

FIITJEE COMMON TEST

ON-LINE

PHASE - 1

Batch :CFY(2024)

Mental Ability Test (MAT)

QP CODE:

Time: 120 Minutes

Maximum Marks: 100

Please read the instructions carefully.

INSTRUCTIONS

A: General :

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use **Blue/Black Ball Point Pen only** for writing particulars on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**
3. Darken the appropriate bubbles with **Blue/Black Ball Point Pen** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

B: Questions paper format and Marking Scheme :

1. The question paper consists of 100 questions.
2. For each question you will be **awarded 1 marks** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened. No Negative Mark will be awarded.

Enrollment No. :

Batch : _____

Name : _____

Candidate's Signature _____ Invigilator's Signature: _____

MAT

1. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is
 (A) $\frac{1}{4}$ (B) $\frac{1}{10}$ (C) $\frac{7}{15}$ (D) $\frac{8}{15}$
1. D
2. A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in
 (A) $9\frac{1}{5}$ days (B) $9\frac{2}{5}$ days (C) $9\frac{3}{5}$ days (D) 10
2. C
3. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?
 (A) 12 days (B) 15 days (C) 16 days (D) 18 days
3. B
4. A is thrice as good a workman as B and therefore is able to finish a job in 60 days less than B. Working together, they can do it in
 (A) 20 days (B) $22\frac{1}{2}$ days (C) 25 days (D) 30 days
4. B
5. A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C ?
 (A) Rs. 375 (B) Rs. 400 (C) Rs. 600 (D) Rs. 800
5. B
6. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be
 (A) 4 days (B) 5 days (C) 6 days (D) 7 days
6. A
7. A can do a piece of work in 4 hours; B and C together can do it in 3 hours, while A and B together can do it in 2 hours. How long will B alone take to do it ?
 (A) 8 hours (B) 10 hours (C) 4 hours (D) 24 hours
7. C
8. A and B can do a piece of work in 4 days, while C and D can do the same work in 12 days. In how many days will A, B, C and D do it together?
 (A) 12 days (B) 4 days (C) 3 days (D) 2 days
8. C
9. A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone would take to do the whole work ?
 (A) 23 days (B) 37 days (C) $37\frac{1}{2}$ days (D) 40 days
9. C
10. A machine P can print one lakh books in 8 hours, machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 A.M. while machine P is closed at 11 A.M. and the remaining two machines complete work. Approximately at what time will the work (to print one lakh books) be finished ?

- (A) 11:30 A.M. (B) 12 noon (C) 12:30 P.M. (D) 1:00 P.M.
10. D
11. A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days, A alone can finish the remaining work ?
- (A) 5 (B) $5\frac{1}{2}$ (C) 6 (D) 8
11. C
12. 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it ?
- (A) 35 (B) 40 (C) 45 (D) 50
12. B
13. A and B can together finish a work in 30 days. They worked together for 20 days and then B left. After another 20 days, A finished the remaining work. In how many days A alone can finish the work ?
- (A) 40 (B) 50 (C) 54 (D) 60
13. D
14. A, B, C, and D can do a piece of work in 20 days. If A and B can do it together in 50 days, and C alone in 60 days, find the time in which D alone can do it.
- (A) 200 days (B) 150 days (C) 90 days (D) 75 days
14. D
15. 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work ?
- (A) 3 (B) 5 (C) 7 (D) None of these
15. C
16. A and B undertake to do a piece of work for Rs. 450. A can do it in 20 days and B can do it in 40 days. With the help of C, they finish it in 8 days. How much should C be paid for his contribution?
- (A) Rs. 180 (B) Rs. 40 (C) Rs. 120 (D) Rs. 60
16. D
17. A and B can complete a work in 15 days and 10 days respectively. They started doing the work together but after 2 days B had to leave and A alone completed the remaining work. The whole work was completed in
- (A) 8 days (B) 10 days (C) 12 days (D) 15 days
17. C
18. A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in :
- (A) 4 days (B) 6 days (C) 8 days (D) 12 days
18. C
19. A works twice as fast as B. If B can complete a work in 12 days independently, the number of days in which A and B can together finish the work in
- (A) 4 days (B) 6 days (C) 8 days (D) 18 days
19. A
20. Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman ?
- (A) 3 : 5 (B) 4 : 3 (C) 5 : 3 (D) 2 : 3
20. B
21. One morning Udai and Vishal were talking to each other face to face at a crossing. If Vishal's shadow was exactly to the left of Udai, which direction was Udai facing ?
- (A) East (B) West (C) North (D) South
21. C
22. Y is in the East of X which is in the North of Z. If P is in the South of Z, then in which direction of Y, is P?

- (A) North (B) South (C) South-East (D) None of these
22. D
23. If South-East becomes North, North-East becomes West and so on. What will West become ?
(A) North-East (B) North-West (C) South-East (D) South-West
23. C
24. A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is the from the starting place ?
(A) West (B) South (C) North-East (D) South-West
24. D
25. Rahul put his timepiece on the table in such a way that at 6 P.M. hour hand points to North. In which direction the minute hand will point at 9.15 P.M. ?
(A) South-East (B) South (C) North (D) West
25. D
26. K is 40 m South-West of L. If M is 40 M South-East of L, then M is in which direction of K ?
(A) East (B) West (C) North-East (D) South
26. A
27. A man walks 2 km towards North. Then he turns to East and walks 10 km. After this he turns to North and walks 3 km. Again he turns towards East and walks 2 km. How far is he from the starting point ?
(A) 10 km (B) 13 km (C) 15 km (D) None of these
27. B
28. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls and finally along a diagonal order to catch a rat. How much total distance is covered by the cat ?
(A) 10 (B) 14 (C) 38 (D) 48
28. C
29. One morning sujata started to walk towards the Sun. After covering some distance she turned to right then again to the right and after covering some distance she again turns to the right. Now in which direction is she facing ?
(A) North (B) South (C) North-East (D) South-West
29. A
30. Some boys are sitting in three rows all facing North such that A is in the middle row. P is just to the right of A but in the same row. Q is just behind of P while R is in the North of A. In which direction of R is Q ?
(A) South (B) South-West (C) North-East (D) South-East
30. D
31. One morning after sunrise, Vimal started to walk. During this walking he met Stephen who was coming from opposite direction. Vimal watch that the shadow of Stephen to the right of him (Vimal). To which direction Vimal was facing ?
(A) East (B) West (C) South (D) Data inadequate
31. C
32. Golu started from his house towards North. After covering a distance of 8 km. he turned towards left and covered a distance of 6 km. What is the shortest distance now from his house ?
(A) 10 km (B) 16 km (C) 14 km (D) 2 km
32. A
33. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15m. After this he is to turn right at 135° and to cover 30 m. In which direction should he go ?
(A) West (B) South (C) South-West (D) South-East
33. C

34. X started to walk straight towards south. After walking 5 m he turned to the left and walked 3m. After this he turned to the right and walked 5 m Now to which direction X is facing ?
 (A) North-East (B) South (C) North (D) South-west
34. B
35. Hemant in order to go to university started from his house which is in the east and came to a crossing. The road to the left ends in a theatre, straight ahead is the hospital. In which direction is the university ?
 (A) North (B) South (C) East (D) West
35. B
36. After walking 6 km, I turned to the right and then walked 2 km. After then I turned to the left walked 10 km. In the end, I was moving towards the North. From which direction did I start my journey ?
 (A) North (B) South (C) East (D) West
36. A
37. Ravi left home and cycled 10 km towards south, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight ?
 (A) 10 km (B) 15 km (C) 20 km (D) 25
37. B
38. Reena walked from A to B in the East 10 feet. Then she turned to the right and walked 3 feet. Again she turned to the right and walked 14 feet. How far is she from A ?
 (A) 4 feet (B) 5 feet (C) 24 feet (D) 27 feet
38. B
39. One morning after sunrise Nivedita and Niharika were talking to each other face the face at Dalphine crossing. If Niharika's shadow was exactly to the right of Nivedita. Which direction Niharika was facing?
 (A) North (B) South (C) East (D) Data is inadequate
39. A
40. If $A \times B$ means A is to the south of B; $A + B$ means A is to the north of B; $A \% B$ means A is to the east of B; $A - B$ means A is to the west of B; then in $P \% Q + R - S$, S is in which direction with respect to Q ?
 (A) South-West (B) South-East (C) North-East (D) North-West
40. B
41. How many pairs of letters are there in the word 'COMMUNICATION' which have as many letters between them in the word as in alphabetical series?
 (A) Only one (B) Three (C) Five (D) More than five
41. C
42. How many meaning full English words can be formed using the second, third, fifth and seventh letters of the word 'KITCHEN' using each letter once in each word ?
 (A) Only one (B) Two (C) Three (D) Four
42. B
43. How many pairs of letters are there in the word 'MICROSCOPE' which have as many between them in the word as in alphabetical series?
 (A) Only one (B) More than three (C) Two (D) None
43. B
44. If the letters in the word 'CREATION' are rearranged as they appear in the English alphabet then the position of how many letters will remain unchanged after the rearrangement ?
 (A) Two (B) One (C) Three (D) None
44. B

45. If it is possible to make only one meaningful word with the first, the third, the fifth and the ninth letters of the word 'FRAGRANCE', which of the following will be second letter of the word ? If no such word can be made, give 'Y' as the answer and if more than one such words can be made give 'Z' as the answer
(A) A (B) Y (C) Z (D) E
45. C
46. How many pairs of letters are there in the word 'ABBREVIATION' which have as many letters between them in the word as in alphabetical series ?
(A) Three (B) Five (C) Six (D) Seven
46. C
47. How many pairs of letters are there in the word 'BEAUTIFYING' which have as many letters between them in the word as in alphabetical series ?
(A) Only one (B) Two (C) Three (D) Four
47. D
48. How many pairs of letters are there in the word 'DEMONETISATION' which have as many letters between them in the word as in alphabetical series ?
(A) None (B) Six (C) Seven (D) More than seven
48. D
49. If the letters in the word 'MOTHERLAND' rearranged as they appear in the English alphabet then the position of how many letter will remain unchanged after the rearrangement ?
(A) Only one (B) Two (C) None (D) Three
49. A
50. If it is possible to make only one meaningful word with the first, the third, the fifth and the eighth letters of the word 'MAXIMIZATION', which of the following will be the second letter of the word ? If no such word can be made, give 'Y' as the answer and if more than one such word can be made, give 'Z' as the answer
(A) M (B) X (C) Z (D) Y
50. D
51. A B C D E F G H I J K L M N O P R S T U V W X Y Z. Which letter in this alphabet is the eighth letter to the right of the letter and which is the tenth letter to the left of the last but one letter of the alphabet ?
(A) X (B) W (C) I (D) H
51. B
52. How many pairs of letters are there in the word 'NURSING' which have as many letters between them as in the alphabet ?
(A) One (B) Three (C) Five (D) Six
52. B
53. Arrange the given words Alphabetical order and choose the one that comes first
(A) Science (B) Scrutiny (C) Scripture (D) Scramble
53. A
54. If it is possible to form a word with the first, fourth, seventh and eleventh letters in the word 'SPHERVLVODS' write the second letter of that word. Otherwise, X is the answer?
(A) S (B) E (C) X (D) O
54. B
55. In the word ECONOMETRICS, if the first and second, third and fourth, fourth and fifth, fifth and sixth words are interchanged up to the last letter, what would be the tenth letter from right?
(A) A. O (B) R (C) N (D) I
55. C
56. If the following four words are arranged in alphabetical order, which word will come in the middle?

- (A) Electric (B) Elector (C) Elect (D) Electrode
56. A
57. Find the 11th letter to the left of 20th letter from left in the English alphabet
(A) D (B) J (C) K (D) I
57. D
58. Arrange the following words in alphabetical order which one will come in middle of them?
(A) Nozzle (B) Nausea (C) Nostril (D) can't be determined
58. D
59. Find out how many such pairs of letters are there in the given word BACKLASH each of which has as many letters between them in word as in the English alphabet ?
(A) One (B) Two (C) Three (D) Four
59. C
60. Arrange the given words in alphabetical order and tick the one that comes in the second?
(A) Reprimand (B) Reverence (C) Amazed (D) Disturb
60. D
61. A man can row upstream at 7 km/h and downstream at 11 km/h. What is the man's rate in still water ?
(A) 9 km/h (B) 9.4 km/h (C) 10 km/h (D) 10.4 km/h
61. A
62. What is the time taken by a train running at 54 km/hr to cross a man standing on a platform, the length of the train being 180 m ?
(A) 6 seconds (B) 12 seconds (C) 16 seconds (D) 18 seconds
62. B
63. How long will a train 100 m long and travelling at a speed of 45 kmph, take to cross a platform of length 150 m ?
(A) 20 sec (B) 29 sec (C) 27 sec (D) 30 sec
63. A
64. Find the length of the bridge, which a train 120 m long travelling at 54 kmph can cross in 30 seconds
(A) 340 m (B) 350 m (C) 330 m (D) 390 m
64. C
65. A worker reaches his work place 15 minutes late by walking at 4 kmph from his house. The next day he increases his speed by 2 kmph and reaches in time. Find the distance from his house to his work place
(A) 2 km (B) 6 km (C) 8 km (D) 3 km
65. D
66. Find the time taken by a train 150 m long running at a speed of 63 kmph to cross another train of length 100 m long running at a speed of 45 kmph in the same direction.
(A) 25 seconds (B) 50 seconds (C) 75 seconds (D) 100 seconds
66. B
67. I had to catch a bus which was 225 m ahead of me. The bus also started at the same time. If the speed of the bus was 2.5 m/sec and my speed was 36 kmph, in how much time I can catch the bus?
(A) 20 seconds (B) 25 seconds (C) 30 seconds (D) 40 seconds
67. C
68. A car takes 2 hours more to cover a distance of 480 km when its speed is reduced by 8 kmph. Find its usual speed
(A) 48 kmph (B) 55 kmph (C) 60 kmph (D) 64 kmph
68. A
69. A train crosses two bridges 370 m and 480 m long in 51 and 62 seconds respectively. Find the speed of the train

- (A) 24 kmph (B) 36 kmph (C) 45 kmph (D) 64 kmph
69. B
70. A man rows 25 km downstream and 20 km upstream taking 5 h each time. What is the velocity of the current ?
 (A) 1 km/h (B) 2.5 km/h (C) 3.5 km/h (D) None of these
70. D
71. A car can cover 350 km in 4 hours. If the speed is decreased by $12\frac{1}{2}$ kmph, how much time does the car take to cover a distance of 450 km ?
 (A) 4 hrs (B) 5 hrs (C) 2 hrs (D) 6 hrs
71. D
72. A car covers a certain distance going at a speed of 60 kmph and returns to the starting point at a speed of 40 kmph. Find the average speed for the whole journey
 (A) 48 kmph (B) 42 kmph (C) 34 (D) 40 kmph
72. A

Directions (Q.73 to 77): In each question below is given a group of letters followed by four combinations of digits/symbols numbered (A), (B), (C) and (D). You have to find out which of the combinations correctly represents the group of letters based on the following coding system and mark the number of that combination as the answer.

| | | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| Letter | M | I | K | T | A | B | E | J | W | F | H | U | D | P | Y |
| Code | 6 | * | 5 | © | 7 | 8 | @ | 1 | 2 | 3 | 4 | % | 9 | # | \$ |

Condition:

- (i) If the first letter is a vowel and the last letter is a consonant, the codes are to be interchanged.
 (ii) If the first letter is consonant and the last letter is a vowel, both are to be coded as the code for the vowel.
 (iii) If both the first and the last letters are vowels, both are to be coded as '&'.

73. MEAPTD
 (A) 6@7#©9 (B) 6@7#©6 (C) 9@7#©9 (D) 9@7#©6
73. A
74. BMJKPU
 (A) %615#8 (B) %615#% (C) 8615#% (D) 8615#8
74. B
75. IPTWHY
 (A) \$#©24\$ (B) \$#©24* (C) *#©24\$ (D) *#©24*
75. B
76. ABJFEP
 (A) 7813@7 (B) 7813@# (C) #183@7 (D) #813@7
76. D
77. EYBEJA
 (A) &\$8@1& (B) @\$8@17 (C) 7\$8@1@ (D) 7\$8@1&
77. A
78. Two trains running in the same direction at 65 kmph and 47 kmph, completely pass one another in 1 minute. If the length of the first train is 125m, the length of the second train is
 (A) 125 m (B) 150 m (C) 175 m (D) 200 m
78. C
79. If green means red, red means yellow, yellows means blue, blue means orange and orange means green, what is the colour of clean sky?
 (A) Red (B) Yellow (C) Blue (D) Orange
79. B

80. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is
(A) 1 hour (B) 2 hours (C) 3 hours (D) 4 hours
80. A
81. If 'KEDGY' is coded as 'EKDYG', then how will 'LIGHT' be coded ?
(A) ILHTG (B) ILGHT (C) ILGTH (D) THGIL
81. C
82. If 'RAVE' is coded as 'SXWB', then how will 'SCAW' be coded ?
(A) TDBO (B) TZBT (C) PZXK (D) TVXK
82. B
83. If 'SPANK' is coded as 'PSNAK', then how will 'THROW' be coded ?
(A) HTORW (B) HTWOR (C) HTWRO (D) HTRWO
83. A
84. If 'UDOMETER' is coded as 'DUMOTERE', then how will 'SUBLEASE' be coded ?
(A) USLBESAE (B) USLBAEES (C) USBGAELES (D) USLBEAES
84. B
85. If 'PURSER' is coded as 'UPSRRE', then how will 'PERIODIC' be coded ?
(A) EPRIDOIC (B) PEIRDOCI (C) EPIRODCI (D) EPIRODCI
85. C
86. If 'CASE' is coded as '5231', 'CHAIR' is coded as '58206' and 'TEACH' is coded as '71258', what does '586037' stand for ?
(A) CHASTE (B) CHRIST (C) STREET (D) CHEESE
86. B
87. If TOPER = 15 – 10 – 11 – 0 – 13, then HORNS = ?
(A) 3 – 10 – 13 – 8 – 14 (B) 3 – 10 – 13 – 9 – 13 (C) 3 – 10 – 13 – 9 – 14 (D) 3 – 9 – 13 – 9 – 14
87. C
88. If 'ROOM' is called 'BED', 'BED' is called 'WINDOW', 'WINDOW' is called 'FLOWER' and 'FLOWER' is called 'COOLER', on what would a man sleep ?
(A) WINDOW (B) BED (C) FLOWER (D) COOLER
88. A
89. If 'SAND' is called 'AIR', 'AIR' is called 'PLATEAU', 'PLATEAU' is called 'WELL', 'WELL' is called 'ISLAND' and 'ISLAND' is called 'SKY', then from where will a woman draw water ?
(A) WELL (B) ISLAND (C) SKY (D) AIR
89. B
90. In a certain code '59346' is written as '\$AD%F' and '8173' is written as 'HB#D'. How is '9865' written in that code ?
(A) HAF\$ (B) AFH\$ (C) ADF\$ (D) AHF\$
90. D
91. If DFIN is coded as WURM, the HJMO can be coded as
(A) RPNO (B) SQNP (C) SQNL (D) TRPO
91. C
92. If RUMOUR can be written as QSJKPL, then how HERMIT can be written ?
(A) GEPKHR (B) GCOIDN (C) GCPIDM (D) GCPIEN
92. B
93. If the word GROUD is coded as BMJPIY, how the word MINDWELL will be coded ?
(A) RNSIBJQQ (B) HDIYZGG (C) RNIYBZGG (D) HDIRYGZZ

93. A
94. If RED is coded as 6720, then how would GREEN be coded ?
(A) 1677199 (B) 1677209 (C) 16717209 (D) 9207716
94. B
95. If MACHINE is coded as 19-7-9-14-15-20-11, how will you code DANGER ?
(A) 11-7-20-16-11-24 (B) 13-7-20-9-11-25 (C) 10-7-20-13-11-24 (D) 13-7-20-10-11-25
95. C

Directions (Q. 96 to 100) : Study the following information to answer the given questions.

In a certain code language, 'right might wrote after' is written as 'ta pa lo me' 'wrote type every said' is written as 'lo ba ne ka', 'What right said over' is written as 'me sa ba je', 'might till huge right' is written as 'ta me na ze', 'till made said what' is written as 'na ya sa ba'.

96. Which of the following is the code of 'type every' ?
(A) ko lo (B) ne sa (C) ne ka (D) ne je
96. C
97. What is the code for 'after' ?
(A) me (B) pa (C) sa (D) ka
97. B
98. Which of the following is the code for 'over after made huge' ?
(A) ja pa ya me (B) je pa ta ze (C) ne ja pa ka (D) je pa ya ze
98. D
99. Which of the following is the code for 'right what' ?
(A) me sa (B) sa ba (C) me je (D) je ne
99. A
100. 'wrote right after' will be coded as which of the following ?
(A) ta ne ba (B) lo me pa (C) pa ta ne (D) me ta ze
100. B