MY GATE PREPARATION STRATEGY

MY MOTIVATION FOR WRITE THIS

1) Most students already know what needs to be done—but often struggle to consolidate it into a clear, confident strategy.
2) I've also had many students reach out to me for advice, and instead of repeating myself (often imperfectly), I felt it would be more useful to put my thoughts into a structured write-up.
3) From what I've observed, many aspirants follow broadly similar approaches, but hesitate when it comes to committing to a plan. This lack of finality often leads to wasted time, second-guessing, and unnecessary detours.
4) I've written GATE twice and was fortunate to secure strong results (AIR 4 in EE 2020 and AIR 15 in DA 2026). While the strategy I followed may seem obvious in hindsight, I've noticed that students still fall into common traps or spend time on things that don't add much value.
5) There is no shortage of advice available today, and this is not meant to invalidate any of it. Instead, I would suggest you engage with this write-up only if you find yourself relating to the reasoning behind it. Ultimately, no strategy works unless you believe in it and can follow through consistently.
6) Even a flawed plan is better than aimless effort. So don't treat anything here as absolute—question it, think deeply if you disagree, and then choose what aligns best with you.

DISCLAIMER

7) **"One size doesn't fit all**" - cliche but true - Treat any strategy—including mine—as a starting point, not a rulebook. Fine tune according to your strength and weakness rather than blindly following any advice out there including what I am about to say.
8) **Survivors bias** - Much of the advice out there comes from toppers, and while valuable, it often overlooks the many similar approaches that didn't work. Use such insights carefully, and always filter them through your own context.

UNDERSTANDING THE EXAM - TACTICS VS STRATEGY

Preparation becomes much simpler once you clearly separate *strategy* from *tactics*. Most confusion—and wasted effort—comes from mixing the two. Strategy is your long-term plan. It answers *what* you are trying to achieve and *why*. In the context of GATE, this includes decisions like subject order, depth of coverage, revision cycles, test-taking philosophy, and overall timeline. A good strategy is stable—it shouldn't change every week based on mood or external noise.

Tactics, on the other hand, are your short-term actions. They answer *how* you execute your strategy on a daily or weekly basis. This includes things like how many questions you solve today, how you analyze a mock test, how you revise a topic, or how you handle weak areas in the moment.

A common mistake is constantly changing strategy based on tactical outcomes. For example, performing poorly in one mock test may tempt you to rethink your entire plan. In most cases, the issue lies in execution (tactics), not in the plan (strategy). Think of strategy as direction and tactics as movement. Without a clear strategy, even perfect tactics won't take you far. And without consistent tactics, even the best strategy remains theoretical.

The goal is simple: decide your strategy carefully, and then focus your energy on executing the right tactics consistently.

GOAL SETTING: **Long-Term vs Short-Term**

Consistency doesn't come from motivation—it comes from having the right goals at the right level. Long-term goals give you direction. These are broader targets like completing the syllabus, finishing first revision, reaching a certain test score range, or mastering a subject. They should be clear, realistic, and time-bound—but not overly rigid. Their purpose is to keep you aligned, not to pressure you daily.

However, long-term goals alone are not enough. They are too distant to drive day-to-day action. That's where short-term goals come in. Short-term goals are what you act on *today*. These should be small, specific, and achievable within a day or a few days. For example: finishing a topic, solving a fixed number of quality problems, revising notes, or analyzing a mock test properly.

Good short-term goals have three qualities:

- Clarity – You know exactly what to do
- Measurability – You can say clearly whether it's done or not
- Realism – It pushes you, but is still achievable

Many students fail not because they lack a plan, but because their daily goals are either too vague ("Do math") or too ambitious ("finish the entire subject today"). Both lead to inconsistency.

A simple way to stay consistent is:

- Define your long-term direction (strategy)
- Break it into weekly targets
- Convert those into clear daily tasks (tactics)

At the end of the day, consistency is just this:
Did you do what you said you would do today? If you get that right most days, results take care of themselves.

PILLARS OF IDEAL PREPARATION

Start by honestly estimating how much time you can study each day—say **X hours**. Once this is fixed, plan your subjects in a way that allows you to complete the entire syllabus by around October end. If you can achieve this, you are already ahead of a large majority of aspirants. However, one critical point: **revision should not be postponed to the end. It must be a continuous process.**

Also revision and practice are separate things.

1)Practice includes solving PYQs, subject-wise tests, mock exams, and textbook problems.
2)Revision involves actively recalling concepts without looking at notes, identifying gaps, and then revisiting only what you've forgotten.

Do not use PYQs as your revision. Solving PYQs is part of practice and this cannot offset your forgetting. So revision and PYQs are to be treated as separate things that you need to allot time to. If your total available time is **X hours per day**, a good starting distribution would be:

TIME MANAGEMENT

a) 0.2X -> for revision
b) 0.5X -> for learning theory (lectures, notes, coaching material)
c) 0.3X -> Practice PYQs, text book exercises

Ideally, this balance should be maintained daily. If that's not always practical, ensure it balances out over the week. For example, if you plan in terms of weekly hours, distribute them so that this ratio is roughly maintained across the week.

These proportions are not rigid—you should fine-tune them based on your strengths and weaknesses. For instance, if you naturally have strong retention or problem-solving ability, you may slightly adjust the time spent on revision or practice. However, this ratio works well for the majority of students.

One of the most common mistakes I've observed is getting this balance wrong.

- If you focus only on theory and move fast without revision or practice, you will forget most of what you learned within a few weeks.
- If you focus only on revision and theory without enough practice, you may feel confident—but struggle to apply your knowledge in the exam.

The key lies in consistently balancing these three pillars: **learning, revision, and practice**—while adjusting them based on your individual needs.

REVISION STRATEGY

Also one more trick I like to share is about revision. You can follow this or do whatever you prefer as your revision technique. Means this is just my method and need not be the best way.

1) Revision should be an active recall. It should not be re-reading material. Re-reading does not need active participation from your brain because you are just recognizing the concepts from notes, not reproducing the concept. So ideal revision should be without referring to the notes, trying to recollect as much as possible about this topic that you are revising.

2) You can not always recall everything. It does not always work, so when you feel stuck at some point, or slow at some point, Better refer back to notes briefly or use a hint/ short notes, This will make your brain recognize that particular point without spending too much time in revision. Pain is part of the process.

3) Pain is part of the process: That's how the brain learns to remember important stuff. You can't learn swimming without almost drowning at some point. You can't learn to ride a bicycle without falling at least once. It will be painful and uncomfortable when you do this revision. But that's the sign of your brain resisting change and creating new memories. Stay on the edge of your comfort zone, Not too relaxing and Not too tiring.

QUESTION PRACTICE

Bucketing questions and developing a search tree:

One approach that helped me a lot was *bucketing questions* and building a mental "search tree" for problem-solving. Take a subject like Linear Algebra (LA). Don't treat it as a single, uniform subject. Instead, break it down based on the *types of questions* that appear.

For example:

- Determinant-based questions
- Vector space and dimension-related questions
- Eigenvalue/eigenvector-based questions

As you solve problems, actively analyze:

- What type of question is this?
- What approach or strategy was used here?
- What are the standard results or shortcuts involved?

Write down your own conclusions. Over time, you'll notice that each "bucket" tends to follow certain patterns. Once you've practiced enough questions from a particular type, your brain starts recognizing these patterns almost instantly. This is important: **The approach is not the**

same across all question types. Just like in Machine Learning—solving problems in SVM is very different from regression—each category in LA has its own way of thinking.

Your goal should be to build a system like:

- *Which bucket does this question belong to?*
- *What is my standard approach for this type?*
- *Is this following a known pattern, or is it something new?*

If you encounter a new pattern, simply create a new "bucket." Over time, you'll develop a very strong and structured way of approaching problems.

Tagging Questions & Learning from Mistakes

Another technique I used was mentally tagging questions—almost like assigning hashtags—to quickly identify how to approach them or what to be careful about.

Some examples:

- **#LIFELINE** – Question looks too long or complicated → consider starting from options
- **#EVIL_TRAP** – Looks deceptively easy → double-check for traps
- **#CONCEPTUAL_HELL** – Involves multiple concepts → break it into smaller sub-problems
- **#PROPERTY_BASED** – Given a property, asked to conclude something → test simple or extreme cases

The purpose of this is simple to avoid silly mistakes and reduce wasted time during exams.

Build Your Own System

This is important—**don't copy my system blindly.**

Your mistakes will not be the same as mine, so your system shouldn't be either. The real value comes from:

- Giving mock tests
- Carefully analyzing your mistakes
- Building your own mental map of patterns, traps, and strategies

You might end up with a completely different system, and that's perfectly fine.

I've practiced my approach enough that it feels natural and doesn't add extra time during the exam. That's the goal—whatever system you build should become *automatic* with practice.

Some students may be able to handle all of this intuitively. I couldn't. I needed structure—and this is what worked for me.

Importance of PYQs

Imagine a chess player who has spent years studying theory—openings, endgames, strategies—but has never actually played a game. Now compare them with someone who has played hundreds of games but never formally studied the theory.The second player will almost always outperform the first. Because ultimately, it's not theoretical knowledge that wins the game—it's the ability to *apply* it in real situations.

This may not be a perfect analogy, but the idea is simple: **application matters more than isolated understanding.**

When to Start PYQs

Your approach to PYQs should depend on how much time you have.

- **If you have only 1–2 months left:**
  The most practical strategy is to jump directly into PYQs with whatever knowledge you have. You'll end up learning concepts along the way, and this is often the fastest way to maximize marks in a short time.
- **If you have 6–7 months (serious preparation):**
  Start with first principles—build strong conceptual understanding first. PYQs should then be used alongside this to reinforce and apply what you learn.

What PYQs Actually Do: For a serious aspirant, PYQs serve multiple critical purposes:

1) Identify Gaps in Understanding
PYQs expose the limitations of your knowledge. They show you exactly where your concepts break down and what you've misunderstood or missed.

2) Improve Speed and Accuracy
You cannot develop exam-level speed and precision without solving real exam questions. PYQs train you to think under constraints.

3) Help in "Chunking" Concepts
In an ideal exam scenario, you shouldn't be deriving everything from first principles. That's too slow. Instead, your brain should be able to *recognize patterns* and *recall results instantly*. This is where PYQs help—they connect concepts, highlight patterns, and allow you to store information in chunks. Over time, you start seeing: **recurring ideas, standard tricks, exceptions and edge cases.** This makes your thinking more efficient and exam-oriented.

4) Provide Measurable Feedback
Testing yourself is one of the most effective ways to improve. You cannot improve what you cannot measure. PYQs act as a benchmark—they show your progress, highlight weaknesses, and give you a realistic sense of where you stand.

In short:
Theory builds understanding, but PYQs build performance.

Both are essential—but if your goal is to maximize marks, PYQs are non-negotiable.

EXAM WRITING STRATEGY

I used a 2 pass strategy. THis is not the only way and you should choose what best fits you.

1) **FIRST PASS**

In the exam, if the questions are given in order of mark, then I will finish aptitude and then directly go to 2 mark questions. Skip anything too complicated. 2 marks need more pattern recognition and less mental fatigue. These questions are tough (generally more tough than 1 mark) So starting with aptitude gives me confidence.

1) Mind is still fresh
2) Less fatigue, so easy pattern recognition - Solve questions which are easily recognized and answered in 1-2 minutes.
3) if a question I don't know immediately how to solve, I mark and skip
4) if a question doesn't make sense or seems too complicated, skip without marking

After 2 mark questions there will be about 25 nos. of 1 mark questions remaining. I will usually have like 2 hours or more balance. I usually finish 1 mark questions in 30 mins since they will be easy. This is my first pass. Here we have not solved any challenging questions, we only solved easily solved questions where pattern recognition is needed.

This is my general time consumption

- Pass one: Aptitude 15 Mins (Hard Cap)
- Pass one: 2 Mark Questions 1 Hr, Cumulative time 1 Hr 15 Min
- Pass one: 1 Mark Questions 30 Mins, Cumulative time 1 HR 45 Mins
- Pass one completed in 1 HR 45 Mins
- 15-25 questions marked for review and skipped
- Very less or almost no negative marks. In pass one
- Get in the 55-65 marks range

2) **Second pass - brute Force**

I usually take 1-2 minutes break after 1.5 hours in the exam. I think about something other than gate or question. Deep breathing. Positive reinforcement. Then we go back to all the marked questions

- Already 1 HR 45 MINs - 2 hours are over. Mental Fatigue and less pattern recognition

- Solve questions by brute force - more algebraic manipulation. Considering simpler cases. Re framing the question, working with knows and unknowns. Backtracking, following checklist,
- Generally multiple approaches must be tried before getting the solution. takes 3-5 minutes per question
- This session is a rank decider - Almost 90% of people do questions in the first pass. But staying mentally fresh and working with fatigue is what decides rank.
- If we are able to do at least 50% of the marked questions, then we are in the game.
- Solve maybe 10-20 questions within one hour. Left 5-6 questions unanswered

If the questions are not given in order of mark, then I will do them in order but still use 2 pass strategy

WHEN TO SKIP:

If I need to read a question carefully, or pause to think about it, then it is not a first pass question. This is how I approach questions in the first pass. This removes the burden of investing time early in the exam in understanding a complex question even before you know if it is solvable or not. This directly avoids a time sink. Spending x minutes of time understanding a question only to not solve it anyway is taking away x minutes from your 180.

The first pass is about harvesting. Here marks come due to an already seen question pattern. There is no mark for correct question understanding if we are not able to solve it at the end. So skip such questions for the second pass.

GATE DA Resources

A) Youtube playlist

1) 97) MIT 18.06SC Linear Algebra, Fall 2011 - YouTube
2) Probability and Statistics - Joe Blitzstein | Harvard - YouTube
3) (98) An Introduction to Artificial Intelligence - YouTube
4) (MIT 18.01 Single Variable Calculus, Fall 2006 - YouTube
5) Statistical Learning with R - YouTube
6) Stanford CS229: Machine Learning Full
7) Course taught by Andrew Ng | Autumn 2018 - YouTube
8) Fall 2025 Course 18: Mathematics
9) (63) MIT 6.034 Artificial Intelligence, Fall 2010 - YouTube
10) (64) Lecture 2 - The Sum Rule of Counting | Combinatorics | Discrete Mathematics | Deepak Poonia - YouTube
11) Linear Algebra for GATE DA - By Sachin Mittal

B) TEXT BOOKS

1) AI - Artificial Intelligence: A Modern Approach (AIMA), by Stuart Russell and Peter Norvig
2) ML - Pattern Recognition and ML - Bishop
3) ML - ISLR
4) ML - The elements of statistical learning
5) Linear Algebra - Gilbert Strang's Edition 5 - Introduction to Linear Algebra
6) Linear Algebra - "Linear algebra done right" by Sheldon axler.
7) Probability - Joseph Blizstein's Introduction to Probability
8) Probability - *A first course in probability* Sheldon Ross
9) Korth or Navathe - DBMS
10) ***Data Structures and Algorithms in Python*** by Michael T. Goodrich, Roberto Tamassia, and Michael H. Goldwasser: