

How to use this sheet. Write the alphabet-position strip below into the margin of your rough page before you start. Test the first and last letters to find a shift, and add the letter positions before trying anything cleverer on a number code. Target time is 45 seconds per question.

A1 B2 C3 D4 E5 F6 G7 H8 I9 J10 K11 L12 M13

N14 O15 P16 Q17 R18 S19 T20 U21 V22 W23 X24 Y25 Z26

Section A · Multiple choice questions

Choose the single correct option in each case.

- If CAT is coded as FDW, how is DOG coded?
(1) GQI (2) GRJ (3) FRJ (4) GRI
- If BOOK is coded as CPPL, what is the code for PAGE?
(1) QBHF (2) QBGF (3) PBHF (4) QAHF
- If FLIGHT is coded as UORTSG using opposite letters, what is the code for RUNWAY?
(1) IFMWZB (2) SVOXBZ (3) IFMDZB (4) QTMVZX
- If TOWER is coded as SPVFQ, what is the code for RADAR?
(1) SBCBS (2) QBCBQ (3) SZEZS (4) QBEBQ
- If SIGNAL is coded as 57 and RADAR as 37, what is the code for TOWER?
(1) 86 (2) 81 (3) 76 (4) 71
- If a word codes to the sum of its letter positions plus 6, what does CAB code to?
(1) 6 (2) 12 (3) 9 (4) 15
- Which cluster does not belong?
(1) DGJ (2) HKN (3) MPS (4) QTX
- If 'mo ta' means 'blue sky' and 'ta re' means 'sky high', what does 'ta' mean?
(1) blue (2) sky (3) high (4) cannot be determined

Working space — Questions 3 to 5

Write each letter as a number first, then find the gap.

Section B · Assertion and reason

Mark (a) both true and reason explains assertion, (b) both true but reason does not explain, (c) assertion true reason false, (d) assertion false reason true.

- Assertion:** The reverse position of a letter equals 27 minus its forward position.
Reason: The alphabet has 26 letters, so positions pair symmetrically.
- Assertion:** Checking the first and last letters is enough to confirm a uniform shift.
Reason: A uniform shift applies the same increment to every letter.
- Assertion:** Message-substitution questions need no letter arithmetic.
Reason: They are solved by intersecting the words shared between sentences.

12. Assertion: A letter-sum code can always be reversed to recover the original word.

Reason: Each number corresponds to exactly one word.

Section C · Match the following

Column I — code	Column II — method
(a) LOUNGE = 80	(i) Reverse, then shift 5, 4, 3, 2, 1
(b) ABOUT = YYRDB	(ii) Intersection of shared words
(c) 'Bem Como' = 'Fine You'	(iii) Sum of letter positions plus a constant
(d) PARENTS = TEVIRXW	(iv) Uniform shift of +4

Answer: (a) _____ (b) _____ (c) _____ (d) _____

Section D · Fill in the blanks

13. The EJOTY anchors are E = 5, J = 10, O = _____, T = 20 and Y = _____.

14. The opposite letter of D is _____.

15. In both 2025 shifts, the constant added to the letter-position sum was _____.

16. When a straight shift fails on the first letter, the next thing to try is _____.

17. ZEALOT sums to _____ before any constant is added.

Section E · True or false

18. A uniform shift wraps from Z back to A. (True / False)

19. Message-substitution questions require letter arithmetic. (True / False)

20. The reverse position of R is 9. (True / False)

21. Letter clusters should be compared as whole words rather than column by column. (True / False)

22. A shift of +4 turns Y into C. (True / False)

Working space — Sections D and E

Show the arithmetic for each answer.

Section F · Short answer

Two to three sentences each.

23. Write the EJOTY anchors and explain how to find the position of W in under three seconds.

24. Describe the intersection method for message coding in three steps.

25. Why is the wrap-around at Y and Z the most common source of error in shift codes?

26. Explain how to tell a reverse-then-shift code apart from a plain uniform shift.

Section G · Long answer

27. Explain the full method for number codes built on letter sums, then apply it to a six-letter word of your choice, showing the sum, the constant and the final code.

28. Take ABOUT = YYRDB and ACUTE = JXXEB. Derive the rule from scratch, prove it on both given words, and then apply it to a fresh five-letter word of your own.

Working space — Question 28

Reverse the word first, then write the shift under each letter.

Section H · HOTS — higher order thinking

29. Two different coding rules produce the same code for a given word. Construct such a pair and explain what extra word would distinguish them.

30. Explain why a letter-sum code cannot be reversed uniquely, and give two different words that share the same code.

31. A candidate finds that a +3 shift fits the first two letters but not the third. List the three rules they should test next, in order, and justify the order.

Working space — Question 30

Two words, same sum. Show both.

Section I · Previous year exam style

Every question in this section appeared in a real AAI ATC Junior Executive paper.

32. LOUNGE is coded as 80 and PARCEL is coded as 61. What is the code for ZEALOT?

(1) 83 (2) 86 (3) 85 (4) 79 [PYQ 2025 · Shift 1]

33. MATTER is coded as 83 and SOLIDS is coded as 84. What is the code for LIQUID?

(1) 81 (2) 80 (3) 72 (4) 78 [PYQ 2025 · Shift 2]

34. ABOUT is written as YYRDB and ACUTE as JXXEB. How will ANGLE be written?

(1) BPJPJ (2) JPJBP (3) JPJPB (4) JPJPC [PYQ 2021 · Shift 2]

35. 'Tudo Bem' is 'All Fine', 'Como Esta' is 'How You', 'Bem Como' is 'Fine You'. How is 'Tudo Esta' written?

(1) All You (2) All Fine (3) All How (4) How Fine [PYQ 2021 · Shift 3]

36. PARENTS relates to TEVIRXW and ACHIEVE to EGLMIZI. To what does PROUDLY relate?

(1) TSVYHRC (2) TVSYHPC (3) TWSZIQC (4) TVTZIPC [PYQ 2025 · Shift 1]

37. 'creativity sparks innovation' is coded as 'tk jo lo' and 'innovation is needed' as 'mb pt jo'. How is 'innovation' coded?
(1) tk (2) jo (3) mb (4) pt [PYQ 2025 · Shift 2]

Working space — Questions 32 to 37

These are the real exam pattern. Time yourself at 45 seconds each.

Section J · Mixed revision test

Ten questions. Seven minutes. No calculator, no phone.

38. If SUN is coded as HFM using opposite letters, what is the code for MOON?
39. If ACE relates to BDF, to what does GIK relate?
40. In the sequence AFH, DJK, GNN, JRQ, what comes next?
41. Which cluster does not belong: FPJ, BLF, JTM, MWQ?
42. If TIME is coded as EMIT, state the coding rule.
43. 'ka pi ro' means 'tower controls flight', 'ro zi ba' means 'flight is delayed', 'pi zi na' means 'controls is manual'. What is the code for 'tower'?
44. If PILOT sums to 70, what is its code under a plus-six rule?
45. If a code adds 4 to every letter, what does ZEBRA become?
46. If RADAR is coded as 42 by plain letter sum, what is the plain sum of TOWER?
47. If HKN, DGJ and MPS share a gap pattern, write one more cluster that fits it.

Stuck on any of these? Bring them to a live class.

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