measurement of an angle (iii). Sector of a circle (iv). Trigonometric Ratios (v). Trigonometric Identities
Real and Complex Numbers	(i). Real numbers (Types) (ii). Properties of Real Numbers (iii). Radicals ,Radicands (iv). Laws of Exponents / Indices (v). Complex numbers (vi). Basic operation on complex numbers
Factorization	(i). Factorization (ii). Remainder Theorem and factor theorem (iii). Factorization of a Cubic polynomial
Practical Geometry	(i). Construction of triangles (ii). Drawing angle bisectors / altitudes / perpendiculars / medians and verify their concurrency (iii). Figures with equal areas



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Syllabus for Entrance Test

Subject: Physics

Total Marks: 50

TITLE	TOPICS
Introduction	(i). Physics and Its Branches (ii). Physical Quantities (iii). International System of Units (iv). Prefixes (v). Scientific Notation
Kinematics	(i). Rest and Motion (Types also) (ii). Scalars and Vectors (iii). Terms Associated with Motion (iv). Equations of Motion (v). Motion of Freely falling Bodies
Dynamics	(vi). Force , Inertia and Momentum (vii). Newton's Laws of Motion (viii). Tension and Acceleration in a string (ix). Force and Momentum (x). Friction (Introduction) a. Rolling Friction b. Braking and skidding c. Advantages and Disadvantages d. Methods of Reducing Friction (xi). Uniform circular Motion
Gravitation	(vi). The force of Gravitation a. Law of Gravitation b. Law of Gravitation and Newton's third law of motion c. Gravitational Field (vii). Mass of the Earth (viii). Variation of 'g' with altitude (ix). Artificial Satellites a. Motion of Artificial Satellites
Properties of Matter	(i). Kinetic Molecular Model of Matter (ii). Density (iii). Pressure (iv). Atmospheric Pressure (v). Pressure in Liquids a. Pascal's Law and its applications (vi). Archimedes Principle (vii). Density of an Orbit (viii). Principle of Floatation a. Ships and Submarines (ix). Elasticity

	<ul style="list-style-type: none"> (x). Hooke's Law (xi). Young's Modules
Geometrical Optics	<ul style="list-style-type: none"> (iv). Reflection of Light (Laws) (v). Spherical Mirrors (Basic Definitions etc) (vi). Image location by Spherical Mirror Formula (vii). Refraction of Light <ul style="list-style-type: none"> a. Laws of Refraction b. Speed of Light in a Medium c. Refractive Index (viii). Total Internal Reflection (ix). Applications of Total Internal Reflection <ul style="list-style-type: none"> a. Totally Internal Reflecting Prism b. Optical Fibre c. Light pipe d. Endoscope (x). Refraction through prism (xi). Lenses <ul style="list-style-type: none"> a. Types / Lens terminology (xii). Image formation by lenses (xiii). Image location by lens Equation
Current Electricity	<ul style="list-style-type: none"> (i). Electric Current <ul style="list-style-type: none"> a. Conventional Current b. The measurement of Current (ii). Potential difference (iii). Electromotive force (e. m. f) and the measurement of potential difference (iv). Ohm's Law (v). Factors affecting resistance (vi). Conductors / insulators (vii). Combination of resistors (viii). Electrical Energy and Joule's Law (ix). Electric Power (x). DC and AC
Information and Communication Technology	<ul style="list-style-type: none"> (i). Components of Computer Based information System (CBIS) (ii). Flow of information (iii). Transmission of Electrical Signal through wires (iv). Transmission of Radio waves through space (v). Transmission of Light Signals through Optical Fibres (vi). Information Storage Devices (vii). Applications of computer <ul style="list-style-type: none"> a. Word Processing b. Data Management (viii). Internet <ul style="list-style-type: none"> a. Services b. Browsers etc (ix). Ricks of ICT to Society and Environment



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Syllabus for Entrance Test

Subject: Chemistry

Total Marks: 50

TITLE	TOPICS
Fundamentals of Chemistry	(v). Branches of Chemistry (vi). Basic definitions (e. g Elements / Compound/Matter/ Mass number etc (vii). Chemical Species (viii). Avogadro's Number and Mole (ix). Chemical Calculations a. Mole - Mass Calculations b. Mole - Particle Calculation
Structure of Atoms	(vi). Theories and Experiments related to atomic structure (Ratherford / Bohr) (vii). Electronic Configuration (viii). Isotopes
Periodic Table and periodicity of properties	(xii). Periodic Table (xiii). Periodic Properties
Structure of Molecules	(x). Why do atoms react? (xi). Chemical Bonds (xii). Types of Bonds (xiii). Intermolecular Forces (xiv). Nature of Bonding and properties
Acids/ Bases and Salts	(vii). Concepts of Acids, Bases a. Arrhenius / Bronsted-Lowry Concepts b. Lewis Concept (viii). General properties of Acids (ix). General properties Bases (x). pH Scale a. Indicators b. Uses c. Measuring of pH of a solution (xi). Salts a. Preparation b. Types of Salts c. Uses of Salts
Organic Chemistry	(xiv). Organic Compounds a. Diversity / Magnitude / Characteristics (xv). Sources of Organic Compounds (xvi). Uses of Organic Compounds (xvii). Alkanes and Alkyle Radicals (xviii). Functional Groups
Atmosphere	(xi). Composition of Atmosphere

	<ul style="list-style-type: none"> (xii). Layers of Atmosphere (xiii). Pollutants <ul style="list-style-type: none"> a. Types of Pollutants b. Sources of Pollutants c. Greenhouse Effect and Global Warming d. Sulphur Compounds e. Effect of SO₂ (xiv). Acid Rain and its Effects (xv). Ozone Depletion and its Effects
Water	<ul style="list-style-type: none"> (x). Introduction (Occurrence) (xi). Properties of Water (xii). Water as solvent (xiii). Soft and hard water <ul style="list-style-type: none"> a. Types of Hardness of water b. Method of removing hardness (xiv). Disadvantages of Hard Water (xv). Water Pollution <ul style="list-style-type: none"> a. Industrial Effluents b. Domestic Effluents c. Agricultural Effluents d. Effects of water pollution (xvi). Water borne Infectious Diseases and prevention



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Syllabus for Entrance Test

Subject: Biology

Total Marks:

50

TITLE	TOPICS
Gaseous Exchange	(x). Gaseous Exchange in plants (xi). Gaseous Exchange in Humans a. The air passageway b. The lungs c. The mechanism of Breathing (xii). Respiratory Disorders (Bronchitis / Emphysema/ Pneumonia/Asthma/Lung Cancer) (xiii). Bad Effects of Smoking
Homeostasis	(ix). Homeostasis in plants (x). Homeostasis in humans (xi). Urinary system of Humans (xii). Disorders of kidney
Coordination and Control	(xiv). Types of Coordination (xv). Human Nervous System (xvi). Receptors in Humans (xvii). Endocrine System, (xviii). Disorders of Nervous System
Inheritance	(xv). Introduction to Genetics (xvi). Chromosomes and genes (xvii). Mendel's Law of inheritance (xviii). Co-Dominance and incomplete Dominance (xix). Variations and Evolution
Man and His Environment	(xii). Leaves of Ecological Organization (xiii). Flow of Materials and Energy in ecosystem (xiv). Interactions in ecosystem (xv). Ecosystem balance and human impact (xvi). Pollution: Consequences and Control (xvii). Conservation of nature
Bio technology	(xix). Introduction to biotechnology (xx). Fermentation (xxi). Genetic Engineering (xxii). Single Cell protein
Pharmacology	(xvi). Medicinal Drugs (xvii). Addictive Drugs (xviii). Antibiotics and vaccines

