

TEST MANTHAN — PRD MODULE 1

Product Identity & Problem Statement

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Product: Test Manthan

Parent Company: PsiGenei EdTech Services LLP (Brand: PsiGenei)

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1.1 PRODUCT IDENTITY

Product Name

Test Manthan (टेस्ट मंथन)

The name draws from *Samudra Manthan* (समुद्र मंथन) — the mythological churning of the ocean to extract *amrit* (nectar). The metaphor is precise: through deliberate, structured practice (the churning), students extract mastery (the nectar). This isn't passive consumption — it's active effort that yields results.

Why this name works:

- Instantly resonant with the Indian student audience — no explanation needed
- Implies effort and reward, not shortcuts
- The Hindi-English hybrid signals "built here, for here" without feeling provincial
- "Manthan" carries connotations of deep thought, contemplation, and transformation

Tagline: "*Manthan Karo. Master Karo.*"

Subtitle: "*Create custom tests. Get deep analytics. Master your prep.*"

Parent Brand Relationship

Test Manthan is one of four verticals under the **PsiGenei** (Ψ) ecosystem:

Vertical	Function	Status
Premium Courses	Structured learning content	Planned
Test Manthan	Custom test creation + analytics	In development — PRIMARY FOCUS
1-on-1 Mentorship	Personalized guidance	Planned
Blogs (Career + SciCom)	Awareness, inspiration, SEO	Planned

Critical note: Test Manthan must be able to stand alone as a product. It should not depend on the other verticals to deliver its core value. Cross-vertical integration is a future advantage, not a launch requirement.

1.2 PROBLEM STATEMENT

The Market Reality

India produces approximately **4-5 lakh BSc Life Sciences graduates annually** across streams — Botany, Zoology, Microbiology, Biotechnology, Biochemistry, and allied disciplines. Of these, a significant portion competes for limited seats in postgraduate programs (IIT-JAM, CUET-PG, university entrances) and research fellowships (CSIR-NET JRF, GATE, DBT-JRF, GAT-B).

These exams are highly competitive. CSIR-NET Life Sciences has a pass rate below 6%. IIT-JAM Biotechnology admits roughly 100-150 students against thousands of applicants. The stakes are high — clearing these exams determines career trajectory, fellowship funding, and access to top institutions.

What Students Do Today

A typical life sciences aspirant currently relies on some combination of:

1. **Coaching institutes** (offline/online) — Expensive (₹15,000–₹50,000+), rigid schedules, one-size-fits-all pedagogy. The test series they offer are fixed — same test, same day, same difficulty for everyone.
2. **Generic edtech platforms** (Unacademy, Testbook, etc.) — Broad coverage but life sciences is an afterthought. Question quality is inconsistent. Analytics are surface-level ("You scored 65%"). No customization — you take whatever test they've assembled.
3. **PDF collections and Telegram groups** — Free past-year papers circulated in student communities. Zero analytics. No way to filter by topic, difficulty, or question type. Students print them out and self-grade.
4. **Self-made practice** — The most motivated students manually pick questions from textbooks, previous papers, and coaching material. Extremely time-consuming. No performance tracking.

The Core Problem (Stated Precisely)

Life sciences students preparing for competitive exams in India have no tool that lets them create targeted, customized practice tests from a quality-controlled question bank, and then provides actionable analytics on their performance — all within a platform that actually understands the life sciences domain.

This is not one problem. It is three problems compounded:

Problem 1: No Customization

Existing platforms decide what you practice. A student weak in Cell Signaling but strong in Ecology cannot create a focused test on just Cell Signaling at Hard difficulty with only Application-type questions. They're forced to take a generic "Unit Test 5" that wastes half their time on topics they've already mastered.

Problem 2: No Actionable Analytics

After taking a test, students see a score. Maybe a rank. Maybe topic-wise marks. But they don't learn *why* they

got questions wrong — was it a conceptual gap, a careless error, a time-management issue, or a question type they're unfamiliar with? Without this, practice is just repetition, not improvement.

Problem 3: No Life Sciences Depth

Generic platforms treat "Biology" as one category. They don't understand the difference between CSIR-NET Part C question patterns and GATE-BT numerical answer types. They don't have granular topic taxonomies that map to how life sciences is actually structured — from molecular biology to ecology, from Bloom's taxonomy recall to analytical synthesis.

Why This Problem Persists

- **Market size perception:** EdTech investors and builders chase JEE/NEET (millions of aspirants, billions in revenue). Life sciences competitive exams are seen as "niche." This means nobody has invested in building a serious tool for this audience.
- **Domain expertise barrier:** You can't build a good life sciences test platform without deep domain knowledge. The tagging, the question quality, the exam-pattern alignment — all require people who've lived this journey. Most tech teams don't have this.
- **"Good enough" trap:** Students have survived with PDFs and coaching test series for years. The pain is real but normalized. They don't demand better because they don't know better exists.

Why Now

- **Digital adoption post-COVID:** Indian students are now fully comfortable with online testing and digital payment for education tools.
- **Growing aspirant pool:** Life sciences undergraduate enrollment has been growing steadily. CSIR-NET applications have increased year over year.
- **AI capability maturity:** Meaningful analytics, personalized recommendations, and adaptive difficulty are now technically feasible at low cost — they weren't 3 years ago.
- **No incumbent to displace:** Unlike JEE/NEET prep where you'd be fighting Unacademy, Allen, and PW with billions in funding, the life sciences competitive exam space has no dominant digital-first player. The field is genuinely open.

1.3 TARGET USER

Primary User: The Focused Aspirant

This is the user you build for first. Every product decision passes through this person.

Profile:

- **Age:** 21–25
- **Education:** Final-year BSc or MSc in Life Sciences (any stream)
- **Preparing for:** One or two specific exams — most commonly CSIR-NET LS, GATE-BT, or IIT-JAM BT

- **Current preparation:** Mix of coaching material + self-study + past papers
- **Monthly budget for prep tools:** ₹300–₹900 (price-sensitive but willing to pay for clear value)
- **Tech comfort:** Smartphone-first, uses laptop for serious study sessions. Comfortable with UPI payments.
- **Location:** Tier 1-2 Indian cities, studying at state or central universities

Behavioral Profile:

- Studies 4-6 hours/day during active preparation
- Takes 2-3 mock tests per week (when available)
- Spends 20-40 minutes reviewing test results
- Is frustrated by "wasting time" on irrelevant questions in generic test series
- Actively seeks out PYQ papers in Telegram groups and from seniors
- Trusts peer recommendations over advertising

Their Current Journey (Without Test Manthan):

```

Want to practice Cell Biology for CSIR-NET
↓
Search for "CSIR NET Cell Biology questions"
↓
Find a random PDF with 50 mixed questions (no difficulty label, no subtopic,
questions from 2005 that are no longer exam-relevant)
↓
Attempt questions on paper or in head
↓
Check answers from a separate answer key PDF
↓
Score: 32/50.
No idea which subtopics were weak.
No idea if errors were conceptual or careless.
No idea if time management was an issue.
↓
Move on to next topic. Repeat.
↓
On exam day: same weak areas, same mistakes, same result.

```

Their Desired Journey (With Test Manthan):

Want to practice Cell Biology for CSIR-NET



Open Test Manthan → Select CSIR-NET → Cell Biology

→ Pick subtopics (Cell Signaling, Cell Cycle, Apoptosis)

→ Set difficulty to Medium+Hard → Choose Application + Analytical cognitive levels

→ 15 questions, 25 minutes



Take the test in a focused, exam-like interface



Submit → Instant analytics:

- 11/15 correct (73%)

- Cell Signaling: 2/5 (40%) — WEAK

- Cell Cycle: 5/5 (100%) — STRONG

- Apoptosis: 4/5 (80%) — GOOD

- 3 errors were conceptual gaps in GPCR signaling

- 1 error was a careless mistake (misread the question)

- Average time per question: 1.8 min (on track)

- Recommendation: "Revise GPCR signaling pathway."

Try 10 more Application-level questions on Cell Signaling next."



Student knows EXACTLY what to study next.

Next test is even more targeted.

Improvement is measurable and visible.

Secondary Users (Important but Not the Design Priority at Launch)

The Entrance Exam Aspirant (BSc 2nd-3rd year)

- Preparing for IIT-JAM, CUET-PG, or university MSc entrances
- Younger (19-21), more price-sensitive
- Likely on the Free or Pro tier
- Needs: Topic-wise practice aligned with entrance exam patterns

The Working Professional (2nd/3rd Attempt Candidate)

- Has a job, preparing for CSIR-NET or GATE alongside work
- Older (24-30), less price-sensitive, extremely time-sensitive
- Willing to pay for Elite if it saves time
- Needs: Short, focused tests that maximize limited study time

1.4 CORE VALUE PROPOSITION

The One-Line Promise

"You decide what to practice. We show you what to fix."

The Three Pillars

These are non-negotiable. Every feature, every design decision, every pricing choice must serve at least one of these pillars. If it doesn't serve any, it doesn't ship.

PILLAR 1 – COMPLETE CUSTOMIZATION

The student controls every parameter of their test:

- Which exam's pattern
- Which subject(s)
- Which topic(s) and subtopic(s)
- What difficulty mix
- What question types (MCQ/MSQ/NAT)
- What cognitive level (Recall → Analytical)
- How many questions
- How much time

Why this matters: No two students have the same preparation gaps. A tool that forces everyone through the same test is a content delivery system, not a learning system.

PILLAR 2 – DEEP, ACTIONABLE ANALYTICS

After every test, the student gets insights that change their next study session:

- Not just "you scored 70%" but "you're weak in Application-level questions about Cell Signaling"
- Not just "3 wrong in Genetics" but "your errors in Genetics are conceptual — you're confusing epistasis with pleiotropy"
- Not just "you took 45 minutes" but "you're spending 3x longer on Analytical questions — your Recall speed is fine"

Why this matters: Practice without feedback is just repetition. Feedback without specificity is just noise. The analytics must be specific enough that the student can take a concrete action after every test.

PILLAR 3 – LIFE SCIENCES DOMAIN EXPERTISE

This is not a generic quiz platform with a "Biology" category bolted on:

- Questions written/curated by people with MSc/PhD backgrounds from IIT, IISc, AIIMS
- Topic taxonomy that reflects how life sciences is actually taught and examined

- Exam-pattern alignment that understands the difference between a CSIR-NET Part B conceptual question and a GATE-BT numerical problem
- Explanations that teach, not just reveal the answer

Why this matters: Domain expertise is the moat. A generic platform can copy the UI. They cannot copy the question quality, the taxonomic depth, or the exam-pattern intelligence without hiring a team of life scientists.

1.5 WHAT TEST MANTHAN IS — AND IS NOT

What It IS

- **A precision practice tool** — students create exactly the test they need, when they need it
- **An analytics engine** — turning raw test data into specific, actionable study guidance
- **A life sciences specialist** — deep expertise in one domain, not shallow coverage of many
- **A subscription product** — recurring value that justifies recurring payment
- **A student-controlled experience** — the student is the architect of their own practice

What It Is NOT

- **Not a course platform** — Test Manthan does not teach concepts. It tests and analyzes. (Courses are a separate PsiGenei vertical.)
- **Not a mock test series** — We don't publish "Mock Test 1, Mock Test 2" on a schedule. The student builds every test.
- **Not a social/community platform** — No forums, no study groups, no peer chat at launch. Focus is on individual practice.
- **Not a coaching replacement** — We complement coaching (or self-study), not replace it.
- **Not a general-purpose quiz maker** — This is not Quizlet or Google Forms. It's a structured test engine with a curated question bank and analytics layer.

This clarity is critical. Feature requests and scope creep will constantly try to push Test Manthan toward becoming "everything for everyone." The answer must consistently be: *we do custom testing and analytics for life sciences. That's it. And we do it better than anyone.*

1.6 SUCCESS DEFINITION

What Does "Working" Look Like?

Before defining metrics, let's define what success *feels* like qualitatively:

For the student:

- "I can create a test in under 2 minutes that targets exactly what I need to practice."
- "After every test, I know exactly what to study next — not vaguely, but specifically."
- "I'm improving and I can see the improvement over time."
- "This is the one tool I can't drop from my preparation."

For the business:

- Students are paying monthly and not churning because the value is ongoing.
- Word-of-mouth is the primary acquisition channel (students telling batchmates).
- The question bank and analytics are defensible — competitors can't replicate them quickly.

Quantitative Success Metrics (MVP Phase — First 3 Months)

These are hypotheses, not guarantees. They will be revised based on real data.

Metric	Target	Why This Number	How We Measure
Registered users	500	Achievable with campus ambassador + organic for a niche product	Database count
Free → Paid conversion	8-12%	Industry average for freemium edtech is 5-10%. Our free tier is intentionally limited.	Paid users / total registered
Tests created per paying user per month	6-10	Indicates genuine usage, not just sign-up	Average across active paid users
Test completion rate	75%+	If users create tests but don't finish, the creation flow or test length is wrong	Completed / Created
Analytics page engagement	80%+ view rate, >3 min avg time	If users skip analytics, the insights aren't useful	Page views + time on page
Month-1 retention (paid)	65-70%	Benchmark for subscription edtech. Below 60% = product problem.	Users active in Month 2 / Month 1 paid users
NPS	50+	Anything below 40 means the product is "meh." 50+ means genuine advocacy.	Survey at 2-week mark
Monthly churn (paid)	<20%	Student prep cycles are 6-12 months. Churn above 20% means value isn't sustained.	Cancelled / Total paid

What Would Make Us Kill or Pivot the Product

Being honest about failure conditions is as important as defining success:

- **If free-to-paid conversion is below 3% after 3 months** — the "aha moment" isn't landing. Either the free experience (2 tests/month) is sufficient for their needs (no reason to upgrade) or too limited to demonstrate value (users leave before connecting with the product).
 - **If test completion rate is below 50%** — something is fundamentally wrong with the creation flow, question quality, or test-taking experience.
 - **If paid users take fewer than 3 tests/month** — the product isn't sticky. Students are paying but not using it, which means they'll churn.
 - **If NPS is below 30** — the product is not good enough. No amount of marketing fixes a product problem.
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1.7 COMPETITIVE LANDSCAPE (Honest Assessment)

Direct Competitors (Life Sciences Specific)

Competitor	What They Offer	Their Strength	Their Weakness	Our Edge
BioTecNika	Courses + test series for biotech exams	Established brand, large content library	Dated UI/UX, no customization, basic analytics	Modern platform, full customization, deep analytics
Shomu's Biology	Free YouTube content + some test series	Massive free audience (YouTube)	Monetization is weak, no real product	We're a product, not a content channel
Coaching institute apps (various)	Bundled test series with coaching	Comes "free" with coaching enrollment	Rigid, generic, no standalone value	Standalone, customizable, analytics-rich
Telegram PYQ groups	Free past-year papers	Free, community-driven	Zero analytics, zero structure, no quality control	Structured, analyzed, expert-curated

Indirect Competitors (Generic Platforms)

Competitor	Relevance	Why Students Might Use Them	Why They'll Switch
Testbook	Has some life sciences content	Cheap, brand recognition	Generic questions, poor life sciences depth
Unacademy	Occasional life sciences courses	Video content + some tests	Testing is an afterthought, no customization

Competitor	Relevance	Why Students Might Use Them	Why They'll Switch
PracticeQuiz / similar	Generic quiz platforms	Free or cheap	No exam-pattern alignment, no analytics

Honest Gaps We Must Acknowledge

1. **We don't have brand recognition.** BioTecNika and coaching institutes have years of presence. We're starting from zero.
2. **Our question bank is 6,000 questions.** That's solid for launch but not yet a moat. It becomes a moat at 20,000+ with consistent quality.
3. **"Free PYQs on Telegram" is a real competitor.** Many students will resist paying for something they can get (in a worse form) for free. Our analytics and customization need to be clearly, obviously better.
4. **Coaching institute loyalty is strong.** Many students trust their coaching institute's test series even if it's mediocre, because it comes with the brand promise. We need to earn that trust independently.

1.8 ASSUMPTIONS TO VALIDATE

Every product is built on assumptions. Documenting them explicitly ensures we test them rather than discover them as surprises.

#	Assumption	Risk if Wrong	How to Validate
A1	Students want to customize tests (not just take pre-made ones)	Core value prop collapses. We've built a complex tool nobody asked for.	User interviews + usage data: do they actually use advanced filters or just click defaults?
A2	Deep analytics change study behavior	Students look at analytics but don't act on them — analytics become a "nice to have," not a "must have"	Track: after viewing analytics, does the next test target the identified weak areas?
A3	₹499/month is affordable for BSc/MSc students	Price is a barrier; free + Telegram PYQs win	Monitor conversion rate. A/B test ₹299 vs ₹499 if conversion is low.
A4	6,000 questions is enough for launch	Students exhaust relevant questions quickly, feel the bank is "thin"	Track question repeat rates. If a student sees >20% repeated questions in a month, the bank is too small for their use case.
A5	Life sciences focus is a strength, not a limitation	Market is too small to sustain a business; we should have gone broader	TAM analysis + growth rate. If we can't reach 2,000 paid users in 12 months, the niche may be too narrow.
A6	Students will pay monthly for a testing tool	Prep is seasonal (3-6 months before exam). Annual or per-exam pricing might fit better.	Track subscription duration. If average is 2-3 months, consider exam-cycle pricing bundles.
A7	The 3-test free limit is enough to demonstrate value	3 tests is too few to reach "aha moment," users bounce before converting	Track: at what test number does conversion spike? If it's test 5-6, the free limit is too tight.

1.9 SCOPE BOUNDARIES FOR THIS PRD

This PRD covers **Test Manthan as a standalone product for its MVP and first 6 months.**

In Scope

- Test creation engine (custom test builder)
- Question bank (structure, tagging, quality standards)
- Test-taking interface
- Post-test analytics dashboard
- Subscription management (Free / Pro / Elite)
- User authentication and basic profile
- Test history and progress tracking

Out of Scope (For This PRD)

- Premium courses vertical
- 1-on-1 mentorship vertical
- Blog/SciCom vertical
- AI doubt solver chatbot
- Community features (forums, study groups)
- Mobile app (iOS/Android) — web-first, mobile-responsive
- B2B/institutional licensing
- Vernacular language support
- Adaptive testing (AI-adjusted difficulty mid-test)
- VR/AR features

These are all legitimate future directions. They are not Module 1 concerns. They will not creep into the MVP unless explicitly re-scoped.

1.10 FOUNDER DECISIONS (Confirmed February 15, 2026)

All open questions from the initial draft have been resolved through founder review.

Decision 1 — Full Mock Tests: TOPIC-WISE ONLY in Custom Builder

Decision: The Test Manthan custom test builder supports topic-wise tests exclusively. No full-mock creation capability.

Reasoning:

- Each exam (CSIR-NET, GATE-BT, GATE-XL, JAM, etc.) has a fundamentally different structure. Building a faithful full-mock experience per exam inside a self-serve builder adds enormous complexity for marginal value.
- The core differentiation is precision practice, not mock simulation. Competitors already sell generic test series — Test Manthan wins by being the tool that *doesn't* do that.

However, full mocks exist as a bundle bonus:

- The team will manually curate ~15 full-length mock test series per exam using the same question database.
- These are expert-designed, not student-configured.
- They are offered as a **complimentary bundle bonus** with paid subscriptions (Pro/Elite), not as a separate product.
- They use the same test-taking interface as custom tests.

- This directly counters competitor positioning: "*They sell you test series for ₹X. We give you 15 full mocks free – plus unlimited custom tests with deep analytics.*"

Cross-vertical integration: Premium Course topics will also end with quizzes that route students into the Test Manthan test-taking interface, using the shared question database. Course students experience Test Manthan organically.

Decision 2 — Question Cap: FIRM at 10/20/30

Decision: Question limits per test remain 10 (Free), 20 (Pro), 30 (Elite).

Reasoning: Both pedagogical and commercial.

- Shorter, focused tests align with the "precision practice" philosophy — 15-20 targeted questions with deep analytics beats 100 unfocused questions with a score.
- Configuring 60+ custom questions is not user-friendly in the builder interface.
- The cap creates a natural tier differentiator.

Decision 3 — Free Tier: RESTRUCTURED to 2 Tests/Month (Perpetual)

Decision: Free tier changed from "3 tests forever (non-renewable)" to **2 free tests per month, perpetually renewable.**

Reasoning:

- The old model killed re-engagement. A student who tried 2 tests casually and left had almost no reason to return months later.
- 2 tests/month keeps free users in the ecosystem indefinitely — they experience ongoing value, stay familiar with the interface, and have a monthly conversion prompt.
- The free experience remains constrained enough to drive upgrades: 10 questions max, PYQ-only, no subtopics, basic analytics preview only.
- A larger active free-user base supports word-of-mouth growth, campus ambassador programs, and long-cycle conversion (student signs up in Year 2, converts in Year 3 when exam prep gets serious).

Upgrade prompt: "*You've used your 2 free tests this month. Upgrade to Pro for unlimited tests + deep analytics.*"

Decision 4 — Pro Exam Lock: INTENTIONAL

Decision: Pro (₹499/month) gives access to ONE exam, limited to IIT-JAM BT, GAT-B, and CUET-PG. CSIR-NET LS, GATE-BT, and GATE-XL require Elite (₹899/month).

Reasoning: The premium exams (CSIR-NET, GATE) demand significantly more resources to maintain at high quality — more complex questions, broader topic coverage, higher accuracy standards. Restricting them to Elite reflects the real cost of serving that content. Pro is positioned squarely for BSc-level entrance exam students focused on a single exam.

Decision 5 — Exam-Specific Marking: YES, via JSON Config

Decision: Fully implemented. Each exam has a dedicated JSON configuration file loaded at exam selection. The config dictates: positive marks, negative marks, partial marking rules, section structure, and time rules. The same question can carry different marks depending on which exam's config is active.

Architectural implication: The question bank is decoupled from exam-specific rules. Questions are tagged by content attributes (topic, difficulty, cognitive level). Scoring behavior is determined entirely by the exam config layer. This is clean and scalable.

Decision 6 — Question Source Transparency: YES for PYQs

Decision: Past Year Questions display their source exam and year (e.g., "CSIR-NET June 2022"). Practice questions (original, non-PYQ) do not carry an exam/year tag.

Reasoning: PYQ provenance builds trust. Students value knowing they're practicing with real exam questions. It also helps them mentally calibrate difficulty ("this was asked in GATE 2023, so it's at that level").

Decision 7 — Offline Access: NO

Decision: Not planned. Test Manthan is a web-first, online-only product. No offline capability for web or future mobile app at this stage.

Module 1 complete. All decisions confirmed. Proceeding to Module 2: User Personas & Journey Maps.