Learn About the National Talent Search Tests

It is always best to know as much as possible about the test before you take it. The National Talent Search Examination will be conducted for students studying at class VIII level. The examination consists of two tests namely the Mental Ability Test (MAT) and the Scholastic Aptitude Test (SAT). Each test consists of 90 multiple choice type questions.

Each question has four alternatives marked 1,2,3 and 4. The candidate has to select one correct answer from the given alternatives and mark its number in the answer-sheet. Each correct answer carries one mark. Thus the total score of a candidate in a test is equal to the number of questions answered correctly by him/her.

To make the candidates acquainted with the questions in the above tests, some sample questions in each of the two tests are given below. These questions will give the candidate, a feel of the nature and level of the questions expected in the test. The answer for each question is provided at the end. The rationale has also been given for some questions, which will help you to understand the logic of the correct answer.

Mental Ability Test Items

This test is given to the candidates to judge their power of reasoning, ability to think, ability to judge, evaluate or discriminate, ability to visualize in the space, spatial orientation, etc. A variety of questions e.g. analogies, classification, series, pattern perception, hidden figures, coding-decoding, block assembly, problem solving etc. are used for this purpose. To acquaint the candidates with such questions, some examples are given below. The rationale to find the answer to each question is given at the end. The candidates are advised to try to solve these questions themselves first. Later on, they may look at the solutions to find their correct answer and the rationale.

Sample Questions for Mental Ability Test (MAT)

1-3. There is some relationship between the two terms (figures/letters) on the left side of the sign (::). The same relationship exists between the two terms on the right of the sign (::) of which one is missing. Find the missing one from the given four alternatives.

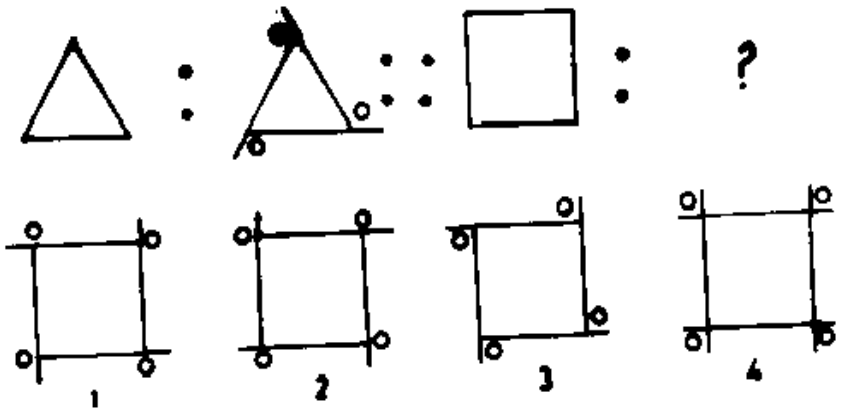
1. L L M O : M M N O :: A A B D : ?

   1. B B C E
   2. B B C D
   3. A A B D
   4. A B B C

2. 9 : 25 :: 49 : ?

   1. 36
   2. 81
   3. 64
   4. 100

3.



4 – 5 The capital letters in each of the following words are coded and written in small letters on the right side of each word, but the small letters do not appear in the same order as the letters in the word. Find out the codes for letters and answer the questions that follow.

K I N G	:	b d m e
R I N G	:	d e o b
I N K	:	e m b
I R K	:	o e m

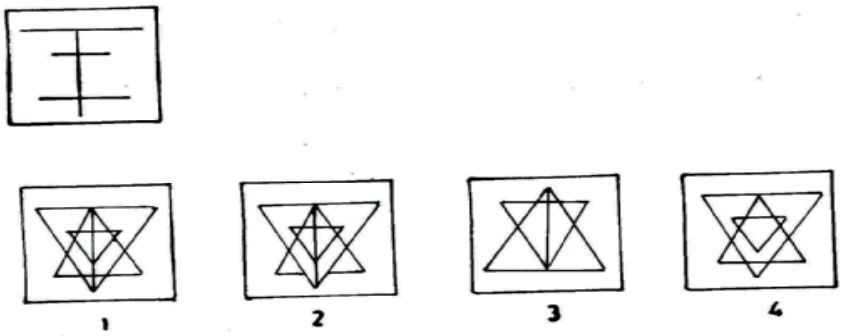
4. Which is the code for letter K?

   1. e
   2. m
   3. d
   4. b

5. What would be the code (in correct order) for the word K I N ?

   1. e m b
   2. m b e
   3. o m e
   4. m e b

6. In the following question the problem figure on the right is hidden in one of the four figures marked 1, 2, 3 and 4. Find the alternative, which the problem figure is hidden.



7.– 8 Study the following number line and answer the questions that follow .
7 5 9 5 2 3 5 9 4 8 5 9 5 4 5 9 3 5 5 9 5 3 5 9 4 5 2 5 3 5 6 5 9 .

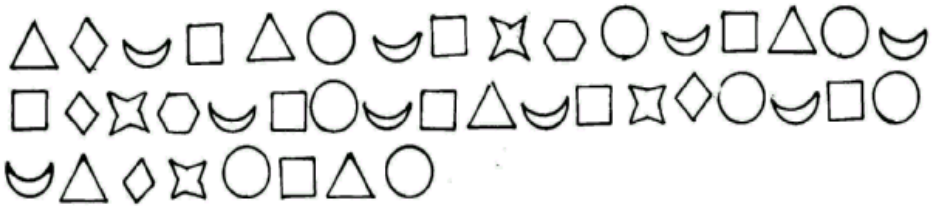
7. How many times is '5' is followed by '9'? But in such pairs, '3' should not come before '5'.

   1. 3
   2. 4
   3. 5
   4. 6

8. How many times do the two consecutive numbers (numbers one after the other) have a difference of 2?

   1. 5
   2. 7
   3. 9
   4. 8

9-10. Study the following patterns and answer the questions that follow.



9. How many times does the moon  come after a circle  and before a  ?

1. 6
2. 3
3. 4
4. 5

10. How many times does a triangle  come before a circle  and a square  before the triangle?

1. 3
2. 4
3. 2
4. 5

11. If ÷ means ×, × means −, + means × and − means ÷, then

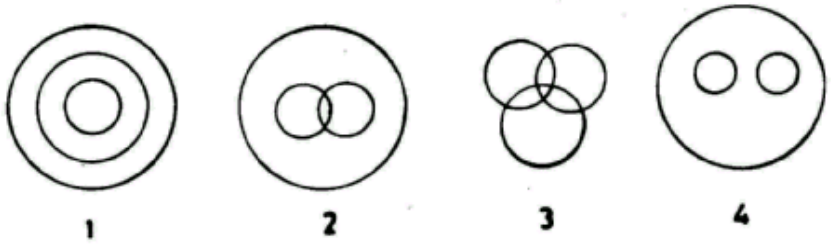
2 + 8 × 16 − 4 ÷ 2 = ?

1. 4
2. 8
3. 10
4. 12

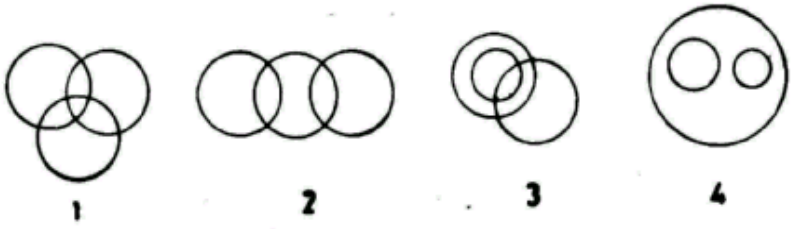
12. A boy started from his home. After walking for 5 km towards east, he turned to his right and walked for 8 km. Then he again turned to his right and walked for 10 km.. In which direction was he from his house?

1. West
2. South-West
3. North
4. North – West

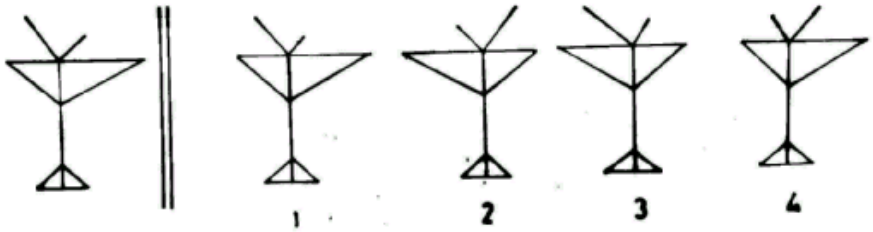
13. Which one of the four diagrams given below represents school, teachers and students?



14. Which one of the four diagrams given below represents educated persons, musicians and signers?



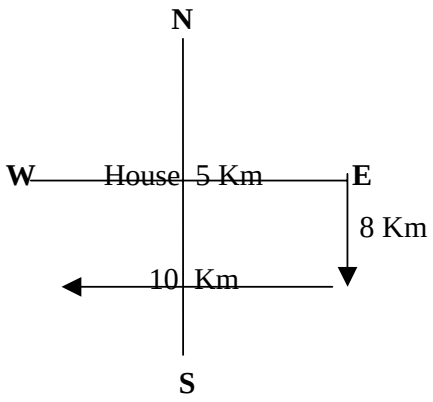
15. There is a figure to the left of the vertical parallel lines. Its mirror image is given as one of the four figures given to the right of these lines. Examine these figures carefully and find the one, which is the exact mirror image of the figure given to the left of the vertical line.



Solutions to MAT Questions

Question	Answer	Rationale
1.	2	In this question two sets of letters are given to the left of the sign **(::)**. In the first group the second set has MM corresponding to LL. M is the next letter to L in the alphabetical series. Similarly M in the first set is replaced by N (the next letter in the sequence). O remains same in both the sets. Using the above logic, AA shall be replaced by BB, B should be replaced by C and D remains the same. Therefore, the answer is BBCD given at alternative 2.
2.	2.	In the first group of numbers two numbers are given. The first number 9 is the square of 3, 25 is square of 5. Here these numbers are increasing by 2 i.e. 3+2 = 5. Similarly in the next group 49 is the square of 7, using the same logic; the next number should be the square of 9 (7+2). i.e. 81, given at alternative 2.
3.	3	The first figure is a triangle. In the next triangle the arms are extended. Small circles are placed above the arms anticlockwise. In the second set, the first figure is a square. If you extend its arms in the same manner and place the circles above the extended arms anticlockwise, the answer figure would be 3.
4.	2	You can see that in KING and RING, ING is common. Therefore, the three letters, which represent ING, should be 'b d e' which is also common in the given code. The left out letter in the word KING is K i.e. m in the given code. Similarly in RING the left out letter is R which is 'o' in the code. The rest of the code you can work out.

5.	4	To work out the Code for KIN you have to see the next two words i.e. INK and IRK. I and K are common in both the words. In the code, you can see that 'e' and 'm' are common. You know that 'm' represents K. So 'e' represents I. Now, you can see that 'b' represents N. Therefore KIN can be coded as 'm e b' which is at alternative 4.
6.	1	See the problem figure carefully, which has one vertical line and three horizontal parallel lines cutting the horizontal line at three places. Observe the distance of these lines too. Now observe the alternatives. In alternative 2, almost the same pattern is available, but the bottom horizontal line is broken. In alternative 3, the middle horizontal line is missing. In alternative 4, the vertical line is missing. Therefore, correct alternative is 1 where the full pattern is hidden.
7.	3	First observe and mark the pairs of 5 and 9. You will find 7 such pairs. Again observe that two pairs have 3 before 5. Therefore, you are left with 5 pairs of 5 and 9. So the correct alternative is 3.
8.	2	Let us find the two numbers, which have a difference of 2. We see that first two numbers '7' and '5' have the difference of 2, next 3 and 5 have the same difference, and again there are 3 and 5. Then there are 5, 3, and 5. Here 5 and 3 and 3 and 5 both have the difference of 2. A similar pair we find further again. Thus, there are 7 such pairs and the answer is 2.
9.	4	Using the same logic as given in questions 7 and 8 find the pattern as asked in questions 9 and 10.
10	1	

11.	2	In the given question replace division symbol (÷) with multiplication symbol (×), multiplication symbol (×) with minus symbol (–), plus (+) with multiplication (×) and minus (–) with division (÷). You will get this equation: $2 \times 8 - 16 \div 4 \times 2$ This can be worked out using normal rules. The value of the equation will be 8 which is placed at alternative 2.
12.	2	 Observe the figure and see that the boy will be in the South West direction from his house.
13.	4	All schools have teachers and students. No teacher is a student. Therefore, these two are independent of each other but part of the school. Therefore, alternative 4 is the answer wherein the big circle represents school and two small circles within it represent teachers and students separately.
14.	3	All singers are musicians, some singers and musicians are educated. Therefore, the large circle represents musicians and the circle inside it represents singers. The third circle, which cuts across these two circles, represents educated persons, as some of the musicians and singers may be educated. The alternative 3 shows this possibility.
15.	2	In the mirror image there is a lateral inversion i.e. right side appears to be on the left and vice-versa. So, out of the four given figures, figure given in alternative 2 is the mirror image of the given figure.