NATIONAL TALENT SEARCH EXAMINATION-2018-19,GUJARAT

MENTAL ABILITY TEST (MAT) HINTS & SOLUTIONS

1.

$$\begin{array}{cccccc} 2 & 3 & 5 & 9 & 17 & 33 \\ & 1 & 2 & 4 & 8 & 16 \end{array}$$

2.

$$\begin{array}{cccccc} 2 & 7 & 12 & 17 & ? & 27 \\ & 5 & 5 & 5 & 5 & \end{array}$$

3. 11 , 121 , 1331 , ?

(A) (11) , $(11)^2$, $(11)^3$, $(11)^4$

4.

$$\begin{array}{cccccc} 656 & 432 & 320 & 264 & 236 & ? \\ & -224 & -112 & -56 & -28 & -4 \\ & \div 2 & \div 2 & \div 2 & \div 2 & \end{array}$$

5. 3,19,97,391, ? ,2359

$3\times 6+1=19$

$19\times 5+2=97$

$97\times 4+3=391$

$391\times 3+4=1177$

6. 2,7,24,77 ?

$2\times 3+1=7$

$7\times 3+3=24$

$24\times 3+5=77$

$77\times 3+7=238$

7. 11,5,13,10,15,15,17,?

11 + 2 = 13

13 + 2 = 15

15 + 2 = 17

17 + 2 = 19

5 + 5 = 10

10 + 5 = 15

15 + 5 = 20

8. $1331, 2197, 4913, 6859, ? , 24389$

$(11)^3$, $(13)^3$, $(17)^3$,$(23)^3$ $(29)^3$

9. 97,86,99,88,101, ?

97 +2 = 99

99+2 =101

101 + 2 = 103

Same as

86 + 2 = 88
88 + 2 = 90

21. B,F,J,N,R,V,Z,D,H,L , ?
2 ,6,10,14,18,22,26,4,8,12,16
16 = P

22. (A)
ABC EFG JKL PQ?
D HI MNO

23. (B)
DD jjj PP vvv B?
2 3 2 3 2
Ans. B

24. *AHL* ? *CFJ DEI*
(1,8,12) (2,7,11) (3,6,10) (4,5,9)

25.
R A M E S H H S E M A
18 1 13 5 19 8 8 19 5 13 1

26. (C)
A C F J O ? B
1 3 6 10 15 ? 2
2 3 4 5 6 7

1 4 8 13 19

27. *A D H M* (?)
3 4 5 6

4 9 15 22 30
5 6 7 8

28. LU – TUPLUBTU – LUBT – P – UBTUP
B P U L

29. KM5,IP8,GS11,EV14 ?

K	I	G	E	C
11	9	7	5	3
	−2	−2	−2	−2

M	*P*	*S*	*V*	*Y*
13	16	19	22	25
	+3	+3	+3	+3

5	8	11	14	17
	+3	+3	+3	+3

Answer : CY17

30. $A=1, B=2, C=3 \Rightarrow A\times B\times C=1\times 2\times 3=6$

$E=5, F=6, G=7 \Rightarrow E\times F\times G=5\times 6\times 7=210$

$J=5, J=6, K=7 \Rightarrow I\times J\times K=9\times 10\times 11=990$

31. Both dots are downwards OR Dots at end

32. All of are Mirror images other than D.

33. Hands & Left are in triangles shape. In option D White not in other options.

34. Other shape has 2 more sides than inner shape but not in C.

35. (A) Curved letter

36. Upper & lower part are different in plane.

37. Wide tube

38. One triangle is not available.

39. Two line segments.

40. All other images are crossing to each other ,. But not in option C.

42. no more food ⟶ ta ka da

more then that ⟶ sa pa ka

more ⟶ ka

that ⟶ sa pa ka

43. LAP ⟶ KMZBOQ

L ⟶ K L M

A ⟶ Z A B

P ⟶ O P Q

NOTE ⟶ ? (MONPSUDF)

N ⟶ MNO

O ⟶ NOP

T ⟶ STU

E ⟶ DEF

44. E = 5

E M P I R E = 66

5 + 13 + 16 – 9 + 18 + 5 = 66

REPAJR = 15 + 5 + 16 + 1 9 + 18 = 97

45. SSC ⟶ 19193

S → 19

S → 19

C → 3

BBC ⟶ 223

46. (B)

CHARACTER ⟶ 241612376

CHILDREN ⟶ 24859670

H = 4 , I = 8 , R = 6 , A = 1 , L = 5

HIRALAL ⟶ 4861515

47.

A	P	P	L	E		E	T	T	P	I
1	16	16	12	5	⟶	5	20	20	16	9

Diff of 4 in each correspond letter

D	E	L	H	I		H	J	P	L	M
4	5	12	8	9	⟶	8	9	16	12	13

48.

D	O	C	U	M	E	N	T	S
4	15	5	21	13	5	14	20	19
	↓			↓		↓		
	Reverse with +1			+1		Reverse with +1		

⟶

V	D	P	E	N	R	S	M	D
22	4	16	5	14	18	19	13	4

ADVE R TISE ⟶ FWEB S DRHS

49. A = 1

AND = 19

1 +14+4 = 19

BAT = 2 + 1 + 20 = 23

50. MEAN = $57*

DOME = 93$5

MOAN = $37*

53. (D) Sum of digit must be 11.

76. (B) 24-36 ÷ 12 + 8 x 4 = 53

77. (D) 15 – 8 x 6 ÷ 12 + 4

15 x 8 ÷ 6 + 12 – 4

$15 \times 8 \times \frac{1}{6} + 12 - 4 = 28$

78. (A) 14 – 4 x 17 ÷ 12 + 8

14 x 4 ÷ 7 + 12 - 8

$14 \times 4 \times \frac{1}{7} + 12 - 8 = 12$

79. (C) 20 + 16 ÷ 4 – 3 x 2 = 18

80. (B) 15 ÷3 +24 – 12 x 2 = 5

81. (C)

82. (A) Odd days = 2
Monday + 2 = Wednesday

83. (A)
1st Jan – 2000 = Saturday (365 days in between)
31st Dec – 2000 = Sunday
1st Jan 2001 = Monday
(2000 = Leap Year)

84. (A)
Multiple of 400 is a Leap year for country years

85. (B) R,M,H,K are brother & sisters

86. (A)

$$N^{\Theta} \longrightarrow W^{\oplus}$$
$$\downarrow$$
$$K^{\oplus} \longrightarrow T$$

Maternal uncle

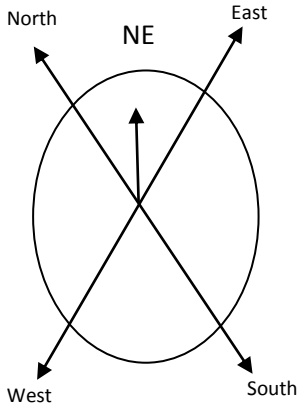
87. (B)

$$N^{\Theta}\ F^{\oplus}$$
$$\downarrow \quad \downarrow$$
$$x \quad x$$

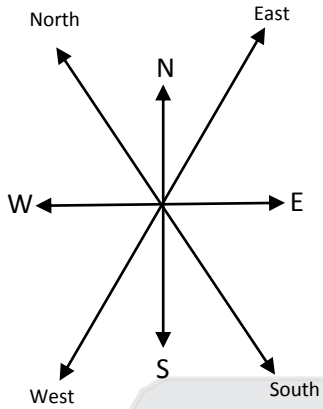
89. (A)

$$S^{+} \leftarrow T \leftrightarrow R^{+}$$
$$\downarrow \quad \downarrow$$
$$x^{+} \rightarrow y^{+}$$

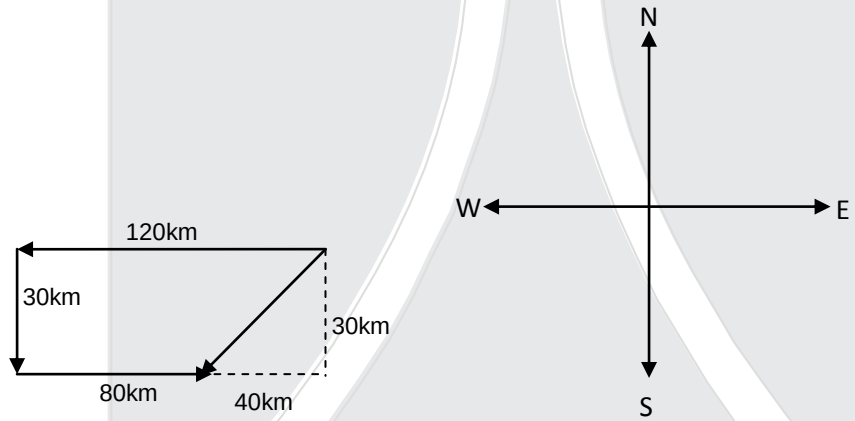
90. (C)



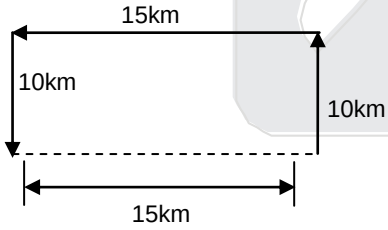
91. (C)


North
East
N
W
E
S
West
South

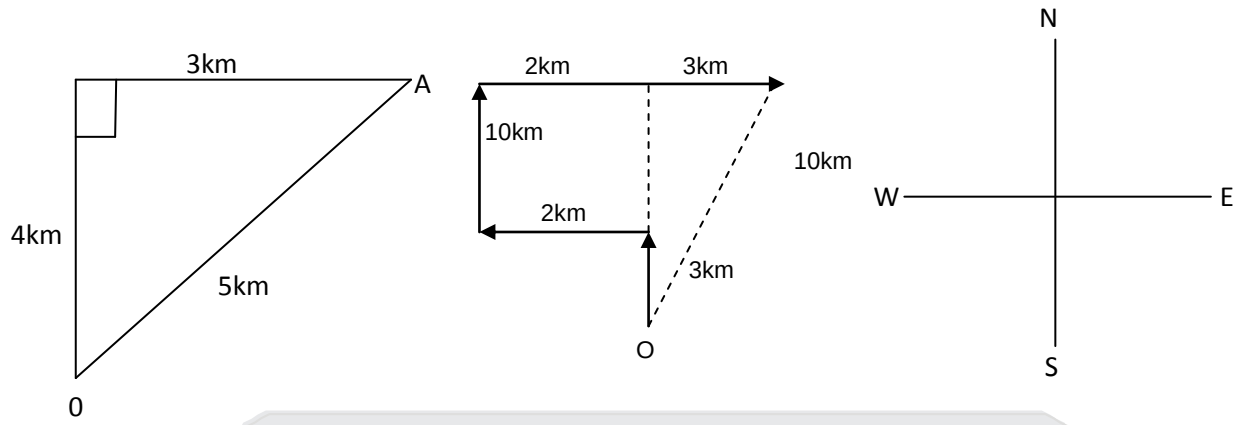
92. (D)


120km
30km
30km
80km
40km
N
W
E
S

93.


15km
10km
10km
15km

94.



96. (B)

Let Age of A $\rightarrow$ X and B $\rightarrow$ y

$\frac{x}{y}=\frac{3}{2}$ *and* $\frac{x+5}{y+5}=\frac{8}{7}$

$\frac{2}{y}x=y$ *and* $7x+35=By+40$

On substitution x = 3 and y = 2

So , x y = 5

97. (C)

Let Age of Suman = Y and Age of Ledcy = x

$\frac{x+5}{y+5}=\frac{4}{5}$

X + y = 35 and

So by Elimination

x = 15 and y = 20

So , y –x = 5

98. (C)

Let Father's Age = y

Mother age = z

Y = 3x 8 and z = y + 3 = 3x+8+3 = 3x +11

so, If x = 7

so, z = 3(7) +11 = 32

99. (A)

Total chances

= $^{12}C_3=220$

100. (A)

$\frac{n(n+1)}{2}\Rightarrow\frac{15\times16}{2}=15\times8=120$

Here n = 15

(for first person)