

Time: 09.00 a.m. to 11.00 a.m.

CENTRE CODE:

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DATE:

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EXAM SEAT NO.:

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EXAM SEAT NO. (in words)

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NATIONAL TALENT SEARCH EXAMINATION 2020-21 (STD. X)

Mental Ability Test (MAT)

Instructions to the Candidates:

1) PART I Mental Ability Test

Time 120 Minutes

Maximum Marks 100

- 2) Write your Seat No. both in figures and in words on this Question Booklet (above) as Well as on the Answer Sheet (OMR Sheet) supplied to you.
- 3) Each question carries one Mark.
- 4) All questions are compulsory.
- 5) You have to mark your answers on Answer sheet provided with the Question Booklet. Each question is provided with four alternatives. Answer to each question is to be indicated by **making a dark circle on the number of the correct alternative in the Answer sheet from amongst those given against the corresponding question in the Question Booklet.**
- 6) Rough work can be done any where in the question booklet.
- 7) Extra time of 30 minutes will be allotted to the Physically Handicapped candidate with Defects of vision only.

Please Note the Centre Codes:

- | | |
|-----------------|------|
| 1. Bicholim | 0001 |
| 2. Bardez | 0002 |
| 3. Pernem | 0003 |
| 4. Sattari | 0004 |
| 5. Tiswadi | 0005 |
| 6. Ponda | 0006 |
| 7. Salcete | 0007 |
| 8. Sanguem | 0008 |
| 9. Canacona | 0009 |
| 10. Quepem | 0010 |
| 11. Dharbandora | 0011 |
| 12. Mormugao | 0012 |

Mental Ability Test

Std X

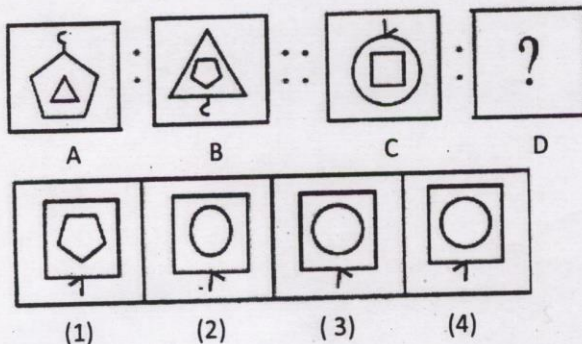
- 1) A is three times more efficient than B. Hence he takes 60 days less in painting a room. In how many days, work will be completed, if A and B both work together ?
 (1) 30 days (2) 45 days (3) $22\frac{1}{2}$ days (4) $17\frac{1}{2}$ days
- 2) In a certain code language MADRAS is coded as NBESBT. How is BOMN coded in that code language ?
 (1) CPNCBX (2) CPNCBZ (3) CPOCBZ (4) COOCEZ
- 3) A man pointing to the photograph says, "The lady in the photograph is my nephew's maternal grandmother". How is the lady in the photograph related to the man's sister who has no other sister ?
 (1) Cousin (2) Mother (3) Sister in law (4) Mother in law
- 4) Danish is the brother of Ravish. Rekha is sister of Antarish. Ravish is son of Rekha. How is Danish related to Rekha ?
 (1) Son (2) Brother (3) Nephew (4) Father
- 5) If 'South-east' is called 'East', 'North-west' is called 'West', "South west is called 'South' and so on. What will 'North' be called ?
 (1) East (2) North-east (3) North-west (4) South
- 6) If + means \div , \div means +, \times means \div and $-$ means \times , Then $5 + 3 \div 14 \times 7 - 5 = \underline{\hspace{1cm}}$
 (1) 5 (2) 25 (3) 47 (4) 10

Directions (Questions 7 to 10): In each of the questions given below, find out the pair that is different from the other three.

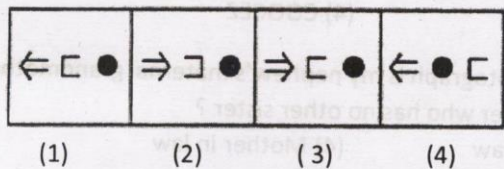
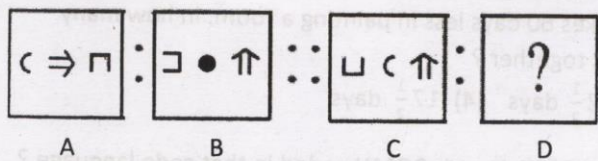
- 7) (1) Weakness -Disease (2) Hunger-Food (3) Misery -War (4) Happiness-Peace
- 8) (1) 15 - 35 (2) 14 - 28 (3) 40 - 80 (4) 16 - 32
- 9) (1) ABC - CBA (2) JKL - KLI (3) XYZ - ZYX (4) MNO - ONM
- 10) (1) 3 - 5 (2) 5 - 3 (3) 7 - 3 (4) 6 - 2

Directions: Q.No.11-12: there is a specific relations between first two figures A and B. Establish the same relationship between the set of figures C and D and select the correct figure amongst the four alternatives:

11)



12)



Directions (Questions 13 to 17): Understand the pattern and choose the correct alternative out of the given alternatives that will complete the series.

13) 3, 12, 27, 48, 75, 108, ?

- (1) 162 (2) 147 (3) 183 (4) 192

14) 3, 8, 13, 24, 41, ?

- (1) 70 (2) 75 (3) 80 (4) 85

15) 1, 4, 2, 8, 6, 24, 22, 88, ?

- (1) 86 (2) 90 (3) 176 (4) 352

16) 5, 16, 49, 104, ?

- (1) 115 (2) 181 (3) 148 (4) 170

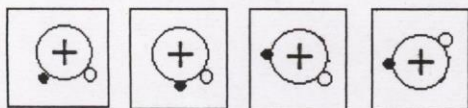
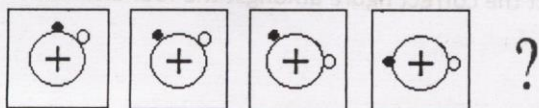
17) KM1, IP3, GS6, EV11, ?

- (1) BY16 (2) CZ18 (3) BX18 (4) CY18

18) A watch reads 4:30. If the minute hand points East, in which direction will the hour hand point?

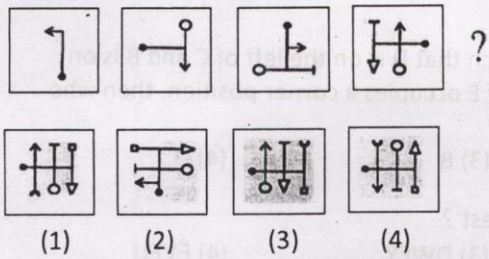
- (1) North (2) North-west (3) South-east (4) North-east

19) Direction: (Qn.no. 19 and 20). Find the correct figure from the alternatives that will complete the given series of figures.



- (1) (2) (3) (4)

20)



- 21) Which one letter when placed at the sign of interrogation in the series Q P, N, K, G, ? Shall complete it?
 (1) C (2) B (3) A (4) D

Direction: Q.No.22 – 23: Letters A to Z are coded using the following cells in the diagram I and sectors in diagram II. The first letter in each cell is coded by its shape while the second letter includes a dot in it. With the help of this instructions, answer the questions given below.

KL	TW	CH
OE	AM	JX
GQ	BD	UV

Diagram I



Diagram II

- 22) How will STEAM be coded?

- (1) (2) (3) (4)

- 23) How will BOX be coded?

- (1) (2) (3) (4)

Directions: Q.No.24 – 28. In each of the following questions a set of numbers/ alphabets or words are given which is analogous to each other in some way. The third term is given after the mark :: which bears a similar relationship to one of the terms given in the options. Find the correct answer.

- 24) Ohm : Watt :: Volt : ?

- (1) Light (2) Ampere (3) Electricity (4) Hour

- 25) HI : 36 :: DE : ?

- (1) 25 (2) 20 (3) 15 (4) 10

- 26) Orange : Fruit :: Spinach : ?

- (1) Vegetable (2) Root (3) Branch (4) Flower

- 27) AYXD : ZBCW :: ? : QKLN

- (1) MOPJ (2) JKLM (3) JPOM (4) MJKL

28) 64: 9 :: 81: ?

(1) 15

(2) 12

(3) 7

(4) 10

29) Five persons A, B, C, D and E are sitting in a row facing you such that D is on the left of C and B is on the right of E. A is on the right of C and B is on the left of D. If E occupies a corner position, then who is sitting in the centre ?

(1) A

(2) C

(3) B

(4) D

30) Which one of the following letters sets is different from the rest ?

(1) AZBY

(2) KLMN

(3) DWEY

(4) EVFU

31) Which word cannot be formed using the letters in the word "PHARMACEUTICAL" only once ?

(1) RHEUMATIC

(2) CRITICAL

(3) PRACTICE

(4) METRIC

32) If CAT is 48, Z is 52. Then what is TEA equal to ?

(1) 48

(2) 52

(3) 60

(4) 50

33) Which one is different from the rest?

(1) Sparrow

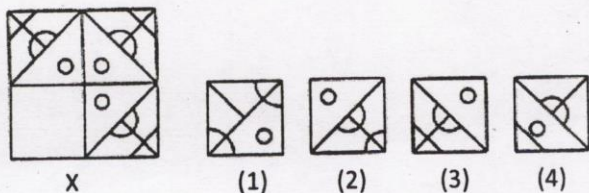
(2) Chicken

(3) Pigeon

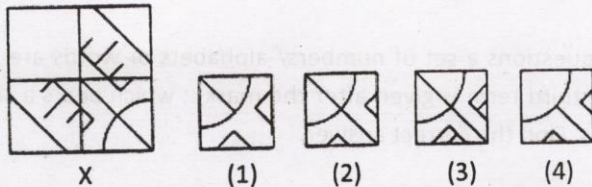
(4) Owl

Direction: Q.No.34 – 35: A part of the figure marked X is missing. The missing part is given among the four alternatives. Select and write the correct answer.

34)



35)



36) If in a certain code, ALTERED is written as ZOGVIVW, then in the same code RELATED would be written as

(1) IVOGZVW

(2) IVOZGVW

(3) IVOZGWY

(4) VIOZGVW

37) Rahim started from point X and walked straight five km west, then turned left and walked straight two km and again turned left and walked straight seven km. In which direction is he from point X ?

(1) North-East

(2) South-West

(3) South-East

(4) North-West

38) Ravi travelled four km straight towards South. He turned left and travelled six km straight, then turned right and travelled four km straight. How far is he from the starting point ?

(1) 8 km

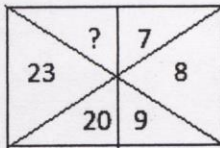
(2) 12 km

(3) 10 km

(4) 18 km

Directions: Q.No. 39 – 44:: In each of the following figures, the numbers are arranged according to certain rule. Find the missing number in place of ? from the alternatives given.

39)



(1) 24

(2) 25

(3) 26

(4) 27

40)

2	72	56
?	0	42
12	20	30

(1) 4

(2) 6

(3) 8

(4) 10

41)

91	64	73
84	76	61
25	60	?

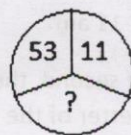
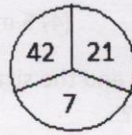
(1) 66

(2) 68

(3) 69

(4) 71

42)



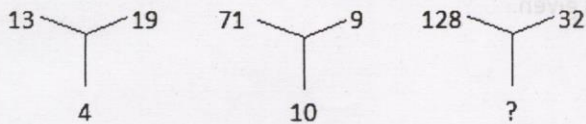
(1) 9

(2) 6

(3) 10

(4) 7

43)



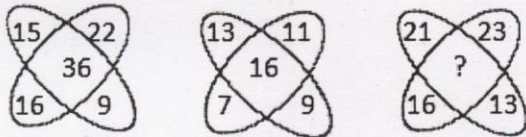
(1) 10

(2) 15

(3) 20

(4) 25

44)



(1) 9

(2) 25

(3) 49

(4) 64

45) Which set of numbers from the four alternatives sets is similar to the given set (49, 25, 9)

(1) (36, 16, 4)

(2) (36, 25, 16)

(3) (39, 26, 13)

(4) (64, 27, 8)

46) which one word cannot be formed from the letters of the word TRANSLOCATION?

(1) START

(2) COAL

(3) TRACTOR

(4) TALCUM

47) ABC' is related to 'ZYX' in the same way as 'IJK' is related to---

(1) RST

(2) RTS

(3) RQP

(4) RPQ

48) Which pair of numbers is different from the rest three?

(1) (5, 25)

(2) (4, 64)

(3) (6, 36)

(4) (9, 81)

49) If in a certain code language, 'ALTERNATE' is written as ZOGVIMZGV' and PERICARDIUM is written as XVIRXZIWRFN', then how would 'CREDENTIAL' be written in the same code?

(1) XIVMWVGRZO

(2) XIUVUWMTRZO

(3) XIVWUNGROZ

(4) XIVWVMGRZO

50) Which one would be a meaningful order of the following ?

I. Windows II. Walls III. Floor IV Foundation V. Roof VI. Room

(1) IV, II, I, V, III, VI

(2) IV, II, V, VI, II, I

(3) IV, V, III, II, I, VI

(4) IV, I, V, VI, II, III

51) A clock gains 5 minutes in 24 hours. It was set right at 10 am on Monday. What will be the true time when the clock indicates 10:30 am on the next Sunday ?

(1) 10 am

(2) 25 minutes past 10 am

(3) 11 am

(4) 5 minutes to 11 am

52) A meaningful word starting with A is made from the first, the second, the fifth and the sixth letter of the word 'CONTRACT'. Which of the following is the middle letter of the word?

(1) C

(2) R

(3) O

(4) T

53) Which one is like dozen, score and decade?

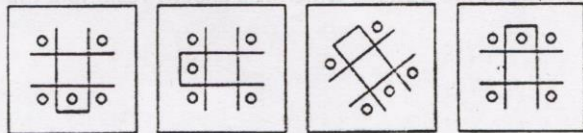
(1) Counting

(2) Number

(3) Measurement

(4) Century

60)

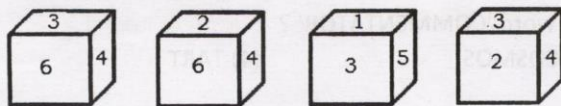
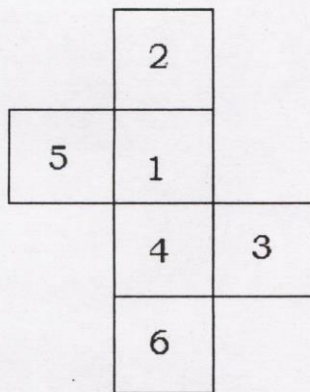


(1) (2) (3) (4)

61) There are twenty people working in an office. The first group of five works between 8.00 A.M. and 2.00 P.M. The second group of ten works between 10.00 A.M. to 4.00 PM. The third group of five works between 12 noon to 6.00 PM. There are three computers in the office which all the employees frequently use. During which of the following hours the computers are likely to be used most ?

(1) 1.00 P.M. - 3.00 P.M. (2) 12 noon - 2.00 P.M. (3) 2.00 P. M. - 4.00 P.M. (4) 10.00 A.M. - 12 noon

62) Which of the following dice is identical to the unfolded figure given below ?



(1) (2) (3) (4)

63) Observe the following cubes and find the number opposite to 2.



(1) 3 (2) 1 (3) 5 (4) 6

Directions: Q.No.64 – 65. In the following questions three statements of numbers following same rules are given. Identify the rule and find the value.

64) If $32 \times 41 = 15$, $51 \times 34 = 47$, $41 \times 52 = 37$ Then $87 \times 53 = ?$

(1) 68 (2) 64 (3) 85 (4) 18

65) If $2 \div 3 = 89$, $3 \div 4 = 2716$, $4 \div 3 = 649$, then $1 \div 2 = ?$

(1) 21 (2) 42 (3) 14 (4) 81

Directions: Q.No. 54 – 55: In each of the following questions, there are three figures marked A, B and C, showing one fold in A, another fold in B and a cut in C. Select the figure from the options which will exactly resemble the unfolded position of C.

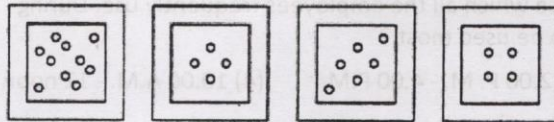
54)



A

B

C



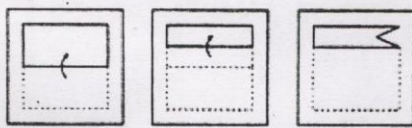
(1)

(2)

(3)

(4)

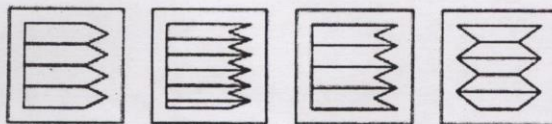
55)



A

B

C



(1)

(2)

(3)

(4)

56) Which one word cannot be made from the letters of the word 'COMMENTATOR' ?

(1) COMMON

(2) MOMENT

(3) COSMOS

(4) TART

57) Which one is different from the rest three?

(1) ABCD

(2) ACDF

(3) EFCH

(4) CFIL

58) In a badminton tournament of singles, each of six players will play with each other player exactly once.

How many matches will be played during the tournament?

(1) 12

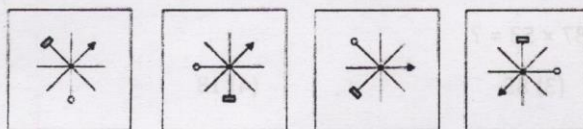
(2) 30

(3) 15

(4) 36

Directions: Q.No.59 – 60: From the four figures given below, three are alike in a certain way and one is different. Find the odd figure

59)



(1)

(2)

(3)

(4)

Directions: Q.No.66 - 69: The words in column A are expressed in a certain code language using letters in column B. However the letters in the code are not in the same order as letters in the words. Find the correct code for each letter and answer the questions given below.

Column A (words)	Column B (codes)
TASK	e v a c
ENTER	m a n d m
RANK	c n v d
TALENT	a m c b a d

66) What is the code for K ?

- (1) v (2) e (3) n (4) c

67) How do the word RENT coded ?

- (1) nbce (2) amdn (3) abmn (4) mcda

68) The code of SALT is _____.

- (1) acbe (2) aedc (3) bvec (4) acde

69) ANT is coded as _____.

- (1) bca (2) cmd (3) acd (4) and

70) If the first day of the year is Sunday and the year is a non-leap year, then the last day of the year is

- (1) Sunday (2) Monday (3) Saturday (4) Friday

71) Ravi is not wearing white and Ajay is not wearing blue. Ravi and Sohan wear different colours. Sachin alone wears red. What is Sohan's colour, if all four of them are wearing different colours ?

- (1) Red (2) Blue (3) White (4) Can't say

72) Which one of the following four alternatives shall complete the series ?

1, 3, 4, 8, 15, 27,

- (1) 55 (2) 44 (3) 37 (4) 50

73) Find the last digit of the number 267^{128}

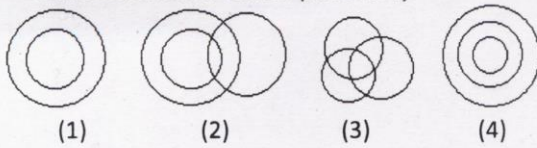
- (1) 9 (2) 6 (3) 7 (4) 3

74) How many 7's are there in the following series which are not immediately followed by 3 but immediately preceded by 8 ?

898762263 2697328727 7 8 7 3 7 794

- (1) 10 (2) 2 (3) 3 (4) 1

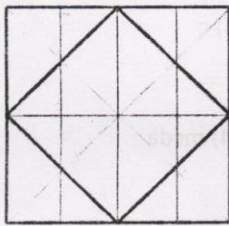
75) Which of the following diagrams correctly represents the relationship among smokers, bidi smokers and cancer patients ?



76) Kisan asked Ramji how many buffaloes he had? Ramji replied that the number of legs of the people and of the buffaloes together is 38. The number of heads of the people and of the buffaloes together is 11. How many buffaloes does Ramji have?

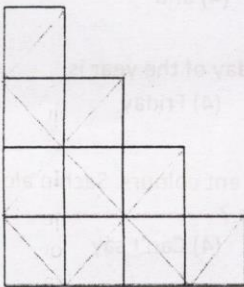
- (1) 32 (2) 3 (3) 9 (4) 8

77) What is the number of straight lines in the following figure ?



- (1) 11 (2) 14 (3) 16 (4) 17

78) What is the number of triangles in the given figure ?



- (1) 26 (2) 36 (3) 41 (4) 40

79) If $9 * 3 = 36$; $10 * 6 = 64$; $9 * 1 = 25$, then $23 * 3$ is

- (1) 169 (2) 32 (3) 52 (4) 576

80) If a means 'plus', b means 'minus', c means 'multiplied by' and d means 'divide by', then $18 \text{ c } 14 \text{ a } 6 \text{ b } 16 \text{ d } 4 = ?$

- (1) 63 (2) 254 (3) 288 (4) 1208

81) The calendar for the year 2005 is the same as for the year ____

- (1) 2010 (2) 2011 (3) 2012 (4) 2013

82) Pointing to a photograph, a man said, "I have no brother or sister but that man's father is my father's son". Whose photograph was this?

- (1) His own (2) His son's (3) His father's (4) His nephew's

83) How many times between 4 am and 5 am, the minute hand and the hour hand of a clock will be at right angles ?

- (1) 2 (2) 3 (3) 4 (4) 1

84) In the given question choose the correct water image of Fig.(X) from amongst the four alternatives given along with it :



- X (1) (2) (3) (4)

Directions (Questions 85 to 87): the best alternative which fits in place of (?):

85) 583 : 293 :: 488 : ?

- (1) 777 (2) 945 (3) 1155 (4) 324

86) Earth: Sun :: Moon : ?

- (1) Orbit (2) Star (3) Round (4) Earth

87) Knife : Cut :: Axe : ?

- (1) Lacerate (2) Chop (3) Slice (4) Tree

Direction: Q.No.88 – 90: Complete the series by filling alphabets from the alternative.

88) a _ b c c b _ c a _ c c a _ b a a b _ c

- (1) ababc (2) abcaa (3) accab (4) bacaa

89) a _ b b c _ a a b _ c c a _ b b c c

- (1) bacb (2) abba (3) caba (4) acba

90) a _ b b c _ a a b _ c a a a _ b c a _

- (1) cabad (2) aabba (3) bacba (4) bbaaa

Directions (Questions 91 and 92) : Choose the missing term out of given alternatives :

91) CAT, FDW, IGZ, ?

- (1) KJA (2) KTC (3) LHD (4) LIC

92) CE, GI, KM, OQ, ?

- (1) TW (2) SU (3) UW (4) TV

93) In the given question, the figure given in one of the four alternative figures is embedded in the question figure (X). Find the correct answer.



X



(1)



(2)



(3)



(4)

94) What will be the difference between the sum of the odd digits and the sum of the even digits of the number 857423 ?

(1) 0

(2) 1

(3) 2

(4) 4

95) In a row of 40 girls, when Komal was shifted to her left by 4 places her number from the left end of the row became 10. What was the number of Swati from the right end of the row if Swati was three places to the right of Komal's original position ?

(1) 22

(2) 23

(3) 24

(4) 25

96) Thirty six vehicles are parked in a parking lot in a single row. After the first car there is one scooter. After the second car there are two scooters. After the third car there are three scooters and so on. Find out the number of scooters in the second half of the row?

(1) 10

(2) 12

(3) 15

(4) 17

Direction: In questions 97 and 98, the numbers are obtained by using one of the rules given below. Identify and write the correct rule number.

1. Add the number to the square of the number.

2. Subtract the number from its cube.

3. Multiply a number by seven and subtract five.

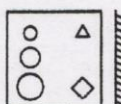
4. Divide the number by two and add eight.

97) 9, 10, 12, 16, 24

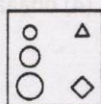
98) 6, 12, 30, 56, 132

Directions: Q.No.99 – 100, In each question choose the correct mirror image of Fig.(x) from amongst the four alternatives given along with it :

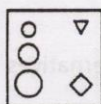
99)



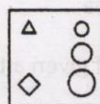
(X)



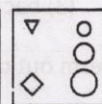
(1)



(2)

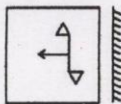


(3)

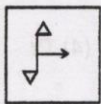


(4)

100)



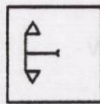
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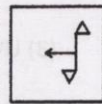
(1)



(2)



(3)



(4)

NATIONAL TALENT SEARCH EXAM (NTSE) 2020-21

MENTAL ABILITY TEST (MAT) Std. X

Corrected ANSWER KEY

D.O.E. 13/12/2020

Q	A	Q	A	Q	A	Q	A	Q	A
1	3	21	2	41	1	61	2	81	3
2	2	22	1	42	2	62	1	82	2
3	2	23	3	43	3	63	3	83	1
4	1	24	2	44	4	64	4	84	1
5	3	25	4	45	1	65	3	85	2
6	1	26	1	46	4	66	1	86	4
7	2	27	3	47	3	67	2	87	2
8	1	28	4	48	2	68	1	88	1
9	2	29	4	49	4	69	3	89	4
10	3	30	2	50	1	70	2	90	2
11	3	31	2	51	1	71	4	91	4
12	1	32	2	52	4	72	4	92	2
13	3	33	4	53	4	73	1	93	4
14	1	34	3	54	1	74	2	94	3
15	1	35	2	55	3	75	2	95	3
16	2	36	2	56	3	76	4	96	3
17	4	37	3	57	4	77	2	97	4
18	4	38	3	58	3	78	3	98	1
19	3	39	3	59	1	79	1	99	3
20	2	40	2	60	3	80	2	100	1

