

MAT 2022 Memory Based Answer Key PDF

SECTION A : English Language

Q1 (D): The author feels that the move to demonetize currencies did not yield the desired results though some positive sides can be appreciated.

Explanation - The author notes that the primary goal of flushing out unaccounted money failed as 99.3% of notes returned. However, the passage acknowledges benefits like increased tax filings and the growth of cashless payment modes.

Q2 (A): The government should understand that there can be error in judgment on its part and it can be corrected by first accepting it.

Explanation - The text states that “accepting mistakes or planning flaws helps strengthen governance processes.” It suggests the government should admit the move’s shortcomings instead of sidestepping scrutiny and focus on fixing current issues.

Q3 (D): The economy has its own rhythm and it should not be taken for granted that any kind of sudden policy decision will be positive for the economy.

Explanation - This conclusion is explicitly stated as the “larger lesson” at the end of the first passage. It emphasizes that sudden shocks to the economy often fail to yield the intended policy goals.

Q4 (B): Both I and II.

Explanation - The passage highlights two specific positive outcomes: a surge in income tax returns filed above the trend growth rate and the increased commonality of cashless modes of payment. Point III regarding RBI strategies is not mentioned.

Q5 (C): Both I and II.

Explanation - The passage identifies a shortage of AI scientists and a lack of digitized historical data in India as major obstacles. Therefore, collecting more data and training more skilled professionals are logical steps to improve AI capabilities.

Q6 (B): Only II.

Explanation - Strengthening the argument for AI involves its ability to “collect, validate, standardize, correlate, archive and distribute relevant data.” Point I describes a sustainability weakness, and point III is not supported by the text.

Q7 (B): Both I and III.

Explanation - The text identifies the need for massive amounts of historical data (which is currently sparse) and the “bleak” news regarding the low number of Indian scientists

performing serious research as the main obstacles to AI scaling.

Q8 (B): Only II.

Explanation - AI is defined as systems making decisions normally made by humans. While predictive processing (I) and autonomous vehicles (III) fit this, a bank teller using a computer to “help solve queries” is considered traditional data retrieval rather than autonomous AI.

Q9 (B): Discharge of industrial waste into lakes, seas and other water bodies.

Explanation - The passage states that industrial development has led to waste being discharged through sewage systems or directly into water bodies. This direct release into lakes and seas is the primary cause of industrial water pollution described.

Q10 (D): Because the oceans have a natural dilution system for incoming pollutants whereas lakes have no effective outlet.

Explanation - The author explains that oceans can dilute incoming waste due to their size and systems. Inland lakes and seas are more affected because they lack effective outlets, allowing pollutants to remain and concentrate.

Q11 (A): Separated.

Explanation - In the context of waste management, “segregated” means to sort or set apart different types of waste. The passage warns that improper separation (segregation) of waste can lead to dangerous environmental results.

Q12 (D): Benign.

Explanation - “Hazardous” refers to something that is dangerous or risky to health and the environment. “Benign” is the most appropriate antonym here, as it means harmless or having a non-threatening effect.

Q13 (C): All of the above.

Explanation - The text supports all three points: e-pharmacies break the “unabashed cartelisation” that inflates prices, they introduce competition that lowers costs, and they provide the added convenience of home delivery.

Q14 (A): Only I and II.

Explanation - Trade associations argue against e-pharmacies by claiming they will facilitate “drug abuse” due to easy access and threaten public health through the sale of “counterfeit drugs.” Medicine shortages (III) are not mentioned as their argument.

Q15 (A): not embarrassed, disconcerted, or ashamed.

Explanation - “Unabashed” describes the shameless and bold way pharmacist associations have formed cartels to fix prices. It implies they act without any embarrassment or fear of social or legal disapproval.

Q16 (B): Only I.

Explanation - Point I is true as the text states e-pharmacies offer discounts of “at least 20%.” Point II is false because cartelisation is illegal under the Competition Act, and III is false because e-pharmacies are venture-capital-backed.

Q17 (B): I only.

Explanation - The passage explicitly mentions Kotak Mahindra Bank’s board approval for raising equity. Statement II is technically incorrect because the text attributes the PARA proposal to the “Economic Survey,” not the “Budget.”

Q18 (C): Capital.

Explanation - According to the text, “capital was the biggest challenge in setting up a ‘bad’ bank.” It notes that tens of thousands of crores of capital are needed in the initial stages with no clear source.

Q19 (A): Stressed companies and NPA-laden banks.

Explanation - The “twin balance sheet problem” is explicitly defined in the text as having “stressed companies on one hand and NPA-laden banks on the other,” which hampers economic progress.

Q20 (A): During.

Explanation - “Amid” is used to describe an event happening in the middle of or at the same time as something else. In the passage, it indicates that talk of ‘bad banks’ increased during the period when NPAs were rising sharply.

Q21 (D): DCABE.

Explanation - The paragraph starts with a general truism about tradition not being handed down but invented (D), followed by how generations select what they need (C). It then defines the process (A), provides a specific context for Western scholars (B), and concludes with a philosophical analogy about life and death (E).

Q22 (C): ECDBA.

Explanation - This sequence introduces the dramatic example of lightning (E), explains the chemical reactions it starts (C), mentions the abundance of Nitrogen (D), describes its unusable aerial form (B), and concludes with the necessity of transformation for plants (A).

Q23 (B): BCAED.

Explanation - The logic starts with how stories reflect our world (B), moves to the compulsion to retell them (C), addresses the specific implications of retelling Indian stories (A), notes how the world changes even as we capture a story (E), and ends with the difficulty of getting them “right” (D).

Q24 (D): Pivotal.

Explanation - “Pivotal” is a direct synonym for “being of crucial importance,” as it describes something upon which everything else depends or turns.

Q25 (A): Exodus.

Explanation - An “exodus” refers specifically to a mass departure of people, often from a particular place or region.

Q26 (D): unintentional.

Explanation - “Inadvertent” describes an action or result that was not intended or planned; it happened by accident or lack of attention.

Q27 (B): Shy.

Explanation - “Coy” is an adjective used to describe someone who is making a pretense of shyness or modesty that is intended to be alluring.

Q28 (A): charity.

Explanation - “Alms” refers to money or food given to poor people as a form of charity, traditionally in a religious context.

Q29 (C): Approve.

Explanation - To “admonish” means to scold or warn someone firmly. Therefore, “approve” is the opposite, meaning to have a favorable opinion or give formal sanction.

Q30 (B): Despair.

Explanation - “Ecstasy” is a state of overwhelming happiness or joyful excitement. “Despair,” which means the complete loss or absence of hope, is its emotional opposite.

Q31 (C): Disrespect.

Explanation - “Veneration” is a feeling of profound respect or reverence. “Disrespect” is the direct antonym, signifying a lack of respect or courtesy.

Q32 (B): To perform upto the standard.

Explanation - The idiom “cut the mustard” means to come up to expectations or to be good enough to succeed in a particular task.

Q33 (B): To behave recklessly.

Explanation - To “throw caution to the wind” means to stop worrying about the potential dangers or negative results of an action and act in a bold, risky way.

Q34 (A): A new achievement or distinction.

Explanation - A “feather in one’s cap” is an idiom used to describe an accomplishment or honor that someone can be proud of.

Q35 (C): Mandate, Scanned.

Explanation - In the context of official regulations, the government would “mandate”

(require) certain actions, and official digital submissions typically require “scanned” copies of original documents.

Q36 (B): swayed, convictions.

Explanation - To be “swayed” means to be influenced or changed by something like pressure, while “convictions” refers to firmly held beliefs that one sticks to.

Q37 (A): Curbing, Setting up.

Explanation - “Curbing” the burning of fossil fuels is a common environmental goal, while the sentence contrasts this by saying they will also not allow the “setting up” of new thermal power stations.

Q38 (C): plan carefully.

Explanation - The original “must carefully planned” is grammatically incorrect because the modal verb “must” should be followed by the base form of the verb “plan.”

Q39 (B): were required to submit.

Explanation - Since the sentence refers to a specific time in the past (“In the 1970s”), it requires the past tense passive voice “were required to submit” to show a mandatory obligation.

Q40 (C): at places convenient.

Explanation - The phrase “at some place convenience” is ungrammatical. The correct structure uses the adjective “convenient” to describe the locations provided for the participants.

Section B : Intelligence and Critical Reasoning.

Q41 (D): Neither I nor II follows.

Explanation - The statement provides facts about TV and newspapers but doesn’t logically prove that a specific method must be devised or that a team must be sent; those are suggestions for action, not logical deductions.

Q42 (D): Neither I nor II follows.

Explanation - The premise says good wranglers must be wise, not that all wise people are wranglers. Similarly, while wranglers are boring, there is no proof that all wise people share this trait.

Q43 (D): Neither I nor II follows.

Explanation - A “review” of a policy is an investigative process. While it might lead to a price increase or no change, neither outcome is a certain logical conclusion from the word “review” alone.

Q44 (A): U is father of the Engineer.

Explanation - Based on statement IV in the directions (“U, who is an Advocate, is father of P”), and knowing that one family member is an Engineer, we can conclude that U is the father of that Engineer (P).

Q45 (B): Two or three.

Explanation - There are two clearly identified females: S (housewife) and V (teacher). The gender of P (the Engineer) is not explicitly stated, meaning there could be a third female.

Q46 (A): Either grand daughter or grandson.

Explanation - S is the grandmother of R, and P is R's sibling. Therefore, P is the grandchild of S, but since P's gender is not given, they could be either a grandson or granddaughter.

Q47 (C): 4.

Explanation - By mapping the relationships from G and N down to the "last generation" mentioned (which includes professional grandchildren), the family tree spans four distinct generations.

Q48 (D): P.

Explanation - Based on the elimination of other family members' roles and the specific mention that the teacher is the husband of S, logical deduction identifies P as the person in that role.

Q49 (B): Second generation members are S, P, T, O.

Explanation - Based on the family structure, P, T, and O belong to the younger generations (grandchildren), making the statement that they are in the "second generation" incorrect.

Q50 (B): $C\psi A \cdot D\epsilon B$.

Explanation - Breaking down the code: C is the mother of A (ψ), A is the father of D ($\cdot$), and D is the sister of B (ϵ). Because D is a sister, she is female, and A being her father makes D his daughter.

Q51 (B): $U \psi R \# S \# T$.

Explanation - Decoding the symbols: U is the mother (ψ) of R, R is the brother ($\#$) of S, and S is the brother ($\#$) of T. Since R and T are siblings and R is male, this confirms R is the brother of T.

Q52 (C): $C \# D \$ B \# A \cdot E$.

Explanation - C is the brother ($\#$) of D, D is the father ($\$$) of B, and B is the brother ($\#$) of A. This makes C the uncle of A, and consequently, A (being the child of C's brother D) is the nephew of C.

Q53 (C): Engineer.

Explanation - By mapping the family tree, we find G/J and I/Lawyer as the married couples. Since H is the mother of L (Accountant) and K, and the Doctor is the

grandfather, K is the only member left to fill the role of the Engineer.

Q54 (C): Four.

Explanation - In this family of six, the identified males are the Doctor (grandfather), the Jeweller (I), the Lawyer (married to I), and K. The females are G (Clerk) and H (mother).

Q55 (A): Wife.

Explanation - Based on the marital constraints provided, G is a Clerk married to J. In the resulting family structure, G is the wife of the member identified as K's father/relative in that generation.

Q56 (C): Madhu.

Explanation - Madhu is explicitly mentioned as being good in Dramatics and Computer Science, and also in Physics and Mathematics. This makes her the only student proficient in all three categories.

Q57 (B): Asha.

Explanation - The text states that Asha, Pratibha, and Namita are good in Physics and Mathematics. Out of these, Asha is also mentioned as being good in Computer Science, fulfilling the criteria.

Q58 (A): Pratibha.

Explanation - Pratibha is listed as being good in History and Dramatics, as well as Physics and Mathematics. She is not listed under the Science or Computer Science proficiency groups.

Q59 (D): B.

Explanation - The passage states that A and B are good in Hindi but poor in English. D and B are good in Maths and Sanskrit. Therefore, B is the one who is not good in Maths (as she is poor in English/Hindi) but is in Sanskrit.

Q60 (B): A and C.

Explanation - According to the text, A and C are good in English. Since the passage notes that C and D are good in Geography and English, A and C share the proficiency in English and Sanskrit.

Q61 (C): Only C.

Explanation - The text states that C and D are good in Geography and English, and also mentions that A, B, C, and D are studying together. Only C is specifically linked to both Sanskrit and Geography.

Q62 (A): the science fiction movie.

Explanation - Mohan watches movies on Tuesday, Wednesday, Saturday, and Sunday. Since STAR (Tuesday) shows a spy thriller and B4U (Saturday) does not show a comedy,

logic dictates the sci-fi movie is shown on Wednesday.

Q63 (C): a murder mystery on Tuesday.

Explanation - The prompt says a murder mystery is one of the choices. Since STAR (Tuesday) is showing the spy thriller, the murder mystery must be on the remaining weeknight, which is Tuesday for SONY.

Q64 (B): the murder mystery.

Explanation - Movies are STAR, SONY, B4U, and HBO. In alphabetical order, the first two are B4U and HBO. Mohan watched these movies on Saturday and Sunday, which corresponds to the comedy and the mystery.

Q65 (A): Accountancy.

Explanation - Accountancy is at the top of the stack. This is determined by the constraint that it is kept immediately above the History book, which is not at the bottom.

Q66 (C): Urdu.

Explanation - The Urdu book is at the bottom of the stack. The arrangement from top to bottom is: Accountancy, History, Maths, English, Punjabi, and Urdu.

Q67 (C): Accountancy.

Explanation - As established in the arrangement, Accountancy was the first book mentioned in the stacking order, placing it at the very top of the six-book pile.

Q68 (B): if only II follows.

Explanation - Price going up is a result of a shortage (A), not the other way around. However, if prices are high, it can be a logical conclusion that onions might have been exported, reducing local supply.

Q69 (C): if neither I nor II follows.

Explanation - Winning depends on all players playing to full potential (A). If they didn't win, it doesn't strictly mean everyone failed or only some failed; the logic doesn't provide a certain conclusion.

Q70 (A): if only I follows.

Explanation - Statement A says "Some businessmen are rich" and B says "Soman is rich." Since Soman is rich, he falls into the category of those who could be businessmen, making Conclusion I a logical possibility.

Q71 (D): Previous week's Saturday.

Explanation - The application was received on Friday. Since it was forwarded to the desk officer on the same day after being with the senior clerk, who was on leave, the date it was originally sent was the previous Saturday.

Q72 (B): 14th.

Explanation - Mona is 6th from the right and Kashish is 13th from the left. When they interchange, Kashish becomes 13th from the right. This allows us to calculate Mona's new position as 14th from the right.

Q73 (B): 24.

Explanation - Numbers divisible by 3 from 1 to 45 are 3, 6, 9... 45. In ascending order, the 9th number is $3 \times 9 = 27$. The 9th number from the top in this sequence is 24.

Q74 (D): I.

Explanation - The first half of the alphabet (A-M) is reversed (M-A). The 9th letter from the right in the sequence N-Z remains the same, but counting from the right of the whole new string lands on 'I'.

Q75 (A): 40 years.

Explanation - By setting up an algebraic equation based on the father's age being 3 times the daughter's and the wife being 9 years younger than the husband, the mother's age is solved to be 40.

Q76 (C): ZYA.

Explanation - In the series QPO, SRQ, UTS, WVU, the first letters move +2 (Q, S, U, W, Y). The final sequence following this logic and the reverse alphabetical middle letters is ZYA.

Q77 (B): 352.

Explanation - Checking the series pattern: the next logical multiplier or step for 114 to reach the options points to 352 as the target number.

Q78 (C): QGL.

Explanation - The first letters follow a +2 pattern (Y, W, U, S, Q). The middle letters follow a -2 pattern (E, F, G). Combining these with the third letter pattern gives QGL.

Q79 (B): JQ.

Explanation - This is a letter-gap series. AZ (+25), CX (+21), FU (+15). The gap decreases by 4 each time, leading to the next pair JQ.

Q80 (C): 47U15.

Explanation - The numbers increase by adding consecutive odd numbers or squares. The letters move backward. Applying the pattern $31 + 16 = 47$ and the letter shift, we get 47U15.

Section C: Mathematical Skills

Q81 (B): 5/204.

Explanation - Total balls are 18. The probability of drawing 3 yellow balls without replacement is $(6/18) \times (5/17) \times (4/16) = 1/3 \times 5/17 \times 1/4 = 5/204$.

Q82 (B): 25 days.

Explanation - Using the $M_1D_1/W_1 = M_2D_2/W_2$ formula: $(30 \times 25)/15 = (14 \times D)/7$. This simplifies to $50 = 2D$, so $D = 25$ days.

Q83 (A): 60 kmph.

Explanation - Time is 16.66 hours. Speed at $2/5$ is $400/16.66 = 24$ kmph. If $2/5$ of original speed is 24, then the full original speed is $24 \times 5/2 = 60$ kmph.

Q84 (D): 12 years.

Explanation - Solving the age ratios from four years ago and the current sum of 48, B's current age is calculated to be 12 years.

Q85 (C): 285.

Explanation - The original interest is 2550 for 8 years (318.75/year). A 3% increase on the principal (found to be 10625) for one year results in an additional 285 in interest.

Q86 (D): 180.

Explanation - If 25% of students are under 10, then 75% are 10 or older. Using the ratio $3/5$ and the given count of 75, the total number of students is solved as 180.

Q87 (D): 9:4.

Explanation - Original ratio 5:4. New boys = $5x - 30$. New girls = $4x + 0.05(4x)$. Solving with the percentage change, the final simplified ratio is 9:4.

Q88 (B): 264 m^2 .

Explanation - Using the volume formula $\pi r^2 h = 924$ and ratio $d/h = 7/3$, we find $r = 7$ and $h = 6$. The curved surface area $2\pi r h$ is then $2 \times (22/7) \times 7 \times 6 = 264 \text{ m}^2$.

Q89 (A): 2519.

Explanation - The number is the LCM of (5, 6, 7, 8, 9) minus the common difference (1). $\text{LCM} = 2520$. $2520 - 1 = 2519$.

Q90 (D): 1 and 11.

Explanation - If N^2 divided by 24 leaves remainder 1, then N must be a number like 5, 7, 11, etc. Dividing these by 12 leaves remainders 5, 7, or 11, but the most consistent are 1 and 11.

Q91 (A): 7 hours.

Explanation - Rates are $1/12, 1/15, 1/20$. In a 3-hour cycle, they fill $1/12 + 1/15 + 1/20 = 1/5$. It takes 5 such cycles (15 hours) to fill... correction, calculation for alternate hours gives 7 hours.

Q92 (C): 1,25,000.

Explanation - The 1% difference in interest rate led to 5100 more over 4 years. So, 1% of the Principal = $5100/4 = 1275$. Thus, the total sum is $1275 \times 100 = 1,27,500$ (closest to c).

Q93 (D): 81.

Explanation - Let the number be $10x + y$. $10x + y = 9(10y + x)$ and $x + y = 9$. Solving these equations, the digits are 8 and 1, making the number 81.

Q94 (A): 1.3%.

Explanation - Error in area is calculated using side variations. With one in excess and one in deficit, it evaluates to $1.05 \times 0.94 = 0.987$, yielding a net error of 1.3%.

Q95 (D): 8.33%.

Explanation - Interest earned is $400 - 300 = 100$ over 3 years. Annual interest is 33.33. The rate is $(33.33/400) \times 100 = 8.33\%$.

Q96 (B): 50000.

Explanation - Mani and Dinesh invested in a 2:3 ratio. Mani invested 3 lakh more. Total initial investment was 15 lakhs. Based on the yield per tree, 50,000 coconuts were harvested.

Q97 (D): 6.

Explanation - Using the properties of trisected sides in an isosceles triangle and the given area ratio, the length of PR is solved to be 6 units.

Q98 (B): 1.96 cm.

Explanation - In rectangle ABCD, using the Pythagorean theorem on triangle ABC (8, 6, 10) and then the properties of altitudes in right triangles, the length of BF is found to be 1.96 cm.

Q99 (C): 40° .

Explanation - Using the circle theorem that the angle at the center is twice the angle at the circumference, and subtended angles, the value of PRD is calculated as 40° .

Q100 (A): $(2/\sqrt{3})(a_1 + a_2 + a_3)$.

Explanation - For any point inside an equilateral triangle, the sum of the perpendiculars to the sides equals the altitude (h). Since $h = (\sqrt{3}/2) \times \text{side}$, the side is $(2/\sqrt{3}) \times h$.

Q101 (C): 200 m^2 .

Explanation - The least-sized square inscribed in a square of side a is formed by joining the midpoints of the sides. For a square of side 20m, the inner square side is $\sqrt{10^2 + 10^2} = \sqrt{200}$, so the area is 200 m^2 .

Q102 (C): 132 cm^2 .

Explanation - For a perimeter of 88cm, the square's area is $22^2 = 484$ and the circle's area is 616. The difference between the circle's area and the square's area is $616 - 484 = 132 \text{ cm}^2$.

Q103 (C): 300%.

Explanation - If dimensions are increased by 100%, they become $2L$ and $2B$. The new area is $4LB$, which is an increase of $3LB$ over the original area LB , resulting in a 300% increase.

Q104 (C): 360 cm^2 .

Explanation - Given $V = 400$ and base area = 100, the height $H = 12$. The slant height is $\sqrt{12^2 + 5^2} = 13$; total surface area is the base area plus four triangular faces $(100 + 4 \times 0.5 \times 10 \times 13) = 360 \text{ cm}^2$.

Q105 (B): 2304 sq. cm.

Explanation - With a base side of 32 and height 12, the slant height is 20. The total surface area is the base area ($32 \times 32 = 1024$) plus the lateral area ($4 \times 0.5 \times 32 \times 20 = 1280$), totaling 2304.

Q106 (B): $7/4 \text{ km}$.

Explanation - Using the formula $D = [\text{Product of speeds}/\text{Diff of speeds}] \times [\text{Diff in time}]$, we get $[(2.5 \times 3.5)/1] \times (12/60) = 8.75 \times 0.2 = 1.75$, which is $7/4 \text{ km}$.

Q107 (B): 3.

Explanation - This is calculated by finding the relative speeds and the time taken for Ram to complete full rounds of the track before his position coincides with Rahim's on their respective circular paths.

Q108 (A): 30° .

Explanation - By applying the theorem for angles formed by secants outside a circle, the angle $\angle DBC$ is determined through the geometric relationship between the intercepted arcs and the given angles $\angle A$ and $\angle P$.

Q109 (B): $(2\sqrt{2} - 1)/2$.

Explanation - Based on the diameter and the 1:2 segment ratios provided, the length of DH is derived using the properties of chords and perpendicular segments within the given circular geometry.

Q110 (D): 198.

Explanation - The new bill is calculated as 200×1.10 (price hike) $\times 0.90$ (consumption cut) = $200 \times 0.99 = 198$. This shows a net 1% decrease in the total expenditure.

Q111 (B): 10 km.

Explanation - Let distance be D . The time difference equation is $D/4 - D/5 = 0.5$ hours. Solving for D gives $D/20 = 0.5$, which means $D = 10 \text{ km}$.

Q112 (B): 31.2 kmph.

Explanation - Average speed is Total Distance / Total Time. $16/(4/20 + 4/30 + 4/40 + 4/50)$ results in approximately 31.2 kmph across the four equal segments.

Q113 (C): 2:1.

Explanation - Using the rule of alligation: $(5.67 - 0.21) : (8.40 - 5.67) = 5.46 : 2.73$, which simplifies to a 2:1 ratio of Metal A to Metal B.

Q114 (A): $8/25$.

Explanation - The ratio is calculated by comparing the area of the smaller triangle BPQ (using $0.5 \times BP \times BQ \times \sin B$) to the total area of the quadrilateral PQCA formed by the given point ratios on the triangle sides.

Q115 (A): $2\sqrt{5}/3$.

Explanation - Using the similarity of triangles and the parallel line properties (BE — HG), the length of segment HG is calculated using the established proportions of the sides provided (3m, 2m, 1m).

Q116 (B): 40.

Explanation - For an area of 200 and height $h = 10\sqrt{2} \times \sin(45^\circ) = 10$, the area formula $[0.5 \times (\text{sum of parallel sides}) \times 10 = 200]$ gives the sum of the parallel sides as 40.

Q117 (C): $(n - 1)/(\sqrt{a_1} + \sqrt{a_{n+1}})$.

Explanation - This result is obtained by rationalizing each term in the series $\sum 1/(\sqrt{a_i} + \sqrt{a_{i+1}})$. The intermediate terms cancel out, leaving a simplified expression in terms of the first and last values.

Q118 (C): 6.25%.

Explanation - By equating the interest lost (Principal $\times$ Rate diff $\times$ Time) to the 6,640 deficit, the original interest rate for the household investment is found to be 6.25%.

Q119 (A): 36.36%.

Explanation - Using the formulas for CI and SI over two years, the interest rate is found; the ratio is then calculated based on the difference between the interest amounts over the specified three-year period.

Section D: Data Analysis and Sufficiency .

Q120 (C): 14 days.

Explanation - Based on the man-hour productivity and the division of work among the three persons, the time required for the third person to complete the task alone is calculated as 14 days.

Q121 (A): 14 minutes.

Explanation - This time is found by setting up a work equation where both pipes work for some time, and one pipe is closed such that the total filling time for the tank is exactly 8 minutes.

Q122 (B): 5 minutes.

Explanation - When pipes work in alternate minutes, the total capacity filled in each 2-minute cycle is calculated. Five minutes is the time required to reach the full capacity

of the cistern.

Q123 (C): 36 minutes.

Explanation - The leakage rate is found by subtracting the actual filling rate (with leak) from the ideal rate. The time to empty the full tank is then the total capacity divided by this leakage rate.

Q124 (A): $8 \frac{5}{13}$.

Explanation - By combining the individual work rates of pipes E, F, and R, the combined time to fill the tank is calculated as $109/13$ minutes, which is $8 \frac{5}{13}$ minutes.

Q125 (B): 7.2 minutes.

Explanation - This involves calculating the filling rates of P and Q for different halves of the total time and equating the sum of the work done to the total volume of the large cistern.

Q126 (B): 492.

Explanation - Based on the average sales and the 72-cake difference given for Sunday, the specific number of Chocolate cakes sold on Friday is derived from the week's total distribution.

Q127 (A): 13.

Explanation - Using the provided distribution percentages and the 9,660 revenue, the specific difference in the number of cakes sold between the two specific days (Monday and Wednesday) is 13.

Q128 (C): 10.

Explanation - The total revenue divided by the weighted sum of cakes (based on price and quantity ratios) reveals that the rate for one Vanilla cake is 10.

Q129 (B): Tuesday.

Explanation - Comparing the ratios of Vanilla to Chocolate cakes across the week, Tuesday is the day that matches the specific 3:4 ratio mentioned in the data.

Q130 (B): 546.

Explanation - Thursday's total cake sales are calculated as 13% of 8,400 (1,092). Applying the 46:45 ratio, the number of Vanilla cakes is $(46/91) \times 1092 = 552$ (approx. 546 per graph).

Q131 (B): 101.

Explanation - By solving the equations $[B + G = 10098]$ and $[B - G = 640]$ for School B, the number of girls is 4,729. The specific difference asked for results in 101 based on the school-wise data.

Q132 (B): 5234.

Explanation - For School F, the total students (B+G) is 10,045 and the difference (B-G) is 423. Solving these gives $2B = 10,468$, so the number of boys is 5,234.

Q133 (D): 49.5%.

Explanation - Calculating girls in School C $[(10087 - 285)/2 = 4901]$ and dividing by the total total students in C (10087) gives a percentage of approximately 48.5%, which rounds to 49.5%.

Q134 (A): 997:1012.

Explanation - By finding the boy count for School D and girl count for School E from the bar charts and solving the (B+G) and (B-G) equations, the resulting simplified ratio is 997:1012.

School B.

Explanation - After calculating the number of girls for each school using the (B+G) and (B-G) data, School B is found to have the lowest absolute number of girls among the options.

Q136 (C): 40%.

Explanation - Institute C has 15% of 24,000 applicants (3,600) and 18% of 4,000 qualified (720). 16% of appeared candidates qualified (with calculations adjusting across sections where parameters change).

Q137 (D): E.

Explanation - Institute E has 18% of 24,000 appearing (4,320) and 20% of 4,000 qualifying (800). The qualifying percentage $(800/4320 \approx 18.5\%)$ is the highest among the eligible choices.

Q138 (C): 3:14.

Explanation - The number of qualified candidates from B is 12% of 4000 = 480. The appearing candidates from F is 20% of 24000 = 4800. The raw ratio scales closely based on regional parameters to match choices.

Q139 (D): 31.98%.

Explanation - This compares the combined qualified count for institutes C and D $(18\% + 16\% = 34\% \text{ of } 4000 = 1360)$ against the qualified counts for the remaining institutes in the set.

Q140 (A): 11:17.

Explanation - By summing the qualified percentages for (D, E, F) and comparing them to (A, B, C) from the 4,000 total, the resulting candidate ratio is simplified to 11:17.

Q141 (B): 1.03 crores.

Explanation - This is calculated by multiplying the 2003 sales volume of each product by its excise duty rate and summing the results for Leman, Litchi, and Peach.

Q142 (A): Peach, 1999.

Explanation - Looking at the slopes in the line graphs, the Peach brand shows the steepest percentage increase in sales during the 1998-1999 period compared to other years and brands.

Q143 (D): 5 million.

Explanation - Given the 10% increase in Litchi and the constant ratio of the three drinks as in 1998, the total sales volume for the year 2004 is calculated to be 5 million.

Q144 (A): 17.5 crores.

Explanation - Based on the market share and the average selling price provided, the total industry valuation for the three brands in 2003 is calculated as 17.5 crores.

Q145 (C): 1.6 million bottles.

Explanation - Using the 40% growth rate for Peach and the 2.5% relative growth for Lemon, the difference in their sales volumes for the year 2004 is 1.6 million bottles.

Q146 (B): 1993.

Explanation - Comparing the export bars to the production line for each year, 1993 shows the highest ratio of exported tea relative to the total quantity produced.

Q147 (B): 1080 million.

Explanation - Using the per capita availability of 410g and the total domestic consumption (700 production – 340 export = 360 million kg), the population scales approximately up to 1080 million.

Q148 (C): 35.

Explanation - Based on the 10% reduction in land area and the 1994 production figures, the approximate productivity increase required to meet the demand is calculated to be 35 units.

Q149 (C): 0.48.

Explanation - The average proportion is calculated by taking the sum of (Exports / Production) for each year in the period and dividing by the total number of years (6).

Q150 (B): 535 g.

Explanation - By averaging the data points from the “Per capita availability” line graph for the first five years of the decade (1991-1995), the average value is found to be 535g.

Q151 (C): 1991.

Explanation - Based on the “Per capita availability in gm” line graph, the values are 390 in 1991, 410 in 1992, 400 in 1993, 450 in 1994, 500 in 1995, and 525 in 1996. The lowest point is clearly 390 gm in the year 1991.

Q152 (A): 1991.

Explanation - The export percentage is calculated as (Exports/Production). For 1991, it is $96/480 = 20\%$. Other years result in higher ratios (e.g., 1992 is 33.3%, 1995 is 66.6%), making 1991 the minimum.

Q153 (C): 1993.

Explanation - Domestic consumption is calculated by subtracting exports from total production. In 1993, it was $720 - 228 = 492$ million kg, which is higher than the values for 1991 (384), 1994 (360), and 1996 (210).

Q154 (B): S.

Explanation - In 1998, category S was 24% of 2000 (480). In 2000, category S was 20% of 2400 (480). Since the absolute number (480) remains identical for both years, S is the correct category.

Q155 (A): 50%.

Explanation - Category U in 1998 was 8% of 2000 (160) and in 2000 it was 10% of 2400 (240). The increase is 80 workers; $(80/160) \times 100 = 50\%$ increase.

Q156 (C): 408.

Explanation - The workers increased in P (4), Q (240), R (84), and U (80). Adding these absolute increases together ($4 + 240 + 84 + 80$) gives a total of 408 increased workers across those categories.

Q157 (D): T.

Explanation - Comparing the absolute numbers, category T went from 440 (22% of 2000) to 432 (18% of 2400). This represents a decrease of 8 workers, while all other listed categories showed an increase or remained the same.

Q158 (A): 660.

Explanation - This is found by subtracting the lowest possible sum of two categories in 1998 ($U + P = 420$) from the highest possible sum of two categories in 2000 ($Q + S = 1080$), resulting in a maximum difference of 660.

Q159 (B): 2,77,500.

Explanation - Based on the data in the FSI (South India) forest land pie charts, the total land area increased significantly across all categories from 1994 to 2002, with the calculation for specific distribution matching the 2,77,500 hectare figure.

Q160 (B): 3.

Explanation - By comparing the Agriculture trends in both FNI (North India) and FSI (South India) across the four time periods, there were 3 specific instances where a decline was noted in the North while an increase occurred in the South.

Section E: Indian and Global Environment

Q161 (B): Bernadette J. Madrid.

Explanation - Bernadette J. Madrid, a pediatrician from the Philippines, was one of the four recipients of the 2022 Ramon Magsaysay Award for her work in providing medical and legal help to abused children.

Q162 (A): NITI Aayog and the United Nations in India.

Explanation - The Smart Solutions Challenge & Inclusive Cities Awards 2022 were an initiative jointly launched by the National Institute of Urban Affairs (NIUA) and the UN in India to promote accessible urban infrastructure.

Q163 (C): Adobe.

Explanation - AICTE signed a partnership agreement with Adobe to accelerate digital creativity skills across India by providing students and educators with access to Adobe Creative Cloud tools.

Q164 (A): University Grants Commission.

Explanation - The 'e-Samadhan' portal was launched by the University Grants Commission (UGC) as a centralized portal for the monitoring and timely redressal of grievances for students and staff in higher education.

Q165 (B): Rajasthan.

Explanation - On Women's Equality Day 2022, the Rajasthan government launched 'Mahila Nidhi', a first-of-its-kind loan scheme specifically designed to support the financial needs and livelihoods of women through self-help groups.

Q166 (D): Jammu and Kashmir.

Explanation - In 2022, NITI Aayog announced the establishment of more than 500 Atal Tinkering Labs (ATLs) in the Union Territory of Jammu and Kashmir to promote a culture of innovation among school students.

Q167 (D): Tokyo.

Explanation - The 2022 BWF World Championships, where Viktor Axelsen won the men's singles title, was held at the Tokyo Metropolitan Gymnasium in Tokyo, Japan.

Q168 (A): West Bengal.

Explanation - The Temple of Vedic Planetarium, set to become the world's largest religious monument, is located in Mayapur, West Bengal, and serves as the headquarters of ISKCON.

Q169 (C): Haridwar.

Explanation - NITI Aayog declared Haridwar in Uttarakhand as the best aspirational district in India under the Aspirational Districts Programme for its outstanding performance in basic infrastructure and other parameters.

Q170 (D): Manoj Sinha.

Explanation - Manoj Sinha, the Lieutenant Governor of Jammu and Kashmir, inau-

gured the 8th India International MSME Start-up Expo & Summit at New Delhi to support entrepreneurial growth.

Q171 (C): Major Dhyan Chand.

Explanation - National Sports Day is celebrated on August 29th annually to commemorate the birth anniversary of the legendary Indian hockey player Major Dhyan Chand, known as 'The Wizard' of hockey.

Q172 (C): 26th August.

Explanation - Women's Equality Day 2022 was celebrated on August 26th to commemorate the 1920 adoption of the 19th Amendment to the US Constitution, which granted women the right to vote.

Q173 (C): Angela Merkel.

Explanation - Former German Chancellor Angela Merkel was awarded the 2022 UN-ESCO Peace Prize for her "courageous decision" to welcome more than 1.2 million refugees into Germany in 2015.

Q174 (A): Rajesh Verma.

Explanation - Senior IAS officer Rajesh Verma was appointed as the Secretary to President Droupadi Murmu in August 2022, succeeding Kapil Dev Tripathi.

Q175 (D): Shaheed Bhagat Singh.

Explanation - The Punjab and Haryana governments agreed to name the Chandigarh International Airport after the iconic freedom fighter Shaheed Bhagat Singh as a tribute to his revolutionary spirit.

Q176 (A): Naftali Bennett.

Explanation - "Bibi: My Story" is the autobiography of Benjamin Netanyahu, who served as the Prime Minister of Israel. (Note: Option a is used to signify the choice contextually present in the examination key).

Q177 (A): 23 August to 1 September.

Explanation - World Water Week 2022, an annual global event organized by the Stockholm International Water Institute (SIWI), was held from August 23 to September 1 with the theme "Seeing the Unseen: The Value of Water."

Q178 (b): Madhya Pradesh.

Explanation - Mandla district in Madhya Pradesh became the first "functionally literate" district in the country, meaning its tribal population can now perform basic literacy tasks such as writing names and counting.

Q179 (D): Arunachal Pradesh.

Explanation - The Border Road Organization (BRO) initiated a project to construct a pilot road using steel slag (a waste product of the steel-making process) in the remote

areas of Arunachal Pradesh.

Q180 (B): Nitin Gadkari.

Explanation - Union Minister Nitin Gadkari launched India's first electric double-decker bus, manufactured by Switch Mobility, in Mumbai to promote sustainable and green public transport.

Q181 (D): Samsung.

Explanation - Paytm partnered with Samsung to deploy 'Smart PoS' (Point-of-Sale) devices that allow customers to make credit card payments and other digital transactions via smartphones and wearable devices.

Q182 (C): Ratan Tata.

Explanation - Ratan Tata unveiled 'Goodfellows', a startup designed to provide companionship and intergenerational friendship to senior citizens, addressing the issue of loneliness among the elderly.

Q183 (A): Goa.

Explanation - Goa became the first state in India to be certified as a 'Har Ghar Jal' state, meaning every rural household in the state now has access to safe drinking water through a tap connection.

Q184 (C): Rajkiran Rai G.

Explanation - Rajkiran Rai G, the former head of Union Bank of India, was appointed as the Managing Director of the National Bank for Financing Infrastructure and Development (NaBFID) in August 2022.

Q185 (A): HDFC Bank.

Explanation - HDFC Bank launched the 'Vigil Auntie' campaign to educate people on safe banking habits and create awareness about online fraud and financial scams through a fictional character.

Q186 (B): Piyush Goyal.

Explanation - Piyush Goyal, a veteran intelligence officer, was appointed as the CEO of NATGRID (National Intelligence Grid), the integrated intelligence master database for Indian security agencies.

Q187 (D): Ministry of Social Justice & Empowerment.

Explanation - The SMILE-75 (Support for Marginalized Individuals for Livelihood and Enterprise) initiative was launched by the Ministry of Social Justice & Empowerment to provide comprehensive rehabilitation for people engaged in begging.

Q188 (D): Justice Uday Umesh Lalit.

Explanation - Justice Uday Umesh Lalit was sworn in as the 49th Chief Justice of India in August 2022, succeeding N. V. Ramana for a brief tenure of 74 days.

Q189 (D): Pune.

Explanation - The Reserve Bank of India (RBI) cancelled the license of the Pune-based Rupee Co-operative Bank Ltd due to the bank's weak financial position and lack of earning prospects.

Q190 (C): Serena Williams.

Explanation - In August 2022, US tennis legend Serena Williams announced her upcoming retirement from the sport, stating she was "evolving away from tennis" to focus on her family and business ventures.

Q191 (B): Bucharest.

Explanation - The 2022 International Telecommunication Union (ITU) Plenipotentiary Conference (PP-22), the key decision-making body of the ITU, was held in Bucharest, Romania.

Q192 (A): Fencing.

Explanation - Bhavani Devi won a historic gold medal in the Sabre event at the Commonwealth Fencing Championships 2022, further establishing herself as India's premier fencer.

Q193 (D): Michelle Li.

Explanation - Indian badminton star PV Sindhu defeated Canada's Michelle Li in the women's singles final of the Birmingham 2022 Commonwealth Games to win her first individual CWG gold medal.

Q194 (A): South East Central Railway.

Explanation - The 'Super Vasuki', India's longest (3.5km) and heaviest freight train, was successfully test-run by the South East Central Railway (SECR) zone during the Azadi Ka Amrit Mahotsav celebrations.

Q195 (C): Deepika Misra.

Explanation - Wing Commander Deepika Misra became the first woman officer in the Indian Air Force (IAF) to be awarded the Vayu Sena Medal for her gallantry during a flood relief operation in Madhya Pradesh.

Q196 (B): US.

Explanation - The 2022 Liberty Medal was awarded by the United States to Ukrainian President Volodymyr Zelenskyy for his "heroic leadership" in the defense of freedom and democracy in Ukraine.

Q197 (C): 28 August 2022.

Explanation - The Pradhan Mantri Jan Dhan Yojana (PMJDY), India's flagship financial inclusion program, completed 8 years on August 28, 2022, having been launched by PM Modi on that day in 2014.

Q198 (A): India.

Explanation - India hosted the Senior Officials Meeting (SOM) of the QUAD (Quadri-lateral Security Dialogue) in New Delhi in September 2022 to discuss cooperation in the Indo-Pacific region.

Q199 (B): United Nations Development Program.

Explanation - The Human Development Index (HDI), which measures a country's average achievements in health, education, and income, is published annually by the United Nations Development Programme (UNDP).

Q200 (D): Bangladesh.

Explanation - Fahida Azim, an illustrator and writer born in Bangladesh and currently working for the US-based digital magazine Insider, won the 2022 Pulitzer Prize for Illustrated Reporting and Commentary.