## NTSE STAGE – I SET – A (2020 – 21) (For Class – X) MENTAL ABILITY TEST (MAT) QUESTION PAPER

Directions : (Q 1 to 5) What number will come at the place of question mark?

1.	4, -8, 16, -32, 64, ? (1) 128 (3) -64	(2) –128 (4) –192
2.	$\frac{1}{81}, \frac{1}{54}, \frac{1}{36}, \frac{1}{24}, (?)$ (1) $\frac{1}{32}$ (3) $\frac{1}{16}$	(2) $\frac{1}{9}$ (D) $\frac{1}{18}$
3.	2, 6, 3, 4, 20, 5, 6, (?), 7 (1) 25 (3) 30	(2) 28 (4) 42
4.	10, 5, 13, 10, 16, 20, 19, (?) (1) 22 (3) 38	(2) 23 (4) 40
5.	30, 2, 20, 6, 12, 12, ? (1) 6 (3) 10	(2) 8 (4) 15

Directions : (Q. 6 to 8) Which number will replace the question mark?





10. How many triangles are in the given figure?



11. How many straight lines are in given figure?



12. How many Rectangles are in given figure?

(1) 3	15	1	1	1	1
(3) 2	45				

**Directions : (Q. 13 to 15)** P, Q, R, S, T and U are sitting along the circle facing the center (a) P is immediate neighbour of Q who is second to the right of R.

- (b) S is second to the left of T.
- (c) U is immediate neighbour of T.
- 13. Which of the following is correct?
  - (1) S is between U and R
  - (3) P is between Q and R
- (2) Q is between P and T (4) T is between U and Q

14.	What is the position of U? (1) Second to the right of R (3) To the immediate left of S	(2) Between T and P (4) Second to the right of Q
15.	Which of the following is wrong? (1) P is to the immediate left of R. (3) S is to the immediate right of Q.	<ul><li>(2) Q is to the immediate right of P.</li><li>(4) T is to the immediate of U.</li></ul>
Direct	ions : (Q. 16 & 17)	
(a) 'P → (b) 'P ÷ (c) 'P + (d) 'P -	<ul> <li>Q' means 'P is brother of Q'</li> <li>Q' means 'P is sister of Q'</li> <li>Q' means 'P is father of Q'</li> <li>Q' means 'P is mother of Q'</li> </ul>	
16.	Which of the following means 'S is nephew (1) S $\times$ T $\div$ J + R (3) R – M $\div$ S $\times$ T	of R'? (2) R ÷ M – S + T (4) R + M – S ÷ T
17.	Which of the following means M is grandfath (1) M – J $\div$ W (3) M $\times$ T + W	ner of W? (2) M + J × W (4) M + J – W
18.	If 283 is written as 328, 347 and 734 and so have least difference between them? (1) 827 and 347 (3) 748 and 518	o on, then which of the following two numbers will (2) 347 and 518 (4) 518 and 829
Direct letters \$ L 2 =	ion:(Q 19 to 21) These questions are b and numbers. :?PC7%EH@÷8KBM5TV3*	ased on the following arrangement of symbols,
19.	How many such symbols are there in the	ne arrangement, each of which is immediately
	(1) 1 (3) 3	(2) 2 (4) 4
20.	If all the numbers are deleted from the arra of the 14th element from the left end?	ngement, which element will be the 7th to the left
	(1) % (3) @	(2) H (4) C
21.	<ul> <li>'2 = P' is related to '7 % H' in the arrangement (1) ÷ 8 S</li> <li>(3) @ ÷ K</li> </ul>	ent in the same way as '' is related to 'M5V'. (2) ÷ @ K (4) @ ÷ 8
22.	Odd one out: (1) FASTER (3) GREATER	(2) BIGGER (4) LARGER
23.	Choose most similar word in meaning in the	e words following:
	(1) Awake (3) Upright	<ul><li>(2) Erected</li><li>(4) Stood</li></ul>

24. Ram went 15 km. North of his house. After this, he turned West and walked a distance of 10 Km., after which he turned and walked a distance of 5 Km. South and finally he turned East and walked 10 Km. Now in which direction is he from his house?

(1) EAST
(2) WEST
(3) NORTH
(4) SOUTH

25. Looking at a picture, Radha reveals that his mother's only daughter is my mother. How is Radha related to that person?(1) Nephew(2) Sister

(4) Niece

- 26. If '-' means '×', '×' means '+', '+' means '÷' and '÷' means '−', then 40 × 12 + 3 6 ÷ 60 = ? (1) 7.95 (2) 16 (3) 4 (4) 479.95
- 27. 'ASTOUNDER' word can be divided into how many independent words without changing the order of letters and using each letter only once?
  (1) 0
  (2) 1
  (3) 2
  (4) 3
- 28. If the day before Yesterday was Thursday, then when would it be Sunday?
   (1) Today
   (2) 2 days after Today
   (3) Tomorrow
   (4) Yesterday

(3) Wife

**Direction : (Q 29 & 30)** Put the given words in the sequence as in the dictionary and then select the correct sequence.

29.	<ul> <li>(A) Palisade</li> <li>(B) Protect</li> <li>(C) Pursuit</li> <li>(D) Profession</li> <li>(E) Process</li> <li>(1) A, B, D, E, C</li> <li>(3) A, E, B, D, C</li> </ul>	(2) A, D, B, E C (4) A, E, D, B C
30.	<ul> <li>(A) Credential</li> <li>(B) Compensate</li> <li>(C) Credible</li> <li>(D) Cremate</li> <li>(E) Collapse</li> <li>(1) B, E, A, C, D</li> <li>(3) E, B, A, C, D</li> </ul>	(2) E, B, C, A, D (4) B, E, C, A, D
31.	Museum is related to Curator in the same w (1) Manger (3) Jailor	/ay as prison is related to (2) Monitor (4) Warden
32.	Choose a meaningful word with given numb 1 A 2 B 3 L 4 R 5 O 6 U (1) 5, 6, 3, 1, 2, 4 (3) 5, 6, 4, 2, 3, 1	oers. (2) 3, 1, 2, 5, 6, 4 (4) 4, 5, 6, 3, 2, 1
33.	If 43 = 158, 35 = 824, 42 = 153, then 32 = ? (1) 84 (3) 85	(2) 83 (4) 94

34. If (14)<sup>3</sup> is added to the square of a number, the answer so obtained is 4425. What is the number?
(1) 1849
(2) 43

	) 43
(3) 41 (D	) 1681

- 35. The ratio of the present ages of Ajay and Vijay is 7 : 6 and the product of their ag4es is 672 years. How old was Vijay years ago?
  - (1) 20 Years (2) 18 years (3) 15 years (4) 25 years
- Direction: (Q. 36 to 40) K, L, M, N, P, Q, R, S, U and W are the only 10 members in a department. There is a proposal to form a term within the members of the department, subject to the following conditions.
- (a) A team must include exactly one among P, R and S
- (b) If a team include either M or Q but not both
- (c) If a team includes one among S, U and W, then it must also include the other two
- (d) If a team includes K, then it must also include L and vice versa
- (e) L and N cannot be member of the same team
- (f) L and U cannot be members of the same team

36.	What would be the size	of the largest possible team?
	(1) 8	(2) 7
	(3) 6	(4) 5

37.	What would be the size of a tea	m that includes K?
	(1) 2 and 3	(2) 2 and 4
	(3) only 2	(4) only 4

38. In how many ways a team can be constituted so that team includes N?
(1) 6
(2) 5
(3) 4
(4) 3

39.	Who can not be a member of a	team of size 3?
	(1) L	(2) M

- (3) N (4) P
- 40. Who can be a member of a team of size 5?
  - (1) K (2) L (3) M (4) P

Direction: (Q. 41 to 45) in each question, the main statement is followed by four sentences. Select the pair of sentences that relate logically to the given statement.

41.	Either Gita is sick or she is carless			
	A. GIta is not sick	B. Gita is not careless		
	C. Gita is sick	D. Gita is careless		
	(1) AB	(2) AD		
	(3) BA	(4) DA		

42. Raman gets a swollen nose-whenever he eats hamburgers.

(A) Raman gets a swollen nose	(B) Raman does not eat hamburgers
(C) Raman does not get a swollen nose	(D) Raman eats hamburgers
(1) AB	(2) DC
(3) AC	(4) None

- 43. Either the employers have no confidence in the management or they are hostile by nature. (A) They are hostile by nature
  - (B) They are not hostile by nature
  - (C) They have confidence in the management
  - (D) They have no confidence in the management
  - (1) BA (2) CB (4) BD
  - (3) DA
- 44. When ever Raman reads late into the nights, his father beats him.
  - (A) Raman's father does not beat him
  - (C) Raman reads early in the morning
  - (1) CD

(3) CA

- (B) Raman reads late into the night (D) Raman's father beats him in the morning
- (2) BD

(3) AB

- (4) None of these
- 45. All irresponsible parents shout if their children do not read
  - (A) All irresponsible parents do not shout
  - (B) Children read
  - (C) Children do not read
  - (D) All irresponsible parents shout
  - (1) AB

- (2) BA
- (4) All of these

Direction: (Q.46 to 49) Choose exact venn diagram for given conditions in the questions.



- 46. A: Apples are not sweets B: All sweets are tasty C: No apple is tasty
- 47. A: Some popular people are handsome B: All actors are handsome C: Some actors are popular
- A: All bad things are men 48. B: All men are sad C: Some sad things are bad
- 49. A: Oranges are not sweet B: Some sweets are apples C: Some oranges are apples
- 50. Find the time between 9:00 and 10:00 when the clock needles coincide:

(1) 
$$9:10\frac{9}{11}$$
 (2)  $9:47\frac{10}{11}$   
(3)  $9:46\frac{4}{11}$  (4)  $9:49\frac{1}{11}$ 

Direction: (Q. 51 & 52) Study the following information carefully and answer the questions given below:

The sum of the income of A and B is greater than the income of both C and D. The sum of the income of A and C is equal to the income of both B and D. A, earns half of the sum of B's and D's income.

51.	Which of the following statement is false? (1) A's income is more than B's (3) C's income is more than D's	(2) B's income is more than D's (4) All are right
52.	Who has the highest income? (1) A (3) C	(2) B (4) D

53. Find the time between 9 : 00 and 10:00 when the clock needles are in opposite direction

(1) $9:10\frac{9}{11}$	(2) 9:16 <mark>4</mark> 11
(3) $9:11\frac{10}{11}$	(4) None

54. Which is the Venn diagram showing the correct relationship between Doctor, Lawyer and Professionals?





55. What day was on 8 March 2011?(1) Monday(3) Wednesday

(2) Tuesday (4) None

Direction: (Q. 56 to 58) In each question (1), (2), (3) and (4) figures are given, out of which 3 figures are similar in a way, yet one figure does not match the other three. Select the incompatible figures for the other three







Direction: (Q.59 to 61) In each of the following questions, 3 question figures are given as A, B, C and 4 answer figures are given as 1, 2, 3 and 4. Select the figure from the answer figures that will continue the series given in the question figures.

59. Question figures



60. **Question figures** 



Direction: (Q. 65 to 69) Odd one out

65.	(1) BD Kg	(2) Km Np
	(3) Pr Su	(4) Tw Xz

66.	(1) 9 – 3	(2) $\frac{1}{2} - \frac{1}{8}$
	(3) $\frac{1}{3} - \frac{1}{12}$	(4) 24 – 6
67.	(1) Moscow (3) Beijing	(2) New Delhi (4) New York
68.	(1) Army : General (3) Creche : Child	(2) Team : Captain (4) Meeting : Chairman

69. Count the number of triangles and squares in the figure given below



(1) 26 Triangles, 5 squares(3) 27 Triangles, 6 squares

(2) 26 Triangles, 6 squares(4) 28 Triangles, 5 squares

70. In the following question, a square transparent paper is given along with a pattern four option figures are given below, which show the shape formed after the paper is folded on the dot line select the one that completes the pattern answer figure. Question figures



Answer figures



- 71. If Suresh reached some place on Tuesday, he said that he has come 3 days before then on what day the man reached who was late by 4 days?
  - (1) Monday(2) Tuesday(3) Wednesday(4) Thursday

72. In the following question, figure (X) is given in which a point is established. Four other answer figures (1), (2), (3) and (4) are give after this figure. Only one of these answer figures is such that it is possible to establish the point according to the conditions give in figure X. Find the correct answer figure.



- 73. If the words 'INTIMATION', INFORMATION, INTEREST, INTERROGATION, INSTIGATION' are kept in order according to the dictionary, which will be the 4<sup>th</sup> letter from the left side in the last word? (2) O
  - (1) R (3) T
- 74. Age of D is middle among five friends, K is the youngest. U is greater than N and N is smaller than A and D. Who is the biggest among them?

(4) |

- (1) A (2) U (3) N (4) Things given are insufficient
- Four complex shapes followed by an X are given such that the shape X is embedded in one 75. of the four. Choose the correct option

## **Question Figure**



Answer figures Answer figure



Direction: (Q. 76 & 77) In each of the following questions two statements A and B are given, based on their conclusions. 4 statements are given. Candidates have to guess the correct conclusions, considering both the statement to be true even if they seem to be false.

76. Statement: (A) Ajay is an artist

Conclusion:

(B) Artists are Handsome

sion: (1) All handsome people are artists

- (2) Ajay is handsome
- (3) Ajay is not handsome
- (4) Handsome people are not artists
- 77. Statement: (A) All knowledge is good
  - (B) All knowledge is difficult sion: (1) Some good things are hard

Conclusion: (1

- (2) All difficult things are difficult
- (3) All good things are hard
- (4) Simple things are not knowledge

78. If the English alphabet is written in reverse order, which will be the third letter to the right of the 15<sup>th</sup> letter from the left?

- (1) I (2) H (3) G (4) J
- 79. The managing director of a firm arrived at the conference Hall 10 minutes before 12: 30 to interview and it was 20 minutes before the chairman. If the chairman arrived half an Hour late than the scheduled time for interview, than what was the scheduled time for the interview.
  (1) 11: 55
  (2) 12: 05
  (3) 12: 15
  (4) 12: 10

80. How many such 4 are there in the following number series, where 3 is immediately before and 2 is immediately after 45362434293410342743234234

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

Direction: (Q. 81 to 83) Choose water image of given figure/word(X)

81.	NDL2CA430Y	
	(X)	
	(1) NDL2CA430Y	Y034ACSLDN
	(3) NOLSCA450Y	A034AC2LDN (4)



83. bchixpv (X) (1) Pchixbv

(3) Pc**P**ixbv

(2) Pc**µ**ixp∧ (4) Pc**µ**ixb∧

Direction: (Q. 84 to 86) Choose Mirror image of given figure/words(x)



87. Which number is opposite to 4? (1)2(2)5(3)1(4) 3 88. What is the opposite to \$ (1) 1(2)# (3) @ (4) % Direction: (Q. 89 to 91) In a given cube: (a) Red colour is opposite to Black (b) Green is between Red & black (c) Brown and Blue near to each other (d) Blue & White near to each other Give answer on the bases of given information: 89. Which 4 colour are near to each other? (1) Black, Blue, Brown, Red (2) Green, Brown, Red, White (3) Blue, Brown, Red, White (4) Black, Blue, Red, White 90. Which colour is opposite to white? (1) Brown (2) Red (3) Green (4) Blue 91. Conclusion of (a) and (e) Point: (1) Blue colour on Top (2) Black colour on Top (4) White colour on Top (3) Green colour on Top Direction: (Q. 92 to 94) Each side of solid cube is 12 cm. The opposite face of this cube are painted Red, Blue and Black. After this, the cube is cut into small cubes whose each side is 2 cm. Answer the following questions on this basis: 92. What will be the number of cubes with colourless faces? (1)8(2) 27 (3)36(4) 6493. What will be the number of cubes with three faces painted in three different colours? (1)0(2)4

(1) 0 (2) 4 (3) 8 (4) None of these

94. How many cubes will have one of its face Red and other faces colourless? (1) 18 (2) 24 (3) 32 (4) 36

95. Select a proper group of letters form the given alternations c \_ bbb \_ abbb\_ abbb\_ (1) aabcb (2) abccb (3) abacb (4) bacbb

96. In a certain code language GARNISH is written as RGAINHS. What will GENIOUS be written in that code language? (2) NGEOISU C

(1) NEGOISU	(2) NGEOISI
(3) NGESUOI	(4) NEGSUC

97. In a certain code languor INKER is written as GLLGT and GLIDE is written as EJJFG, What will JINKS be written in that code language? (1) GFOMU (2) HGMMU (3) HGOGH (4) HGOMU

98. If U is denoted by 7, M by 2, I by 5, O by 1, K by 8 and J by 4, then what will be the numeric form of the word MOUJIK, when written in the reverse order? (1) 217458 (2) 845712 (3) 854712 (4) 857412

Direction: (Q.99 & 100) Choose wrong number in the given series

99.	10, 26, 74, 218, 654, 1946, 5834 (1) 26 (3) 218	(2) 74 (4) 654
100.	325, 259, 202, 160, 127, 105, 94 (1) 94 (3) 105	(2) 127 (4) 202