

📊 Estimated Mean Score

48.2 (-3.2)

Down from 51.4 in 2025; science rigor increased

🎯 Tier 1 Cutoff (Non-EU)

71.5 – 75.0

Milan IMS, Bologna, Pavia Harvey single-choice

⚡ Science Weight

63.3 %

Biology (34.5 pts) + Chemistry (22.5 pts) = 57/90

🏆 Confirmed Direct Hits

14 Hits (70%+)

Verbatim stems, choices, and exact numerical values

🔗 Meditaliano Predictive Accuracy: 70%+ direct concept alignment and 14 confirmed direct question hits in IMAT 2026!

[View Live Analysis →](#)

< Executive Overview: Structural Evolution & Subject Rigor >

MUR In-House Authoring · Shift from Trick Puzzles to Textbook Mastery

[Structure & Balance: Strict 2024–2025 Continuity] Total 60 questions: Reading (3), General Knowledge (1), Logical Reasoning (5), Biology (23), Chemistry (15), Physics & Math (13). The syllabus framework remained strictly aligned with recent MUR administrations.

[Difficulty & Benchmark Evaluation] The paper demonstrated moderate-to-high standard academic rigor. Cambridge-era convoluted linguistic riddles were completely absent, replaced by solid European university-prep science questions that directly reward deep conceptual understanding and arithmetic execution speed.

[Key Subject Takeaways]

- **Reading & General Knowledge:** Historical continuity of fake news, Sibilla Aleramo's feminist classic *Una Donna*, Carlo Dionisotti's Italian literary geography, and standard definition of the digital economy.
- **Logic & Quantitative:** Pell number recurrence relation (Q5), regular polygon diagonal formula (Q6), proportion equations (Q7), reverse percentages (Q8), and standard categorical syllogisms (Q9). Clean and computation-light.
- **Biology (Core Engine):** Heavy emphasis on pulmonary alveoli, gastric pepsinogen, 70S/80S ribosomes, fluid mosaic membrane, restriction enzymes, Griffith transformation, oxytocin feedback, Photosystem light reactions, mitochondria, and Photo 51.
- **Chemistry & Physics/Math:** 3 redox balancing questions (Q34, Q39, Q40), Mg2+ electron octet, oxoacid strength, sodium acetate hydrolysis, Boyle's isothermal gas law, kinematics, coherent waves, quadratic inequalities, and without-replacement probability (7/22).

< Admissions Cutoff Projections: Tier 1 & Tier 2 Top Medical Faculties >						Based on Meditaliano Historical Cutoff Engine & National Merit Scrolls				
Medical Faculty	Location	EU Merit Ranking Cutoff				Non-EU Quota Cutoff				2026 Forecast
		2023	2024	2025	Trend	2023	2024	2025	Trend	
🏆 TIER 1 (Ultra-Competitive · Global Top Tier)										
University of Milan (Statale - IMS)	Lombardy	46.6	67.8	65.8	▼	60.2	75.7	72.9	▼	EU 66.5~68.0 / Non 73.0~75.5
University of Bologna	Emilia-Romagna	42.6	64.8	60.5	▼	59.1	74.5	71.1	▼	EU 61.0~63.0 / Non 71.5~74.0
University of Pavia (Harvey Course)	Lombardy	38.4	59.1	60.1	▲	53.3	71.5	71.9	▲	EU 60.5~62.5 / Non 72.0~74.0
🌟 TIER 2 (Major Metropolitan & Elite Academic Centers)										
Sapienza University of Rome (Policlinico)	Lazio (Rome)	45.4	65.1	62.4	▼	50.8	73.4	65.8	▼	EU 63.0~65.0 / Non 66.5~69.5
University of Padua (Padova)	Veneto	38.7	63.2	59.8	▼	49.5	71.6	65.4	▼	EU 60.0~62.0 / Non 66.0~69.0
University of Turin (Torino)	Piedmont	42.8	62.0	59.2	▼	48.2	68.5	64.1	▼	EU 59.5~61.5 / Non 65.0~67.5
University of Milano-Bicocca (Bergamo)	Lombardy	41.2	61.5	58.9	▼	51.0	69.8	65.0	▼	EU 59.5~61.5 / Non 65.5~68.0
Rome Tor Vergata	Lazio (Rome)	39.2	60.8	58.1	▼	46.5	67.2	63.5	▼	EU 58.5~60.5 / Non 64.0~66.5

< Admissions Cutoff Projections: Regional Centers & English Dentistry >							Tier 3 (Core Regional Hubs) ~ Tier 4 (Strategic Targets)			
Medical / Dental Faculty	Location	EU Merit Ranking Cutoff				Non-EU Quota Cutoff				2026 Forecast
		2023	2024	2025	Trend	2023	2024	2025	Trend	
📍 TIER 3 (Established Regional Academic Centers)										
University of Naples Federico II	Campania	36.5	58.2	57.1	▼	45.0	65.4	61.5	▼	EU 57.5~59.5 / Non 62.0~64.5
University of Campania 'Luigi Vanvitelli'	Campania	35.0	56.8	55.9	▼	39.8	63.1	59.8	▼	EU 56.5~58.5 / Non 60.5~63.0
University of Parma	Emilia-Romagna	37.2	58.9	57.8	▼	46.2	67.0	63.5	▼	EU 58.0~60.0 / Non 64.0~66.5
Polytechnic University of Marche (Ancona)	Marche	36.8	57.5	56.5	▼	42.5	64.8	61.2	▼	EU 57.0~59.0 / Non 61.5~64.0
University of Bari Aldo Moro	Apulia	35.4	57.1	56.2	▼	41.0	64.2	60.5	▼	EU 56.5~58.5 / Non 61.0~63.5
University of Catania	Sicily	34.8	56.5	55.8	▼	38.5	62.5	59.1	▼	EU 56.0~58.0 / Non 59.5~62.0
🌐 TIER 4 (Strategic Targets, Southern Campuses & English Dentistry)										
University of Messina	Sicily	33.2	55.1	54.3	▼	35.2	59.8	56.5	▼	EU 54.5~56.5 / Non 57.0~60.0
University of Palermo	Sicily	34.1	55.8	55.0	▼	36.8	61.2	58.0	▼	EU 55.5~57.5 / Non 58.5~61.5
University of Siena (Dentistry & Prosthodontics)	Tuscany	32.5	54.2	53.5	▼	33.0	57.5	54.8	▼	EU 53.5~55.5 / Non 55.5~58.5
Sapienza University of Rome (Dentistry)	Lazio (Rome)	35.8	57.0	56.1	▼	39.0	63.5	60.2	▼	EU 56.5~58.5 / Non 61.0~63.5

🎯 < Meditaliano Direct-Hits Audit: 70%+ Concept Match Rate Across 14 Key Questions >

14 Direct Question Hits Cataloged

Because Italian medical admissions (IMAT & TOLC-MED) heavily reuse archetypal questions and underlying reaction models, Meditaliano students enjoyed an extraordinary structural advantage. Confirmed direct hits include: **Q10** (RBC oxygen transport, imatmosi Q23), **Q11** (Alveoli microanatomy, imatmosi Q25), **Q14** (70S/80S ribosomes), **Q19** (Griffith bacterial transformation, mockexam2 Q31 verbatim), **Q21** (Oxytocin feedback, tolmed2001 Q36 identical choices), **Q25/26** (Chloroplast & Mitochondria engines), **Q33** (Mg2+ neon octet), **Q34** (Cu + 8HNO3 redox balancing, TOLC 2015 Q44 identical coefficients 3,8,3,2,4), **Q46** (Isothermal expansion Boyle's law), and **Q58** (Without-replacement probability, mockexam1 Q55 exact value 7/22).

[Non-EU Single-Choice Strategy & Merit Scrolling] Unlike EU applicants who rank preferences across all 23 universities, Non-EU applicants must commit to a single faculty upon pre-enrollment. Top 3 institutions (Milan, Bologna, Pavia) require a minimum target of **72.0–75.0 pts** (maximum 4–5 errors across the test). Tier 2 metropolitan centers (Rome, Padova, Turin, Bicocca) require **66.0–70.0 pts**. Strategic regional universities (Messina, Campania, Siena) remain safe at **56.0–61.0 pts**.

💡 Step-by-Step Worked Solutions & Practice Drills: Access full interactive distractor explanations at meditaliano.com/imat2026

Q# / Level	Tested Concept, Stem & Official Key	Scientific Rationale, Mechanism & Distractor Analysis
Q1 READING Standard	Historical Continuity of Fake News Which statement best summarizes the author's primary controlling thesis? [A] Deceptive misinformation is a continuous historical phenomenon from antiquity to the modern era	The opening thesis states that 'fake news is not new'. Historical examples ranging from the Bible and medieval chronicles to the French Revolution of 1789 ('Great Fear') serve as chronological evidence proving that intentional misinformation is an ongoing feature of human society, not a digital invention. Trap & Distractors: B & E erroneously restrict origins to the Middle Ages or 1789. C contradicts the text regarding human discernment. D claims fake news is uniquely digital.
Q2 READING Standard	Intergenerational Maternal Sacrifice in 'Una Donna' Sibilla Aleramo: What fundamental realization does the protagonist reach regarding her mother? [A] Maternal self-sacrifice forms a monstrous, continuous chain of subjugation across generations	The narrator observes her mother's self-negation and subjugation as a 'monstrous chain' binding women through generations. Her breakthrough realization is that continuing this cycle would sacrifice her own daughter. Trap & Distractors: B fabricates maternal contentment. C misreads domestic harmony. D reduces psychological subjugation to simple financial hardship.
Q3 READING Easy	Urban Polycentrism in Italian Literature Dionisotti: What structural factor underpinned the polycentric development of Italian culture? [A] The autonomy and vitality of urban centers where thinkers and artisans converged	Carlo Dionisotti argues that the rich diversity of Italian literature arose not from isolated country villas, but from autonomous urban centers ('cities') where intellectuals, printers, and craftsmen exchanged ideas freely. Trap & Distractors: B claims centralized royal power (opposite of polycentrism). C suggests rural isolation. D posits singular Vatican cultural hegemony.
Q4 GENERAL CULTURE Easy	Economic Systems & Digital Infrastructure Which term designates an economic system driven primarily by ICT and digital internet platforms? [A] The digital economy	Standard economic terminology defining production, distribution, and consumption enabled by information and communication technologies (ICT) and the global internet. Trap & Distractors: B (Green economy) focuses on ecological sustainability. C (Circular economy) targets closed-loop recycling. D (Gig economy) refers to freelance labor contracts.
Q5 LOGIC Standard	Pell Number Sequence & Recurrence Relation Find the missing term x in the sequence: 1, 2, 5, x , 29, 70, 169 [A] 12	The sequence obeys the second-order linear recurrence relation $a_n = 2a_{n-1} + a_{n-2}$. Thus: $x = 2(5) + 2 = 12$. Verification with the subsequent term: $2(12) + 5 = 29$, which perfectly confirms the pattern. Trap & Distractors: Arithmetic differences (+1, +3, ...) or pure multiplicative steps ($+2x$, $+3x$) break down immediately. Two-step recurrence testing is essential.
Q6 LOGIC Easy	Geometric Diagonal Formula for Regular Polygons Which geometric statement regarding diagonals in polygons is mathematically correct? [A] A hexagon has exactly 9 diagonals	The universal formula for the number of diagonals in an n -sided polygon is $N = n(n - 3) / 2$. For a regular hexagon ($n = 6$): $6(3) / 2 = 9$ diagonals. Trap & Distractors: Pentagon has $5(2)/2 = 5$ diagonals; Octagon has $8(5)/2 = 20$ diagonals. Instant calculation yields the answer in under 15 seconds.
Q7 LOGIC Easy	Algebraic Substitution & Variable Isolation Given $s = 3t$ and $t = 9u$, express u explicitly in terms of s : [A] $u = s / 27$	Substitute the second equation directly into the first: $s = 3(9u) = 27u$. Dividing both sides by 27 yields $u = s / 27$. Trap & Distractors: Arithmetic errors commonly produce $3/9 = 1/3$ ($s/3$) or $27s$. Direct linear substitution is standard low-hanging fruit.
Q8 LOGIC Easy	Reverse Percentage Calculation (Workforce) 80% of staff are full-time, and 20% of full-time staff (48 people) are managers. Total staff? [A] 300 employees	Let total staff be N . $0.80 \times 0.20 \times N = 0.16N = 48$. Solving for N : $N = 48 / 0.16 = 300$. Trap & Distractors: Mistakenly adding $80\% + 20\% = 100\%$ leading to $48/0.2 = 240$. Multiplicative chained percentages must be applied sequentially.
Q9 LOGIC Standard	Categorical Syllogism (Euler-Venn Deduction) 'Some felines eat meat' and 'All carnivores are animals'. Which conclusion is formally valid? [A] Some animals are felines (or some felines are animals)	Particular affirmative (I) + Universal affirmative (A) syllogism. The intersection between Felines and Carnivores is non-empty, and Carnivores are completely contained within Animals. Thus, the intersection of Animals and Felines is non-empty. Trap & Distractors: 'All animals are felines' commits the illicit minor fallacy. 'All felines are animals' assumes unstated empirical premises.
Q10 BIOLOGY Standard	Erythrocyte Specialization & Oxygen Transport Which structural and functional property of mature mammalian red blood cells is correct? [A] Biconcave enucleated structure maximizing surface area for hemoglobin oxygen saturation 🏆 100% Direct Hit: imatmosi Q23 & tolcmed2012 Q52	Mature mammalian erythrocytes lack a nucleus, mitochondria, and ribosomes to accommodate maximal hemoglobin (Hb) concentration. Their biconcave disc shape optimizes the surface-area-to-volume ratio for rapid O2 diffusion across pulmonary and systemic capillary beds. Trap & Distractors: B falsely attributes active mitochondrial oxidative phosphorylation (RBCs rely solely on anaerobic glycolysis). C states they possess nuclei for protein repair.

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Q11 BIOLOGY Easy	Pulmonary Microanatomy & Gas Exchange Site <i>In the human respiratory tract, across which anatomical structure does gas exchange occur?</i> [A] Pulmonary alveoli (alveolar-capillary barrier) 📌 Direct Hit: imatmosi Q25 & tolcm2019 Q38	The microscopic alveoli provide an immense surface area (~100 m ²) composed of ultra-thin Type I pneumocytes and capillary endothelial cells facilitating passive O ₂ and CO ₂ diffusion down partial pressure gradients. Trap & Distractors: Trachea, bronchi, and terminal bronchioles are conducting airways that lack alveolar membranes and do not participate in external respiration.
Q12 BIOLOGY Standard	Flagellar Microtubule Architecture (9+2 Axoneme) <i>What is the structural organization of eukaryotic cilia and flagella?</i> [A] 9 peripheral doublet microtubules surrounding 2 central singlets (9+2 axoneme)	Eukaryotic motile cilia and flagella possess the canonical 9+2 axoneme arrangement driven by dynein motor arms consuming ATP. Basal bodies and centrioles display a 9x3 triplet arrangement. Trap & Distractors: B confuses flagella with centrioles (9x3 triplets). C states actin microfilament core (which characterizes microvilli, not flagella).
Q13 BIOLOGY Easy	Gastric Juice & Pepsinogen Protein Digestion <i>Which enzyme initiates dietary protein hydrolysis in the acidic environment of the stomach?</i> [A] Pepsin (activated from chief-cell zymogen pepsinogen by HCl) 📌 Direct Hit: imatmosi3 Q20 & imatmosi31 Q24	Gastric chief cells secrete inactive pepsinogen, which undergoes autocatalytic cleavage in the low pH (< 2.0) environment generated by parietal cell HCl to form active pepsin, an endopeptidase cleaving peptide bonds. Trap & Distractors: Trypsin and chymotrypsin operate in the alkaline duodenum (pH 7.5–8.0). Amylase hydrolyzes starch, and lipase digests triglycerides.
Q14 BIOLOGY Easy	Ribosomal Subunit Architecture & Translation Site <i>What is the cellular organelle and sedimentation coefficient responsible for mRNA translation in bacteria?</i> [A] 70S ribosomes (composed of 50S and 30S subunits) 📌 Stem Direct Hit: imatmosi22 Q27 & tolcm2014 Q36	Prokaryotes carry 70S ribosomes (30S small subunit + 50S large subunit). Eukaryotes possess cytosolic 80S ribosomes (40S + 60S), though their mitochondria and chloroplasts retain 70S-like ribosomes. Trap & Distractors: Eukaryotic 80S ribosomes are found in the cytoplasm/RER. Confusing subunit arithmetic (50S + 30S = 70S, non-additive Svedberg units) is a classic trap.
Q15 BIOLOGY Easy	Plasma Membrane Structure (Fluid Mosaic Model) <i>Singer & Nicolson: How is the biological cell membrane organized?</i> [A] Phospholipid bilayer with hydrophobic fatty acyl tails facing inward and hydrophilic heads outward 📌 Concept Match: imatmosi25 Q18 & tolcm2016 Q39	Phospholipids are amphipathic: hydrophilic polar phosphate heads orient toward the aqueous intracellular/extracellular spaces, while nonpolar hydrophobic hydrocarbon tails self-assemble into the membrane interior. Trap & Distractors: Reversing polar heads into the core is thermodynamically impossible in an aqueous medium. Pure protein monolayers violate the lipid bilayer model.
Q16 BIOLOGY Standard	Action Potential & Voltage-Gated Ion Channels <i>Which channel gating sequence drives depolarization and repolarization along an unmyelinated axon?</i> [A] Rapid opening of voltage-gated Na⁺ channels followed by delayed activation of voltage-gated K⁺ channels	Threshold stimulus (-55 mV) opens voltage-gated Na ⁺ channels, triggering massive Na ⁺ influx (depolarization up to +30 mV). Na ⁺ channel inactivation and delayed K ⁺ channel opening allow K ⁺ efflux, restoring the resting negative potential. Trap & Distractors: K ⁺ influx would hyperpolarize, not depolarize. Cl ⁻ influx produces inhibitory postsynaptic potentials (IPSP), not action potentials.
Q17 BIOLOGY Easy	Dense Regular Connective Tissue: Tendons vs Ligaments <i>Which anatomical structure transmits contractile force from skeletal muscle to bone?</i> [A] Tendon	Tendons are dense regular connective tissue cords rich in parallel Type I collagen fibers connecting muscle to bone. Ligaments connect bone to bone across articular joints. Trap & Distractors: Ligaments stabilize bone-to-bone joints. Cartilage provides compressive joint cushioning. Synovium secretes lubricating fluid.
Q18 BIOLOGY Standard	Restriction Endonuclease Recognition Sequences <i>What sequence symmetry characterizes the cleavage sites of Type II restriction endonucleases?</i> [A] Palindromic double-stranded DNA sequences reading identically 5' to 3' on complementary strands 📌 Concept Match: tolcm2018 Q34 & imatmosi3 Q25	Type II restriction endonucleases (e.g., EcoRI 5'-GAATTC-3') bind symmetric inverted repeats (palindromes) possessing two-fold rotational symmetry, cleaving phosphodiester backbones to produce sticky or blunt ends. Trap & Distractors: Cleaving single-stranded RNA describes ribonucleases. Non-specific random cleavage describes general nucleases, not restriction enzymes.
Q19 BIOLOGY Standard	Bacterial Transformation (Griffith & Avery Experiments) <i>Griffith's 1928 experiment: What genetic mechanism transformed harmless rough pneumococci into virulent smooth strains?</i> [A] Transformation via direct uptake and incorporation of exogenous naked DNA from heat-killed virulent bacteria 📌 100% Verbatim English Hit: mockexam2 Q31 & tolcm2012 Q41	Frederick Griffith discovered that benign living R-strain <i>Streptococcus pneumoniae</i> acquired the pathogenic polysaccharide capsule phenotype when co-injected with heat-killed S-strain cells. Avery, MacLeod, and McCarty (1944) proved the 'transforming principle' was DNA. Trap & Distractors: Transduction is mediated by bacteriophages. Conjugation requires direct cell-to-cell contact via sex pilus. Mutation occurs independently of heat-killed extract.
Q20 BIOLOGY Easy	Deglutition Mechanism & Epiglottis Function <i>Which cartilaginous flap folds downward during swallowing to prevent food aspiration into the larynx?</i> [A] Epiglottis	During swallowing (deglutition), the larynx elevates and the leaf-shaped elastic epiglottic cartilage folds posteriorly over the laryngeal inlet (glottis), routing the food bolus safely into the esophagus. Trap & Distractors: Uvula seals the nasopharynx upward. Thyroid cartilage forms the Adam's apple. Cricoid cartilage maintains the lower airway ring.

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Q21 BIOLOGY Easy	Endocrine Regulation of Parturition (Oxytocin Feedback) <i>Which neurohypophyseal peptide hormone stimulates uterine myometrial contractions during childbirth?</i> [A] Oxytocin (synthesized in hypothalamus, secreted by posterior pituitary via positive feedback) 🔗 Choices Direct Match: tolcmcd2001 Q36	Oxytocin is synthesized in the paraventricular nuclei of the hypothalamus and stored/released by the posterior pituitary (neurohypophysis). Cervical stretch triggers oxytocin secretion, which amplifies contractions in a self-reinforcing positive feedback loop (Ferguson reflex). Trap & Distractors: Prolactin induces milk synthesis in mammary glands. Progesterone maintains uterine quiescence during gestation. Estrogen primes myometrial gap junctions.
Q22 BIOLOGY Standard	Thermodynamics of Catabolism vs Anabolism <i>Which bioenergetic characteristic distinguishes catabolic metabolic pathways from anabolic pathways?</i> [A] Catabolism involves oxidative breakdown of complex macromolecules into smaller units, releasing ATP (exergonic)	Catabolism (e.g., glycolysis, beta-oxidation) breaks down complex macromolecules into simpler metabolites, generating free energy captured as ATP and reducing equivalents (NADH, FADH ₂). Anabolism is endergonic, consuming ATP for biosynthesis. Trap & Distractors: Anabolism consumes ATP and is reductive. Photosynthesis is anabolic, while glycolysis and the Krebs cycle are catabolic.
Q23 BIOLOGY Easy	Enzymatic Catalysis & Activation Energy (E_a) <i>By what thermodynamic mechanism do biological protein enzymes accelerate reaction velocity?</i> [A] By lowering the activation energy barrier (E_a) without altering the overall free energy change (delta-G)	Enzymes stabilize the high-energy transition state, drastically lowering the activation energy (E _a). They do NOT alter equilibrium constants (K _{eq}) nor the initial and final thermodynamic free energy levels (delta-G). Trap & Distractors: Altering delta-G violates the first and second laws of thermodynamics. Increasing system temperature is a non-enzymatic physical effect.
Q24 BIOLOGY Standard	Chloroplast Sub-compartmentalization & Photosynthesis <i>Where do the light-dependent photochemical reactions and the Calvin-Benson dark reactions occur in chloroplasts?</i> [A] Light reactions in the thylakoid membrane; Calvin cycle in the stroma 🔗 Stem Direct Match: imatmosi2 Q25 & tolcmcd2015 Q39	Photolysis of water, electron transport through Photosystems II and I, and ATP synthesis occur on the thylakoid membrane. CO ₂ fixation and carbohydrate synthesis (Calvin cycle) take place in the soluble stroma. Trap & Distractors: Inverting the locations is the primary distractor. Inner membrane is not the primary site of photosynthetic pigment complexes.
Q25 BIOLOGY Standard	Mitochondrial Chemiosmosis & ATP Synthase <i>What thermodynamic force directly drives ATP synthesis via FoF1-ATP synthase in mitochondria?</i> [A] Proton-motive force created by proton pumping from matrix into the intermembrane space 🔗 Stem Direct Match: tolcmcd1994 Q23 & tolcmcd2012 Q53	Respiratory complexes I, III, and IV pump protons (H ⁺) from the mitochondrial matrix into the intermembrane space, generating an electrochemical gradient (delta-pH + delta-psi). Protons flow back through FoF1-ATP synthase, driving catalytic phosphorylation of ADP to ATP. Trap & Distractors: Substrate-level phosphorylation occurs in glycolysis/Krebs cycle, independent of the proton gradient. Pumping into the matrix is opposite of reality.
Q26 BIOLOGY Standard	Meiotic Recombination & Chiasmata Formation <i>During which phase of meiotic cell division does homologous genetic crossing over occur?</i> [A] Prophase I (specifically during the pachytene sub-stage of synapsis)	Homologous chromosomes pair during zygotene to form bivalents/tetrads via the synaptonemal complex. In pachytene, non-sister chromatids undergo physical reciprocal exchange of DNA segments (crossing over), visible as chiasmata in diplotene. Trap & Distractors: Metaphase I aligns tetrads along the equator. Anaphase I separates homologues. Mitotic prophase does not form bivalents or undergo crossing over.
Q27 BIOLOGY Easy	Chromosomal Theory of Inheritance (Sutton & Boveri) <i>Which cytogenetic principle correlates Mendelian segregation with cellular chromosomal behavior?</i> [A] Boveri-Sutton chromosome theory (genes are physical loci situated along linear chromosomes)	In 1902–1903, Walter Sutton and Theodor Boveri independently recognized that the behavior of homologous chromosomes during meiosis (segregation and independent assortment) mirrors Mendel's hereditary factors. Trap & Distractors: Watson-Crick discovered DNA double helix. Central Dogma was framed by Crick. Hardy-Weinberg deals with population allele equilibrium.
Q28 BIOLOGY Standard	Historical Elucidation of DNA Structure (Photo 51) <i>Which biophysicist produced the X-ray diffraction 'Photo 51' revealing the helical B-form of DNA?</i> [A] Rosalind Franklin (King's College London)	Rosalind Franklin, assisted by Raymond Gosling, captured the historic X-ray diffraction photograph 'Photo 51' in May 1952. The clear 'X' pattern proved the helical conformation, 3.4 nm helical pitch, and outward-facing phosphate backbone. Trap & Distractors: Maurice Wilkins shared the photograph without her consent. Barbara McClintock discovered transposable elements. Dorothy Hodgkin solved insulin and vitamin B12.
Q29 BIOLOGY Easy	DNA Double Helix Complementarity (Chargaff's Rules) <i>If an organism's double-stranded genomic DNA contains 28% Cytosine, what is the percentage of Adenine?</i> [A] 22%	Chargaff's parity rules state that $\%G = \%C$ and $\%A = \%T$. Given $\%C = 28\%$, $\%G = 28\%$ (total G+C = 56%). Remaining A+T = 100% - 56% = 44%. Therefore, $\%A = 44\% / 2 = 22\%$. Trap & Distractors: Confusing A with C (28%) or failing to divide 44% by 2 leads to 44% or 56%. Basic Chargaff rule arithmetic.
Q30 BIOLOGY Standard	Eukaryotic Pre-mRNA Post-Transcriptional Processing <i>Which structural modification is NOT part of nuclear eukaryotic pre-mRNA processing?</i> [A] Direct binding to formylmethionine tRNA in the nucleolus	Standard pre-mRNA processing comprises: 1) 5' 7-methylguanosine cap addition, 2) 3' polyadenylation (poly-A tail, ~200 residues), and 3) spliceosomal intron excision / exon splicing. Formylmethionine (fMet) initiation occurs exclusively in prokaryotes and mitochondria. Trap & Distractors: 5' capping, 3' poly-A tail, and alternative splicing are canonical eukaryotic pre-mRNA processing steps.

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Q31 BIOLOGY Standard	Molecular Pathology of Sickle Cell Anemia What precise point mutation in the beta-globin gene causes sickle cell hemoglobin (HbS)? [A] Missense substitution replacing glutamic acid (hydrophilic) with valine (hydrophobic) at position 6 🔗 Concept Match: tolcmcd2014 Q41	A single nucleotide transversion in codon 6 of the HBB gene (GAG → GTG) substitutes negatively charged, polar glutamic acid for nonpolar, hydrophobic valine. Under low oxygen tension, exposed valine patches polymerize into rigid crystalline fibers distorting erythrocytes into sickled shapes. Trap & Distractors: Nonsense mutation causes truncated non-functional protein (thalassemia). Silent mutation has no phenotypic consequence. Inverting Glu and Val position is a common distractor.
Q32 BIOLOGY Easy	Genetic Code Degeneracy & Wobble Hypothesis What does the term 'degeneracy' (redundancy) mean in the standard biological genetic code? [A] Multiple distinct trinucleotide codons can specify the identical single amino acid	With 64 possible codons (4^3) encoding 20 standard amino acids plus 3 stop codons, most amino acids are encoded by 2 to 6 synonymous codons (e.g., Leucine and Arginine are encoded by 6 codons). The code is degenerate but unambiguous (each codon codes for only one amino acid). Trap & Distractors: Universal code means shared across nearly all life forms. Ambiguous code would mean one codon codes for multiple amino acids (which is false).
Q33 CHEMISTRY Easy	Electronic Configuration of Magnesium Cation (Mg²⁺) What is the ground-state electron configuration of the magnesium ion Mg ²⁺ (Z = 12)? [A] 1s² 2s² 2p⁶ (isoelectronic with Neon, complete valence octet) 🔗 Direct Hit: tolcmcd2013 Q49	Neutral magnesium has 12 electrons ([Ne] 3s²). Losing its two outermost valence 3s electrons generates the divalent cation Mg ²⁺ with 10 electrons: 1s² 2s² 2p⁶ , achieving the noble gas stability of neon. Trap & Distractors: 1s ² 2s ² 2p ⁶ 3s ² is neutral Mg. 1s ² 2s ² 2p ⁵ is an excited or fluoride-like state.
Q34 CHEMISTRY Standard	Redox Balancing: Copper and Nitric Acid Balance the reaction: a Cu + b HNO ₃ → c Cu(NO ₃) ₂ + d NO + e H ₂ O. What is the integer coefficient sum? [A] 3 Cu + 8 HNO₃ → 3 Cu(NO₃)₂ + 2 NO + 4 H₂O (Coefficients: 3, 8, 3, 2, 4) 🔗 100% Identical Question: tolcmcd2015 Q44 / tolcmcd2019 Q46 (Coeffs 3,8,3,2,4)	Oxidation half-reaction: Cu → Cu²⁺ + 2e⁻ (×3). Reduction half-reaction: NO₃⁻ + 4H⁺ + 3e⁻ → NO + 2H₂O (×2). Total 6 electrons exchanged. Adding 6 spectator nitrate ions to balance Cu(NO ₃) ₂ gives 8 HNO ₃ total on the left: 3Cu + 8HNO₃ → 3Cu(NO₃)₂ + 2NO + 4H₂O . Trap & Distractors: Using concentrated nitric acid produces NO ₂ (1:4:1:2:2). Here dilute HNO ₃ produces NO gas.
Q35 CHEMISTRY Standard	Chemical Kinetics & Collision Theory According to Arrhenius collision theory, why does raising temperature increase reaction velocity? [A] It increases the fraction of molecular collisions possessing kinetic energy greater than or equal to E_a	Per the Maxwell-Boltzmann distribution, temperature elevation shifts the molecular velocity distribution to the right, exponentially expanding the population of reactant molecules with energy exceeding the activation energy threshold (E ≥ E_a). Increased collision frequency plays a secondary role. Trap & Distractors: Temperature does not decrease the activation energy (only catalysts alter E _a). Temperature increases collision frequency, but that accounts for only ~2% of the rate surge.
Q36 CHEMISTRY Standard	Le Chatelier's Principle & Exothermic Gas Equilibrium For the exothermic synthesis N ₂ (g) + 3H ₂ (g) ⇌ 2NH ₃ (g) (ΔH < 0), which condition shifts equilibrium toward NH ₃ ? [A] Decreasing temperature and increasing system pressure	Exothermic reaction: lowering temperature shifts equilibrium to the right to produce heat. Gas mole numbers decrease from 4 moles of reactants to 2 moles of products (Δn = -2); increasing pressure shifts equilibrium toward fewer gas moles (right). Trap & Distractors: Increasing temperature shifts an exothermic reaction left. Adding an inert gas at constant volume has no effect on partial pressures or equilibrium.
Q37 CHEMISTRY Standard	Periodic Trends: First Ionization Energy Which element exhibits the highest first ionization energy among the following? [A] Fluorine (F)	First ionization energy increases across a period from left to right (due to rising effective nuclear charge Z _{eff} and shrinking atomic radius) and decreases down a group (due to increased electron shielding). Halogen fluorine (Period 2) possesses an exceptionally high ionization potential (1681 kJ/mol), exceeded only by noble gases (He, Ne, Ar). Trap & Distractors: Chlorine has higher shielding (Period 3). Oxygen has lower Z _{eff} and slight pairing repulsion in the 2p ₄ subshell. Nitrogen has a stable half-filled 2p ₃ shell but is lower than F.
Q38 CHEMISTRY Standard	Salt Hydrolysis & Aqueous Solution pH What is the acid-base nature of an aqueous 0.1 M solution of sodium acetate (CH ₃ COONa)? [A] Weakly basic (pH > 7) due to acetate anion hydrolysis 🔗 Concept Match: tolcmcd2017 Q45	Sodium acetate is a salt of a weak acid (CH ₃ COOH) and a strong base (NaOH). The conjugate base acetate undergoes hydrolysis: CH₃COO⁻ + H₂O ⇌ CH₃COOH + OH⁻ , generating excess hydroxide ions and producing a basic solution (pH ≈ 8.9). Trap & Distractors: Salts of strong acid + strong base (NaCl) are neutral (pH 7). Salts of strong acid + weak base (NH ₄ Cl) are acidic.
Q39 CHEMISTRY Standard	Redox Reaction: Lead(II) and Iron(III) Bromides Balance the reaction: PbBr ₂ + FeBr ₃ → PbBr ₄ + FeBr ₂ . What is the stoichiometric ratio PbBr ₂ :FeBr ₃ ? [A] 1 : 2 (1 PbBr₂ + 2 FeBr₃ → 1 PbBr₄ + 2 FeBr₂)	Oxidation: Pb(II) → Pb(IV) + 2e⁻ (2-electron loss). Reduction: Fe(III) + e⁻ → Fe(II) (1-electron gain). To balance electron transfer, iron species must be multiplied by 2, yielding 1 PbBr ₂ + 2 FeBr ₃ → 1 PbBr ₄ + 2 FeBr ₂ . Trap & Distractors: 1:1 ratio fails to balance electrons (2 lost vs 1 gained). 2:1 ratio would represent 4 electrons transferred without sufficient oxidant.
Q40 CHEMISTRY Standard	Disproportionation (Auto-oxidation-reduction) Reaction Which chemical equation represents a classic disproportionation (dismutation) redox reaction? [A] Cl₂ + 2 NaOH → NaCl + NaClO + H₂O (Chlorine 0 is simultaneously reduced to -1 and oxidized to +1)	Disproportionation occurs when a single element in an intermediate oxidation state acts simultaneously as both oxidizing and reducing agent. Elemental chlorine (0 in Cl ₂) is reduced to chloride (-1 in NaCl) and oxidized to hypochlorite (+1 in NaClO). Trap & Distractors: Standard single or double displacement reactions involve two separate elements changing oxidation state, not a single element splitting.

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Q# / Level	Tested Concept, Stem & Official Key	Scientific Rationale, Mechanism & Distractor Analysis
Q41 CHEMISTRY Standard	Acid Strength of Chlorine Oxoacids Rank the following chlorine oxoacids in order of increasing acid dissociation constant (Ka): [A] $\text{HClO} < \text{HClO}_2 < \text{HClO}_3 < \text{HClO}_4$ (Hypochlorous < Chlorous < Chloric < Perchloric)	As the number of electronegative terminal oxygen atoms increases from 1 to 4, electron density is pulled away from the O-H bond, and the resulting conjugate oxoanion achieves greater resonance delocalization of negative charge. Perchloric acid (HClO_4) is a superacid. Trap & Distractors: Inverting the order confuses bond dissociation energy of binary hydrogen halides ($\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$) with oxoacid inductive resonance effects.
Q42 CHEMISTRY Easy	Intermolecular Forces & Boiling Point Trends Why does ethanol ($\text{C}_2\text{H}_5\text{OH}$) exhibit a substantially higher boiling point than dimethyl ether ($\text{CH}_3\text{-O-CH}_3$)? [A] Intermolecular hydrogen bonding formed between hydroxyl groups in ethanol	Both ethanol and dimethyl ether share the identical molecular formula ($\text{C}_2\text{H}_6\text{O}$, $\text{MW} = 46.07 \text{ g/mol}$). Ethanol possesses a polar O-H bond capable of forming strong intermolecular hydrogen bonds ($\text{bp} = +78.4^\circ\text{C}$), whereas dimethyl ether exhibits only weak dipole-dipole interactions ($\text{bp} = -24^\circ\text{C}$). Trap & Distractors: London dispersion forces are nearly identical due to identical molecular weights. Covalent intramolecular bond strength does not determine boiling point.
Q43 CHEMISTRY Easy	Organic Functional Groups: Carboxylic Acid Derivatives What functional group is formed by the condensation esterification of a carboxylic acid and an alcohol? [A] Ester ($-\text{COO}-$)	Fischer esterification: reaction between a carboxylic acid (R-COOH) and an alcohol (R'-OH) in the presence of an acid catalyst produces an ester (R-COO-R') with the elimination of water. Trap & Distractors: Condensation of two alcohols produces an ether (R-O-R). Acid + amine produces an amide (R-CO-NH-R).
Q44 CHEMISTRY Easy	Hydrocarbon Nomenclature & Unsaturation (Alkenes) Which acyclic hydrocarbon formula represents a monounsaturated alkene possessing one $\text{C}=\text{C}$ double bond? [A] C_4H_8 (General formula C_nH_{2n})	Acyclic alkanes follow $\text{C}_n\text{H}_{2n+2}$ (e.g., C_4H_{10}). Alkenes with one double bond or monocyclic cycloalkanes follow C_nH_{2n} (e.g., C_4H_8). Alkynes follow $\text{C}_n\text{H}_{2n-2}$ (e.g., C_4H_6). Trap & Distractors: C_4H_{10} is butane (alkane). C_4H_6 is butyne or butadiene. C_4H_4 contains multiple degrees of unsaturation.
Q45 CHEMISTRY Standard	Structural Isomerism of Carbonyls ($\text{C}_3\text{H}_6\text{O}$) Which pair of constitutional functional-group isomers shares the molecular formula $\text{C}_3\text{H}_6\text{O}$? [A] Propanal (aldehyde) and Propanone / Acetone (ketone)	Degree of unsaturation $\text{U} = 3 + 1 - 6/2 = 1$. A single carbonyl group ($\text{C}=\text{O}$) satisfies this unsaturation: three carbons form either the terminal aldehyde propanal ($\text{CH}_3\text{-CH}_2\text{-CHO}$) or the internal ketone acetone ($\text{CH}_3\text{-CO-CH}_3$). Trap & Distractors: Propanol ($\text{C}_3\text{H}_8\text{O}$) is saturated. Propanoic acid ($\text{C}_3\text{H}_6\text{O}_2$) contains two oxygens.
Q46 PHYSICS Standard	Thermodynamics: Isothermal Gas Expansion (Boyle's Law) During a reversible isothermal expansion of an ideal gas, how do internal energy (U) and pressure (P) behave? [A] Internal energy remains constant ($\Delta\text{U} = 0$) while gas pressure decreases inversely with volume 🔗 Formula & Logic Match: mockexam1 Q51 & tolcmed2020 Q48	For an ideal gas, internal energy depends solely on temperature: $\text{U} = (f/2) n R T$. In an isothermal process ($T = \text{constant}$), $\Delta\text{U} = 0$. By Boyle's law ($P \cdot V = \text{constant}$), expanding volume V causes pressure P to drop proportionally. Trap & Distractors: Isobaric expansion keeps pressure constant but raises temperature. Adiabatic expansion has no heat exchange ($Q = 0$) and cools the gas.
Q47 CHEMISTRY Easy	Reaction Enthalpy (Exothermic Processes) Which thermodynamic property characterizes an exothermic chemical reaction at constant pressure? [A] Enthalpy change is negative ($\Delta\text{H} < 0$), releasing thermal energy to the surroundings	In an exothermic process, the total enthalpy of the products is lower than that of the reactants: $\Delta\text{H} = \text{H}_{\text{products}} - \text{H}_{\text{reactants}} < 0$. The excess chemical bond energy is released as heat to the surrounding environment. Trap & Distractors: Endothermic reactions absorb heat ($\Delta\text{H} > 0$). Spontaneity depends on Gibbs free energy ($\Delta\text{G} = \Delta\text{H} - T \Delta\text{S}$), not enthalpy alone.
Q48 PHYSICS Easy	Kinematics: Velocity Vector Definition How is instantaneous velocity defined in classical Newtonian kinematics? [A] The first time derivative of the position displacement vector ($\text{v} = \text{dr}/\text{dt}$)	Velocity is a vector quantity defined as the rate of change of displacement with respect to time: $\text{v}(\text{t}) = \lim_{\Delta\text{t} \rightarrow 0} \{\Delta\text{r} / \Delta\text{t}\} = \text{dr}/\text{dt}$. Speed is the scalar magnitude of velocity. Trap & Distractors: Total distance divided by time is average scalar speed, not instantaneous vector velocity. Derivative of velocity is acceleration.
Q49 PHYSICS Standard	Galilean Relativity & Relative Velocity Train A travels north at 80 km/h; Train B travels south at 60 km/h on parallel tracks. Velocity of A relative to B? [A] 140 km/h directed northward	Galilean velocity addition vector formula: $\text{v}_{\text{A/B}} = \text{v}_\text{A} - \text{v}_\text{B}$. Defining north as positive: $\text{v}_\text{A} = +80 \text{ km/h}$, $\text{v}_\text{B} = -60 \text{ km/h}$. Therefore: $\text{v}_{\text{A/B}} = 80 - (-60) = +140 \text{ km/h}$ northward. Trap & Distractors: Subtracting magnitudes ($80 - 60 = 20 \text{ km/h}$) applies only when objects move in the identical direction.
Q50 PHYSICS Easy	Kinetic Energy Calculation with SI Unit Conversion Calculate the kinetic energy of a 20 kg projectile traveling at a uniform velocity of 36 km/h: [A] 1,000 Joules (1.0 kJ)	First convert velocity to SI units: $36 \text{ km/h} = 36,000 \text{ m} / 3,600 \text{ s} = 10 \text{ m/s}$. Kinetic energy formula: $\text{E}_\text{k} = 1/2 m \text{v}^2 = 1/2 (20 \text{ kg}) (10 \text{ m/s})^2 = 10 \times 100 = 1,000 \text{ J}$. Trap & Distractors: Failing to convert km/h to m/s yields an incorrect value of $1/2(20)(36)^2 = 12,960 \text{ J}$. Unit conversion is the primary trap.

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Q# / Level	Tested Concept, Stem & Official Key	Scientific Rationale, Mechanism & Distractor Analysis
Q51 PHYSICS Standard	Conservation of Mechanical Energy & Non-Conservative Friction A block slides down a rough incline with kinetic friction. How does mechanical energy change? [A] Mechanical energy decreases because kinetic friction performs negative work, dissipating energy as heat	Gravity is a conservative force, but friction is non-conservative: $\Delta E_{\text{mech}} = W_{\text{friction}} = -f_k \cdot d < 0$. Total energy is conserved globally, but mechanical energy (kinetic + potential) is converted irreversibly into thermal energy. Trap & Distractors: Mechanical energy is conserved only in frictionless systems. Friction cannot increase mechanical energy.
Q52 PHYSICS Standard	Hydrostatic Pressure (Stevin's Law) At approximately what water depth does hydrostatic gauge pressure equal 1 atmosphere (101.3 kPa)? [A] Approximately 10 meters (10.33 m)	Stevin's hydrostatic pressure formula: $P = \rho g h$. Setting $P = 101,325 \text{ Pa}$ with freshwater density $\rho = 1,000 \text{ kg/m}^3$ and $g \approx 9.81 \text{ m/s}^2$: $h = 101,325 / (1,000 \times 9.81) \approx 10.33 \text{ m}$. Standard clinical physiology benchmark. Trap & Distractors: 1 meter generates only ~10 kPa. 100 meters produces ~10 atm of hydrostatic pressure.
Q53 PHYSICS Easy	Electrostatics: Charge Neutrality of Normal Atoms Why does an un-ionized neutral atom exhibit zero net electric charge? [A] The number of positively charged nuclear protons equals the number of orbital electrons	The elementary charge of a proton (+e = +1.602 × 10 ⁻¹⁹ C) exactly balances the negative charge of an electron (-e). In a neutral atom, $N_{\text{protons}} = N_{\text{electrons}}$, yielding a net charge of zero. Neutrons carry zero electric charge. Trap & Distractors: Neutrons having charge is physically false. Protons and electrons possessing differing magnitudes of charge violates fundamental quantum invariance.
Q54 PHYSICS Standard	Wave Interference & Coherent Sources What physical condition must two wave sources satisfy to produce stable, stationary interference patterns? [A] Coherence (identical frequency and constant, time-invariant phase difference)	For stationary spatial interference fringes (Young's double-slit experiment), the wave sources must be coherent: they must have the same wavelength/frequency and maintain a fixed, constant relative phase difference over time ($\Delta\phi = \text{constant}$). Trap & Distractors: Identical amplitudes alone without phase coherence produce incoherent washed-out irradiance. Variable phase differences shift fringes continuously.
Q55 MATHEMATICS Easy	Quadratic Inequality Solution Set Solve the quadratic inequality: $x^2 - 6x + 5 \leq 0$ [A] $1 \leq x \leq 5$ (Closed interval [1, 5])	Factor the quadratic trinomial: $(x - 1)(x - 5) \leq 0$. Because the leading coefficient is positive (+1), the upward-opening parabola lies below or on the x-axis between its real roots: $1 \leq x \leq 5$. Trap & Distractors: Exterior intervals ($x \leq 1$ or $x \geq 5$) solve $x^2 - 6x + 5 \geq 0$. Inverting signs yields -5 and -1.
Q56 MATHEMATICS Easy	Exponential Function Domain and Positivity For what real values of x does the inequality $e^{\lambda x} > 0$ hold true? [A] All real numbers ($x \in \mathbb{R}$)	The base is Euler's number $e \approx 2.71828 > 0$. The exponential function $f(x) = e^{\lambda x}$ has domain $(-\infty, +\infty)$ and range strictly positive $(0, +\infty)$. It is strictly positive for every real number x. Trap & Distractors: $x > 0$ is a common confusion with $e^{\lambda x} > 1$. For $x < 0$, $e^{\lambda x}$ approaches 0 asymptotically but remains strictly positive.
Q57 MATHEMATICS Easy	Analytic Geometry: Circle Passing Through Origin Which characteristic property applies to the circle $x^2 + y^2 + 5x + 4y = 0$? [A] It passes directly through the origin (0, 0)	The constant term c in the general circle equation $x^2 + y^2 + Dx + Ey + F = 0$ is zero ($F = 0$). Substituting $(0, 0)$: $0^2 + 0^2 + 5(0) + 4(0) = 0$, proving it contains the origin. Center is at $(-2.5, -2)$ and radius $r = \sqrt{(2.5^2 + 2^2)} = \sqrt{10.25}$. Trap & Distractors: Origin is not the center (center is $(-2.5, -2)$). Radius is not 5 or 4.
Q58 MATHEMATICS Standard	Combinatorics & Without-Replacement Probability An urn contains 7 blue and 5 red marbles (12 total). Two marbles are drawn without replacement. P(both blue)? [A] 7 / 22 (Exact numerical match) 🏆 Exact Numerical Match: mockexam1 Q55 (P = 7/22)	First draw probability: $7 / 12$. With one blue removed, 6 blue remain out of 11 total marbles. Second draw probability: $6 / 11$. Multiplication rule of dependent events: $P = (7 / 12) \times (6 / 11) = 42 / 132 = 7 / 22$. Trap & Distractors: With replacement yields $(7/12)^2 = 49/144$. Simple addition yields $7/12 + 6/11$.
Q59 MATHEMATICS Easy	Parabola Parameter from Coordinate Point The parabola $y = kx^2 - x + 30$ passes through the point $(5, 0)$. Find the value of constant k: [A] $k = -1$	Substitute coordinates $x = 5$ and $y = 0$ into the quadratic equation: $0 = k(5)^2 - (5) + 30 \Rightarrow 0 = 25k + 25 \Rightarrow 25k = -25 \Rightarrow k = -1$. Trap & Distractors: Sign error gives $k = +1$. Forgetting to square 5 gives $5k + 25 = 0$ ($k = -5$).
Q60 MATHEMATICS Easy	Logarithmic Definition & Exponential Inversion Solve for x in the common logarithmic equation: $\log_{10}(x) = 6$ [A] $x = 1,000,000$ (10^6)	By definition of logarithms: $\log_b(x) = y \Leftrightarrow x = b^{\lambda y}$. Here the base is 10, so $x = 10^6 = 1,000,000$. The argument $x > 0$ is satisfied. Trap & Distractors: $x = 60$ confuses power with multiplication (10×6). $x = 6^{10}$ confuses base with exponent.



IMAT PREPARATION ECOSYSTEM

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For IMAT 2026, Meditaliano cross-checked the official 60-question paper against 76 internal training files and about 4,384 questions. The strongest recurring patterns appeared in Biology, Chemistry and quantitative science.

6,000+

shuffled practice questions

20+

full-length predicted mocks

15 years

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200 days

structured study routine

Adaptive Practice

Topic-tagged drills, instant explanations and weak-point review.

Past Papers

Official IMAT questions, worked solutions and recurring-mechanism analysis.

Predicted Mocks

100-minute simulations with rank / cutoff-oriented analytics.

Science Hub & Mentoring

Video masterclasses, formula books and private coaching options.

2026 direct-hit examples

Evidence from the cross-check, not generic marketing

Q10 - RBC oxygen transport

[imatmosi Q23](#) and related sets

Q46 - isothermal gas law

[mockexam1 Q51](#) / [imatmosi Q54](#)

Q19 - bacterial transformation

[mockexam2 Q31](#)

Q58 - without-replacement probability

[mockexam1 Q55](#) / [mockexam2 Q50](#)

Q34 - Cu + HNO₃ balancing

[tolcmed2015 Q44](#) / [tolcmed2019 Q46](#)

Q14 / Q25 / Q26 - cell biology

[Repeated across IMATMOGI and TOLC-MED sets](#)

A closed-loop preparation system

Built to turn mistakes into targeted practice

1 · Learn

Science Hub, formula books and worked examples establish the model.

2 · Drill

Timed topic sets build speed and expose weak retrieval.

3 · Diagnose

Error-log analytics identifies recurring distractors and knowledge gaps.

4 · Stress-test

Full mocks rehearse pacing, skipping and score conversion under pressure.

Why this matters for 2026: Direct-hit examples are useful, but the larger advantage comes from recognising the same mechanism when the wording, variable names or context changes.

2027 preparation blueprint

Condensed from the longer Meditaliano curriculum tracks

Foundation

Biomolecules, stoichiometry, algebra, cell structure and mechanics.

Integration

Respiration, genetics, physiology, equilibrium, circuits and probability.

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Build pattern recognition before exam day.

Question bank + mocks + Science Hub + mentoring in one preparation system.

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What changes as support increases

Platform access stays central; human guidance becomes more frequent

	Premium	PLUS	PRO	ULTRA
Question bank + mocks	Full	Full	Full	Full
Private lessons	—	Weekly	2x weekly	3x weekly
WhatsApp support	Platform	Daily desk	Direct tutor	Priority faculty
Admissions coordination	Updates	Guidance	Choice support	Full concierge

Inside the platform

Tools designed to connect study, practice and feedback

Question engine

6,000+ topic-tagged drills and shuffled mixed sets.

Error analytics

Track weak topics, recurring distractors and review priorities.

Timed simulations

Full mock pacing and accelerated 85-minute stress tests.

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University, visa and university-choice guidance at higher tiers.

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- Plans & Pricing
- Biology Practice
- Chemistry Practice
- Mock Exam 2

Start with the platform. Add human support when you need it.

Use the question bank to identify weaknesses, then choose the coaching intensity that matches your timeline.

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