ALTA
SCHOOL OF TECHNOLOGY

A-SAT 2026

Test Prep Kit

Marking Scheme :

Subject Name	For Every Correct Answer	For Every Wrong Answer
Aptitude + Maths	3	-1
Logical Reasoning & Problem Solving	3	-1
Technical Ability & Compter Science Readiness	4	-1

Test Duration

120 Minutes

Total Questions

60 MCQ

Section 1: Aptitude (Maths)

This section evaluates your mathematical foundation essential for technology programs. Topics include algebra, calculus, probability, coordinate geometry, and applied mathematics from Classes 11-12.

Key Topics to Prepare :

- Calculus (Limits, Derivatives, Integration, Applications)
- Algebra (Quadratic equations, Complex numbers, Sequences & Series)
- Probability & Statistics
- Matrices & Determinants
- Coordinate Geometry & Vectors
- Trigonometry & Inverse Functions
- Linear Programming

Foundational Concepts :

- Number Systems (HCF, LCM, Divisibility rules)
- Percentages, Ratios, and Averages
- Time-Speed-Distance and Work problems
- Profit & Loss, Simple & Compound Interest

Section 1: Sample Questions

Question 1: If the roots of the equation $x^2 - px + q = 0$ differ by 2, then which of the following is true?

A) $p^2 - 4q = 4$
B) $p^2 + 4q = 4$
C) $p^2 - 4q = 16$
D) $p^2 + 4q = 16$

Question 2: The value of $\int_0^{(\pi/2)} (\sin x)/(\sin x + \cos x)\, dx$ equals:

A) $\pi/4$
B) $\pi/2$
C) 1
D) 0

Question 3: A bag contains 5 red, 6 blue, and 4 green balls. If 3 balls are drawn at random, what is the probability that all three are of different colors?

A) 8/91
B) 24/91
C) 48/91
D) 120/455

Question 4: If the matrix A = [[2, 3], [5, k]] is singular, then the value of k is:

A) 7.5
B) 15/2
C) 10/3
D) 6

Question 5: A train travels from station A to station B at 60 km/h and returns at 40 km/h. If the total journey takes 5 hours, what is the distance between A and B?

A) 100 km
B) 120 km
C) 150 km
D) 180 km

Section 2: Logical Reasoning & Problem Solving

This section tests your ability to think analytically, recognize patterns, solve puzzles, and make logical deductions—critical skills for technology professionals.

Key Topics to Prepare:

- Pattern Recognition: Number series, letter series, analogies
- Logical Deduction: Syllogisms, Venn diagrams, blood relations
- Arrangement Problems: Linear and circular seating, scheduling
- Data Interpretation: Tables, charts, graphs, caselets
- Coding-Decoding: Pattern-based encryption
- Direction & Distance: Navigation problems
- Clock & Calendar: Time-based reasoning
- Data Sufficiency: Determining if information is adequate

Section 2: Sample Questions

Question 1: Five students—Arjun, Bhavna, Chirag, Divya, and Esha sit in a row facing north. Arjun sits two places to the left of Divya. Chirag sits at one of the ends. Bhavna sits between Arjun and Esha. Who sits in the middle?

A) Arjun
B) Bhavna
C) Divya
D) Esha

Question 2: In a certain code, "ALGORITHM" is written as "BMHPSJUIN". How will "DEVELOPER" be written in the same code?

A) EFWFMPQFS
B) CFUFKNOFD
C) EFWFMNQFS
D) EFUFMPQFS

Question 3: Study the following data showing monthly sales (in lakhs) for three products over six months. Which product showed the highest percentage increase from January to June?

Month	Product A	Product B	Product C
Jan	45	38	52
Feb	52	42	48
Mar	48	45	55
Apr	60	50	58
May	55	48	62
Jun	58	52	60

A) Product A
B) Product B
C) Product C
D) All equal

Question 4: A, B, C, D, and E are five cities. The distance from A to B is equal to the distance from B to C. The distance from C to D is half the distance from A to B. The distance from D to E is twice the distance from C to D. If the distance from A to B is 80 km, what is the total distance from A to E traveling through B, C, and D?

A) 280 km
B) 320 km
C) 240 km
D) 360 km

Question 5:
Statement 1: All programmers are problem-solvers.
Statement 2: Some problem-solvers are mathematicians.
Statement 3: No mathematician is a poet.
Conclusion: Some programmers are not poets.

A) Conclusion definitely follows
B) Conclusion definitely does not follow
C) Conclusion possibly follows but not definitely
D) Data insufficient

Section 3: Technical Ability

This section tests your ability to quickly understand and apply new concepts—a crucial skill for success in technology programs. You'll read short explanations about basic computing or technology concepts, then answer questions based on what you've just learned.

Remember: No prior programming knowledge needed! Everything you need to know is provided in the passage.

Key Topics to Prepare:

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Section 3: Sample Questions

Concept 1: How Computers Store Numbers

Computers use the binary system (base-2) instead of our regular decimal system (base-10). In binary, we only use two digits: 0 and 1.
How it works:

- In decimal: Each position represents powers of 10 (ones, tens, hundreds)
  - 245 = 2×100 + 4×10 + 5×1
- In binary: Each position represents powers of 2 (1, 2, 4, 8, 16...)
  - 1011 (binary) = 1×8 + 0×4 + 1×2 + 1×1 = 11 (decimal)

Simple conversion example:

- Binary 101 = 1×4 + 0×2 + 1×1 = 5 in decimal
- Binary 1100 = 1×8 + 1×4 + 0×2 + 0×1 = 12 in decimal

Question 1: What is the decimal equivalent of the binary number 1110?

A) 12
B) 13
C) 14
D) 15

Question 2: If a computer can store 4 binary digits (bits), what is the largest decimal number it can represent?

A) 4
B) 8
C) 15
D) 16

Concept 2: How GPS Finds Your Location

GPS (Global Positioning System) works using satellites orbiting Earth. Your phone calculates its position using a simple principle called trilateration.

How it works:

1. Your phone receives signals from at least 3 satellites
2. Each satellite signal tells your phone how far away that satellite is
3. Imagine drawing a circle around each satellite at that distance
4. Your location is where all three circles intersect

Why 3 satellites?

- 1 satellite: You could be anywhere on a sphere around it
- 2 satellites: You could be at two possible points where spheres intersect
- 3 satellites: Pinpoints one exact location (the intersection point)
- 4+ satellites: Improves accuracy and gives altitude
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Example: If you're 20,000 km from Satellite A, 22,000 km from Satellite B, and 21,000 km from Satellite C, there's only ONE point where these three distances meet—that's your location!

Question 3: Why can't GPS accurately determine your location with only 2 satellites?

A) Satellites are too far apart
B) Two circles can intersect at two different points
C) The signals are too weak
D) You need backup in case one satellite fails

Question 4: A GPS device shows "Waiting for 4th satellite" even though it can work with 3. What additional information does the 4th satellite most likely provide?

A) Your exact altitude (height above ground)
B) The direction you're facing
C) Your internet connection
D) The current time

Concept 3: How Music Streaming Works

When you stream music on Spotify or YouTube, the song doesn't download completely before playing. Instead, it uses buffering.
How buffering works:

1. Your device downloads small chunks of the song (like 10 seconds at a time)
2. While you listen to the first chunk, it downloads the next chunk
3. This continues throughout the song
4. Downloaded chunks are stored in a temporary "buffer" (memory space)

Why buffering is useful:

- Starts playing quickly (don't wait for full download)
- Saves storage space (temporary, not permanent)
- Adjusts quality based on internet speed

Example:

- Song length: 3 minutes (180 seconds)
- Buffer size: 30 seconds
- Your device keeps 30 seconds downloaded ahead of what you're currently hearing

What happens with slow internet:

- Buffer empties faster than it fills → music pauses ("buffering...")
- Device may reduce quality (lower bitrate) to keep playing smoothl

Question 5: You're listening to a streamed song with a 20-second buffer. Your internet disconnects. What happens?

A) Music stops immediately
B) Music continues for about 20 seconds, then stops
C) Music continues to the end of the song
D) Music starts from the beginning

Question 6: A streaming app reduces video quality from HD to SD when your internet slows down. This is done to:

A) Save battery on your phone
B) Keep the video playing without pausing
C) Reduce data usage charges
D) Protect your eyes from strain

How to Prepare Effectively For ASAT-2026

Step 1: Understand the Test Structure

- 60 questions in 120 minutes = 2 minutes per question average
- Different sections have different mark values
- Negative marking applies—avoid random guessing

Step 2: Build Your Foundation

- Review Class 11-12 Mathematics thoroughly
- Practice logical reasoning daily with puzzles and pattern problems
- Don't worry about programming, focus on logical thinking for Technical Ability

Step 3: Practice Time Management

- Recommended time allocation:
  - Aptitude: 35-40 minutes
  - Logical Reasoning: 35-40 minutes
  - Technical Ability: 40-45 minutes
- Attempt easier questions first
- Mark difficult questions for review

How to Prepare Effectively For ASAT-2026

Step 3: Practice Time Management

- Recommended time allocation:
  - Aptitude: 35-40 minutes
  - Logical Reasoning: 35-40 minutes
  - Technical Ability: 40-45 minutes
- Attempt easier questions first
- Mark difficult questions for review

Step 4: Master Problem-Solving Strategies

- For Maths: Know formulas, practice calculation speed
- For Reasoning: Draw diagrams, make tables
- For Technical: Read passages carefully, focus on logic not jargon

Test Day Tips

Before the Test:

- Ensure stable internet connection
- Test webcam and microphone
- Choose a quiet, well-lit location
- Keep ID and login credentials ready

During the Test:

- Stay calm—it's proctored but that's just for fairness
- Read each question carefully
- Skip questions you're unsure about, return later
- Review answers if time permits

AI Proctoring Guidelines:

- Face must be visible throughout
- No unauthorized materials or devices
- No communication with others
- Follow all technical instructions

Frequently Asked Questions (FAQ)

Do I need programming knowledge for the Technical Ability section?

No! This section provides all necessary information. It tests your ability to learn new concepts, not existing knowledge.

Should I attempt all questions?

Only if you can make educated guesses. With -1 marking, random guessing can hurt your score.

Which section should I attempt first?

Start with your strongest section to build confidence, but manage time across all three.

What if I face technical issues during the test?

Contact the proctor immediately using provided support channels.

Before you go & prepare

The A-SAT is designed to identify students with strong analytical abilities and learning potential—not just those with existing technical knowledge. Your preparation should focus on:

- Strengthening mathematical fundamentals
- Developing logical reasoning skills
- Practicing quick comprehension and application
- Building exam temperament through mock tests

Remember: This test measures your potential to succeed in technology education, not your current technical expertise. Stay confident, prepare systematically, and approach the test with a problem-solving mindset. Good luck with your preparation! Engineer your future with Alta School of Technology.