

XAT 2025 Memory Based Answer Key PDF (Jan 05, 2025)

Part 1: Quantitative Aptitude and Data Interpretation

Question 1 Option: (C) — Rs. 77500

Explanation: To maximize the revenue, we formulate the optimization problem to minimize the weighted sum of double and single occupancy rooms used. Solving the linear constraint $3x + 2y + z = 55$ with $x + y + z \leq 25$ yields the optimal combination of 5 triple occupancy, 20 double occupancy, and 0 single occupancy rooms, giving Rs. 77,500.

Question 2 Option: (B) — 42.60% loss

Explanation: Let the broken pieces have lengths of $4x$ and $9x$, making the original length $13x$. Since the value is proportional to the square of the length, the original value is $169x^2k$ and the post-accident value is $(16 + 81)x^2k = 97x^2k$, resulting in a percentage loss of $\frac{169-97}{169} \times 100\% \approx 42.60\%$.

Question 3 Option: (C) — $y = 6$

Explanation: Since $C(-2, 0)$ and $D(2, 0)$ lie on the x-axis, the side CD has a length of 4 units. The opposite side AB of the rectangle must be parallel to CD and at a distance equal to the width of the rectangle, which is $\frac{\text{Area}}{\text{Length}} = \frac{24}{4} = 6$ units, represented by $y = 6$.

Question 4 Option: (B) — $\pi : 4$

Explanation: Let P be the equal perimeter of both shapes. The area of the square is $\left(\frac{P}{4}\right)^2 = \frac{P^2}{16}$, and the area of the circle is $\pi \left(\frac{P}{2\pi}\right)^2 = \frac{P^2}{4\pi}$. Taking their ratio yields $\frac{P^2}{16} : \frac{P^2}{4\pi} = \pi : 4$.

Question 5 Option: (A) — Rs. 120000

Explanation: Ramesh paid a total of $\frac{1}{6} + \frac{1}{3} = \frac{1}{2}$ of the price upfront, leaving the remaining $\frac{1}{2}$ as the balance. The 10% interest on this balance is $0.1 \times \frac{x}{2} = \frac{x}{20}$, and setting this equal to Rs. 6000 gives the original price $x = \text{Rs. } 120,000$.

Question 6 Option: (A) — The distance between the y-intercepts of the two lines is 6

Explanation: Since L_1 passes through $(5, 8)$, its equation is $y = 2x - 2$ with a y-intercept of -2 . L_2 has a slope of 1 and passes through $(5, 8)$, giving the equation $y = x + 3$ with a y-intercept of 3. The actual distance between their y-intercepts is $|3 - (-2)| = 5$, making option A definitely false.

Question 7 Option: (D) — 13

Explanation: The maximum number of marks that can be placed on a 4×4 grid without completing any row or column is 12 (by leaving one cell empty in each row and column). The next mark (the 13th press) must go into an empty cell, which will inevitably complete its corresponding row and column, ending the game.

Question 8 Option: (E) — (a - b) and c are divisible by 3

Explanation: Simplifying the terms under the cube root yields $3^{\frac{4a-b}{3}} \cdot 7^{\frac{3a+3b+2c}{3}}$. For this expression to be an integer, both exponents must be integers, which simplifies to the necessary and sufficient condition that $(a - b)$ is divisible by 3 and c is divisible by 3.

Question 9 Option: (C) — Rs. 4,73,000

Explanation: The total surface area of the trophy is the sum of the curved surface of the frustum ($\pi(R + r)l \approx 6476.5 \text{ cm}^2$), the bottom circular base ($\pi R^2 \approx 2827.4 \text{ cm}^2$), and the hemisphere dome ($2\pi r^2 \approx 2513.3 \text{ cm}^2$). Multiplying the total area ($\approx 11817.2 \text{ cm}^2$) by Rs. 40 gives approximately Rs. 4,72,688, which is closest to Rs. 4,73,000.

Question 10 Option: (C) — $7 - \sqrt{3}$ feet

Explanation: Let h be the shoulder height of the robot. The tangent of the angle θ made by the arm to reach the top shelf is $\tan \theta = \frac{7-h}{1} = 7 - h$. Since $\theta \leq 60^\circ$, we have $7 - h \leq \tan 60^\circ = \sqrt{3}$, which simplifies to the minimum shoulder height $h = 7 - \sqrt{3}$ feet.

Question 11 Option: (D) — 250 metres

Explanation: The consecutive sum constraints $800 \leq d_i + d_{i+1} \leq 1260$ sum up to $4000 \leq 2C \leq 6300 \implies 2000 \leq C \leq 3150$ steps. A total path of 2040 steps with distinct spacing is possible, yielding a total distance of $2040 \times 0.77 \approx 1570.8$ metres, which corresponds to a radius of $\frac{1570.8}{2\pi} \approx 250$ metres.

Question 12 Option: (C) — 2

Explanation: Expressing the logarithmic terms with base a , the equation simplifies to $\frac{4}{5}x^2 - x - \frac{6}{5} = 0$, which can be rewritten as the quadratic $4x^2 - 5x - 6 = 0$. Factoring this equation as $(4x + 3)(x - 2) = 0$ yields exactly two distinct real roots: $x = -\frac{3}{4}$ and $x = 2$.

Question 13 Option: (C) — I and II together only

Explanation: Finding the area of a non-standard quadrilateral requires partitioning into triangles using diagonals. Information I provides a side and II provides a diagonal distance; both are needed to calculate the area.

Question 14 Option: (D) — $7/15$

Explanation: Valid pairs (a, b) require irrational roots ($b^2 > 4a^2$ and $b^2 - 4a^2$ is not a square). Out of 15 such pairs within the $a, b \leq 9$ range, 7 pairs satisfy the condition $a + b > 9$.

Question 15 Option: (E) — The third lowest rating obtained is 37

Explanation: Let $r_1 \leq r_2 \leq \dots \leq r_8$ be the sorted ratings. Given the average equations, we derive $r_4 + r_5 = 75$, which makes the median 37.5. If $r_3 = 37$, it violates the constraints on the lower ratings, making Option E definitely false.

Question 16 Option: (A) — 4

Explanation: For the GCD of x and any other integer in $[2, 40]$ to be 1, x must be a prime number in the upper half of the range. The only possible values of x are the primes 23, 29, 31, and 37, which gives exactly 4 choices.

Question 17 Option: (A) — Sumana scored 2 marks in the first test

Explanation: Let x be the first test score and y be the non-zero score of Ravi. Analyzing the geometric progression of Sumana's scores $x, x + 2y, \dots$ under integer constraints reveals that $x = 2$ is the only valid solution.

Question 18 Option: (C) — 0

Explanation: Following the mathematical model for the tests where $x = 4$, the algebraic conditions force the parameters such that Sumana's score in the third test must be exactly 0.

Question 19 Option: (C) — 9

Explanation: Setting $y = 1$ and solving for the maximum possible geometric progression values under the given boundaries restricts Sumana's maximum possible total marks to exactly 9.

Question 20 Option: (B) — I

Explanation: Evaluating the absolute difference between male and female incomes for all cities in both 2005 and 2015 at 2025 prices, the difference (gender gap) is constant (changes the least) in City I.

Question 21 Option: (C) — In terms of 2025 prices, the average monthly income of men of the 10 cities combined was less than Rs. 30,000 in 2005

Explanation: Observing the 2005 price graph, all male monthly income points lie well above Rs. 30,000, making an average of less than Rs. 30,000 mathematically impossible and thus definitely false.

Question 22 Option: (E) — The unscaled gender gaps reduced in all 10 cities from 2005 to 2015

Explanation: Using the inflation conversion ratios (where 2005 unscaled values are $\frac{1}{4}$ of the graphed values), calculations show that the unscaled gaps actually increased in several cities, making Statement E false.

Question 23 Option: (C) — 7 hrs 28 mins

Explanation: Let the distances be calculated from the given times and speed limits. Calculating travel times at 10 km/hr below the limits for each segment and summing them yields exactly 7 hours and 28 minutes.

Question 24 Option: (D) — Approximately 6.67 km south of Oldtown.

Explanation: Solving the relative motion equations on the South-North perpendicular roads with their respective speeds shows that they meet 6.67 km south of Oldtown.

Question 25 Option: (D) — 120 km/hr

Explanation: Calculating the distances of the existing road network and finding the new expressway hypotenuse distance, the required speed limit to reduce the travel time by 20 minutes is calculated to be 120 km/hr.

Question 26 Option: (B) — 4

Explanation: Given the average equations for Reviewer R1, a rating of 4 for Gadget A is uniquely required to solve the remaining system of integer variables without breaking the scale boundaries.

Question 27 Option: (C) — 2

Explanation: Solving the system of average equations with integer constraints between 1 and 5 shows that there are exactly 2 distinct ways R2 could have rated Gadget B.

Question 28 Option: (E) — 3

Explanation: By systematically testing the permissible values for the missing entries, we find exactly 3 mathematically valid overall combinations of missing ratings that preserve all given averages.

Part 2: Decision Making

Question 29 Option: (E) — Those who complete this online management certificate program do well in their career.

Explanation: Since Aarya's primary goal is career growth, concrete evidence of the program's success is the most critical factor in justifying the 3-year bond and academic effort.

Question 30 Option: (D) — Aarya has a better chance of furthering her career in a field of her interest through the executive MBA program.

Explanation: Career satisfaction and performance are strongly tied to personal interest. Pursuing a General Management MBA aligns better with her interest than Agribusiness, which she dislikes.

Question 31 Option: (E) — The business school owned the mistake, and tried their best to help the affected candidates.

Explanation: To restore trust after a major organizational error, the institution must demonstrate accountability and actively work to support the affected individuals.

Question 32 Option: (D) — Join a team of lawyers, petitioning to the founders to end this practice.

Explanation: Collective action through a formal petition protects Lisa from being singled out during her probation while addressing the problem constructively.

Question 33 Option: (D) — She should meet the founders and share that while she has reservations about the practice, she did not send the anonymous email.

Explanation: Direct transparency with the founders addresses the rumors immediately, preserving her integrity while being honest about her opinions.

Question 34 Option: (D) — They should invite suggestions from their young lawyers regarding formulating a new socialization ritual.

Explanation: This shows empathy by involving the affected group in design, while maintaining professional exposure through a newly formulated, constructive ritual.

Question 35 Option: (C) — Ramya should publish the article because any investigation by Aditya Swaroop has enhanced the reputation of *The Pluralist* till date.

Explanation: This provides a justifiable rationale based on historical credibility and track record, outweighing the generalized cautious legal warning on a time-sensitive topic.

Question 36 Option: (A) — Retract the entire article, and publish Ramya's apology in the newspaper.

Explanation: Since the sources admitted they were dishonest, the owner's most responsible action is full retraction and a public apology to preserve institutional credibility.

Question 37 Option: (E) — Assign a new investigative project to Aditya Swaroop, advising him to focus on the new project without worrying about the past project.

Explanation: Moving forward with a new project allows Aditya to rebuild his reputation through clean research, rather than dwelling on a compromised investigation.

Question 38 Option: (C) — Dheeraj should mandate that the senior trainers must allow the young trainers to take at least thirty percent of their training sessions.

Explanation: This policy provides a structured and non-disruptive way to integrate young trainers under the guidance of seniors, protecting client relationships.

Question 39 Option: (A) — She should share with Dheeraj that assigning her client companies to novice trainers will lead to loss of those clients.

Explanation: Raising direct, professional concerns about client loss uses business metrics to address the issue of arbitrary reassignment.

Question 40 Option: (B) — Propose to Dheeraj that in future assignments with the client, Kirti be a co-trainer with Nandini to help improve her performance.

Explanation: Co-training satisfies the client by bringing back the senior while supporting the development of the junior, aligning with organizational goals.

Question 41 Option: (C) — Sukanta needs more time to learn about the dynamics of the eastern market.

Explanation: Initiating massive changes immediately upon joining without local market knowledge is risky; gaining market understanding first is the best course of action.

Question 42 Option: (A) — In Tivanna, the competing media agencies keep defaming each other.

Explanation: Attributing the accusations to standard competitor mudslinging provides a logical reason to maintain the status quo without acting on unverified rumors.

Question 43 Option: (B) — He should wait and watch as the investment in Sukanta may need more time to bear result.

Explanation: Moving marketing in-house causes temporary disruptions; a wait-and-watch approach allows the new team enough time to show results.

Question 44 Option: (B) — BCD

Explanation: Shutting the cafeteria, remote admin, and pharmacy strip have no direct impact on patient survival or core diagnostic functioning, minimizing disruption.

Question 45 Option: (C) — Shut down the cafeteria until further notice and relocate the storage unit.

Explanation: Relocating the storage unit to the shut cafeteria space maintains operations on-site, ensuring quick access to medical supplies.

Question 46 Option: (D) — Bring in a reputed renovation team at triple the cost, which guarantees to finish this work in three days.

Explanation: Although expensive, finishing the work in 3 days stops the massive disruption of turning outpatients away, making it the most sustainable solution.

Question 47 Option: (C) — He should remove all the discounts he was offering and sell at the maximum retail price.

Explanation: Selling at MRP in a high-rent, gated community focuses on margins over volume, which is a sustainable way to increase profitability.

Question 48 Option: (D) — The residents' association should discount the rent for the vegetable vendor to increase competition and ask him to continue.

Explanation: Discounting the old vendor's rent directly addresses the community's concern by bringing back competitive pricing and dedicated services.

Question 49 Option: (C) — Employ helpers to do home delivery within 10 minutes.

Explanation: To compete with a rapid delivery app, Sundaram must leverage his physical proximity to provide equally fast, localized home delivery.

Part 3: Verbal Ability and Logical Reasoning

Question 50 Option: (E) — A, D & F

Explanation: Sentences A, D, and F are grammatically correct. B is incorrect ("discuss about" is redundant), C is incorrect ("good at" instead of "good in"), and E is incorrect ("emphasize the" instead of "emphasize on").

Question 51 Option: (D) — B, D & F

Explanation: B, D, and F are correct. A is incorrect ("fewer cars" instead of "less cars"), C is incorrect ("since Monday" instead of "from Monday"), and E is incorrect ("who won" instead of "that won").

Question 52 Option: (E) — successive, young, adults, hypocritically

Explanation: This option fits perfectly into the passage's flow, addressing the recurring generational hypocrisy where adults judge youngsters for doing the exact same things they once did.

Question 53 Option: (B) — B, A, E, C, D

Explanation: B introduces energy as a habitable factor, A links it to Europa, E highlights the problem of no sunlight there, C introduces Earth's chemical alternative, and D completes the thought.

Question 54 Option: (C) — Unless we are put to test for our beliefs, we do not know what our true beliefs are.

Explanation: The passage emphasizes that we only find out our strength (or goodness) by fighting against temptation; thus, testing is necessary to truly know ourselves.

Question 55 Option: (B) — C, E, A, D, B

Explanation: C introduces the single currency, E discusses Germany's treaty design, A outlines the budget deficit test for Italy, D introduces Prodi's decision, and B completes with Belgium's context.

Question 56 Option: (E) — Art expresses what humans cannot communicate in words.

Explanation: The "unsayable" refers to deep human emotions and truths that find expression through artistic forms rather than literal speech.

Question 57 Option: (E) — Good performance makes organizations overlook their employees' state of mind.

Explanation: Since bored employees continue to produce good results, the organization ignores their state of mind, highlighting a gap in talent management.

Question 58 Option: (A) — Our understanding of others, based on our beliefs, may not be true.

Explanation: The cartoon illustrates that the man's positive belief about the dog's joy is completely disconnected from the dog's actual internal depression.

Question 59 Option: (B) — Unless one is emotionally detached from the event, it is impossible to appreciate a comical view.

Explanation: The "thoroughly calm soul" refers to an "anesthesia of the heart," meaning that emotional distance is necessary to appreciate humor.

Question 60 Option: (E) — Humour only springs from experiences that demand momentary anesthesia.

Explanation: While the passage notes that comedy *demands* emotional detachment, saying humor *only* springs from such experiences is a distortion that cannot be inferred.

Question 61 Option: (A) — Life is a tragedy when seen in close up but a comedy in long-shot.

Explanation: This matches the author's argument on detachment; looking at an event from a distance (long-shot) removes the emotion, turning tragedy into comedy.

Question 62 Option: (E) — Because principles clash with your personality, character is needed.

Explanation: The author defines character as prioritizing values (principles) over immediate instincts (personality), meaning character is the tool to resolve this clash.

Question 63 Option: (C) — Sustainable success in life requires strong character skills.

Explanation: The West Africa Experiment shows that prioritizing long-term values over short-term instincts (character) is key to dramatic personal and economic impact.

Question 64 Option: (C) — Character skills prepare you for an uncertain future.

Explanation: For entrepreneurs, the ability to control instincts and remain resilient (character) is more critical for navigating unpredictable business environments.

Question 65 Option: (D) — Both divide the world between "us" and "them."

Explanation: The passage links rodent scent-matching and human cultural kin selection, showing both species fundamentally divide their social groups into in-groups and out-groups.

Question 66 Option: (E) — Humans' in-group/out-group thinking is influenced by their space and time.

Explanation: "Fluidity and situational dependence" implies that human boundaries of "us" are arbitrary, historical, and change based on geographical and social contexts.

Question 67 Option: (D) — Humans' interpretation of specific events depends on their emotional association with them.

Explanation: The mention of major historical battles shows that we associate with and interpret these events based on our current cultural/group emotional ties.

Question 68 Option: (B) — The root of all problems in the world is greed.

Explanation: While the passage discusses "greedy work" (demanding complete availability), generalizing this to say "greed is the root of all world problems" is an overreach.

Question 69 Option: (C) — Work that requires more time investment tend to pay more.

Explanation: This directly defines "greedy work," where jobs requiring disproportionate time and sacrifice offer significantly higher, non-linear compensation.

Question 70 Option: (B) — Greedy work reinforces extant gender norms, leading to gender pay gap.
Explanation: Since domestic labor falls disproportionately on women, they cannot participate in "greedy work," which solidifies the gender pay gap.

Question 71 Option: (D) — Conflict between transformation and escapism.
Explanation: The poem juxtaposes the active, straining ceiling fan with its surreal dream of becoming a "spider lily," representing a struggle between function and escape.

Question 72 Option: (B) — Person brings passionate intellectual and emotional energy.
Explanation: "Hot ideas" represent intense, passionate intellectual and emotional energy that disrupts the quiet space, forcing the environment to work harder.

Question 73 Option: (A) — Wealth and privilege cannot undermine meritocracy.
Explanation: The passage explicitly argues that meritocracy is a myth *because* wealth and hereditary privilege undermine and perpetuate inequality, making Option A false.

Question 74 Option: (B) — In an unequal society, any attempt to execute meritocracy perpetuates inequality.
Explanation: Without equal starting opportunities, a purely "merit-based" competition simply rewards those who started with systemic advantages, extending the divide.

Question 75 Option: (A) — Meritocratic system does not acknowledge the initial disadvantages in opportunities.
Explanation: Affirmative action defenders argue that true merit cannot be measured fairly without first correcting or acknowledging the initial, unequal starting positions.

Part 4: General Knowledge

Question 76 Option: (B) — Dronacharya Award
Explanation: Instituted in 1985, this is the highest sports award given to coaches in India for their outstanding contribution to sports.

Question 77 Option: (A) — 1-C, 2-D, 3-B, 4-A
Explanation: Match: Tata (Carnegie Medal), Manmohan Singh (World Statesman), Zakir Hussain (Grammy), Shyam Benegal (Dadasaheb Phalke).

Question 78 Option: (C) — Shrinkflation
Explanation: This term describes the phenomenon where a company reduces the size of a product while keeping its price the same to hide inflation.

Question 79 Option: (A) — Orbital
Explanation: Samantha Harvey won the prestigious 2024 Booker Prize for her beautifully written, space-themed novel "Orbital."

Question 80 Option: (E) — Andhra Pradesh
Explanation: Dhimsa is a tribal folk dance performed primarily by the women of Araku Valley in Andhra Pradesh.

Question 81 Option: (E) — Sirimavo Bandaranaike
Explanation: Sirimavo Bandaranaike of Sri Lanka became the world's first elected female Prime Minister in July 1960.

Question 82 Option: (A) — Ding Liren
Explanation: India's young Grandmaster Gukesh Dommaraju faced and defeated Ding Liren in the 2024 World Chess Championship finals.

Question 83 Option: (B) — 1-D, 2-E, 3-C, 4-B, 5-A
Explanation: Match: Weir (Martian), Liu (Three Body Problem), Hawking (Brief History of Time), Wells (Time Machine), Herbert (Dune).

Question 84 Option: (D) — Anuvadini
Explanation: Anuvadini is an AI-based translation tool developed by the AICTE to translate textbooks and study materials into regional languages.

Question 85 Option: (C) — Manipur
Explanation: The Keibul Lamjao National Park on Loktak Lake in Manipur is celebrated as the world's

only floating national park.

Question 86 Option: (E) — Ayhika Mukherjee & Sutirtha Mukherjee

Explanation: They secured India's historic first-ever women's doubles medal at the Asian Table Tennis Championships.

Question 87 Option: (C) — Non-Indian friends of Indian diaspora

Explanation: The Government's "Chalo India" e-visa program allows members of the Indian diaspora to nominate non-Indian friends for free e-visas.

Question 88 Option: (D) — Indonesia

Explanation: Mount Marapi is an active stratovolcano located in the West Sumatra province of Indonesia.

Question 89 Option: (D) — The President

Explanation: The Constitution of India designates the President of India as the supreme commander of all armed forces.

Question 90 Option: (A) — Daron Acemoglu, Simon Johnson & James A. Robinson

Explanation: These three academics won the 2024 Nobel Economics Prize for their ground-breaking work on how institutions affect global prosperity.

Question 91 Option: (B) — Ukraine

Explanation: Despite having close ties and ongoing accession talks, Ukraine is not a formal member of NATO as of the end of 2024.

Question 92 Option: (E) — Nihon Hidankyo

Explanation: The 2024 Nobel Peace Prize was awarded to Nihon Hidankyo, a Japanese organization of atomic bomb survivors, for their anti-nuclear advocacy.

Question 93 Option: (D) — 1-E, 2-C, 3-B, 4-D, 5-A

Explanation: Match: AirAsia (Malaysia), AZAL (Azerbaijan), Jeju Air (South Korea), Indigo (India), Tigerair (Singapore).

Question 94 Option: (B) — Amazon

Explanation: Amazon completed its high-profile acquisition of MGM Studios to expand the film and television library on its Prime Video platform.

Question 95 Option: (C) — Yantar Shipyard, Russia

Explanation: The stealth frigate INS Tushil was constructed for the Indian Navy at the Yantar Shipyard located in Kaliningrad, Russia.