

NTSE STAGE – I (HARYANA STATE)
(For Class – X)
MATHEMATICAL APTITUDE TEST (MAT)

FIITJEE ANSWER KEYS (SET – C)

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

*** No option is correct**

MATHEMATICAL APTITUDE TEST (MAT) FIITJEE HINTS & SOLUTIONS (SET – C)

1. 4
1. B U S H $\Rightarrow 2 + 21 + 19 + 8 = 50$
2 21 19 8

C A M P $\Rightarrow 3 + 1 + 13 + 16 = 33$
3 1 13 16

Similarly L I K E $\Rightarrow 12 + 9 + 11 + 5 = 37$
12 9 11 5

2. 4
2. B U R N $\Rightarrow 2 + 21 + 18 + 14 = 55$
2 21 18 14

C U R T $\Rightarrow 3 + 21 + 18 + 20 = 62$
3 21 18 20

D U C K $\Rightarrow 4 + 21 + 3 + 11 = 39$
4 21 3 11

B U O Y $\Rightarrow 2 + 21 + 15 + 25 = 63$
2 21 15 25

3. 3
3. K I N G : C A S T
11 9 14 7 : 3 1 19 20
41 \neq 43

B U R Y : S U R E
2 21 18 25 : 19 21 18 5
66 \neq 63

R I C H : B O A T
18 9 3 8 : 2 15 1 20
38 = 38

B L U E : C A N T
2 12 21 5 : 3 1 14 20
40 \neq 38

4. 2
4. $X + Y = 24 + 25 = 49 \neq 50$
 $Z - T = 26 - 20 = 6 = 6$
 $B \times V = 2 \times 22 = 44 \neq 41$
 $R \div I = 18 \div 9 = 2 \neq 5$

5. 4
5. M O N K E Y $\Rightarrow 13 + 15 + 14 + 11 + 5 + 25 = 83$
13 15 14 11 5 25

D O G J A C K Y $\Rightarrow 4 + 15 + 7 + 10 + 1 + 3 + 11 + 25 = 76$

4 15 7 10 1 3 11 25

H A I H A P P Y $\Rightarrow 8 + 1 + 9 + 8 + 1 + 16 + 16 + 25 = 84$
8 1 9 8 1 16 16 25

S O L U C K Y $\Rightarrow 19 + 15 + 12 + 21 + 3 + 11 + 25 = 106$
19 15 12 21 3 11 25

6. 3
6. T + E = Y
20 + 5 = 25

O + K = Z
15 + 11 = 26

Similarly

R + G = Y
18 + 7 = 25

7. * No option is correct
7. In every 2 hours, hour hand & min. hand will be 4 times at right angles i.e. in 24 hours 48 times, but between 2:00 (am/pm) & 4:00 (am/pm) and between 8:00 (am/pm) & 10:00 (am/pm) they form right angle only 3 times.
 \therefore In 24 hours right angle between hands will be formed 44 times.

8. 1
8. Speed = 92.7 km/h = $92.7 \times \frac{5}{18}$ m/sec $\Rightarrow 25.75$ m/sec

Time = 17 min = $17 \times 60 = 1020$ sec

\therefore Distance = Speed \times Time
= $25.75 \times 1020 \Rightarrow 26265$ m

9. 1

9.

Mie	pie	=	blue	light
Mie	tie	=	blue	berry
aie	tie	=	rasp	berry

Clearly, light fly = pie zie

10. 3
 10. S T U D E N T
 -1 -1 -1 +1 -1 -1 -1
 R S T E D M S

Similarly

T E A C H E R
 -1 -1 -1 +1 -1 -1 -1
 S D Z D G D Q

11. 4
 11. C H A I R
 +3 +3 +3 +3 +3
 F K D L U

Similarly,

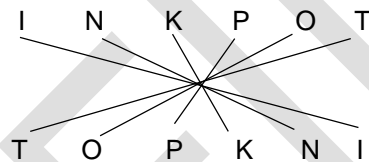
R A I D
 +3 +3 +3 +3
 U D L G

12. 3
 12. H N D T
 I I I I
 3 6 9 4

Similarly,

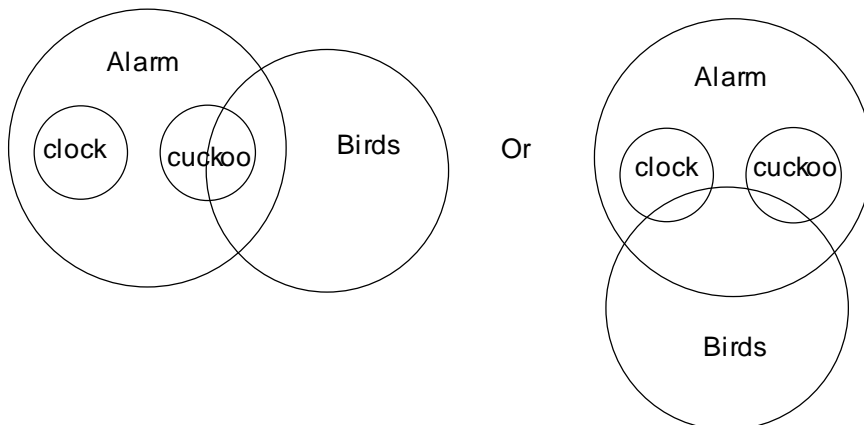
T H D
 I I I (Direct letter coding)
 4 3 9

13. 4
 13. Written in reverse order:



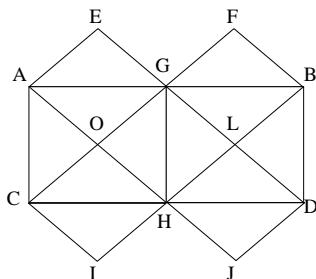
14. 2
 14. Athletes among youth who are not footballers are represented the letter which common to rectangle & circle but not triangle i.e. 'g'.

15. 1
 15.



16. 3
 16. $12^2 + 5^2 = 13^2$
 $15^2 + 8^2 = 17^2$
 Similarly,
 $40^2 + 9^2 = 41^2$
17. 3
 17. As per observation
18. 1
 18. As per observation
19. 1
 19. As per observation
20. 3
 20. As per observation
21. 1
 21. As per observation.
22. 1
 22. As per observation.
23. 1 or 3
 23. If we consider option 1 then size of lines is short, and if we consider option 3 then proper circle is not formed.
24. 3
 24. As per observation.
25. 2
 25. As per observation
26. 3
 26. As per observation.
27. 1
 27. As per observation.
28. 2
 28. As per observation
29. 2
 29. CI, AJ, ED, FB, JD, IB, CF, AE, AC, GH, BD, AB, CD.

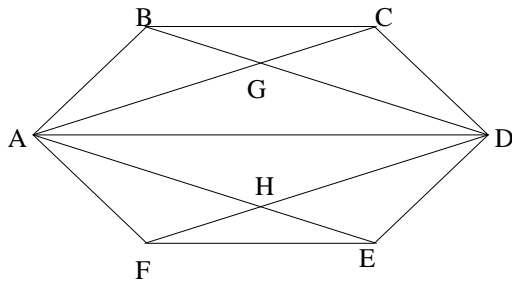
30. 1
 30.



→ ACG, GFB, CIH, JHD, AHB, CGD, AOG, GOH, COH, AOC, CAG, CAH, CGH, HAG, GLB, LBD, HLD, GLH, GBD, GHD, HBD, GHB
 Total number of triangles: 22

31. 3
 31. 2 figure square – 5
 4 figure square – 2
 Total = 7 square

32. * No option correct
 32.



The quadrilateral in figure → ABCD, ABDE, ABDF, ABDH, CDHA, CDEA, CDFA, DEAG, DEFA, FAGD and AGDH
 Total = 11 quadrilateral

33. 4
 33. The pentagons in figure → ABCDH, AFEDG, ABCDE, CDEFA, DEFAB, ABCDF
 Although these are only convex pentagons.

34. 2
 34. As per observation.

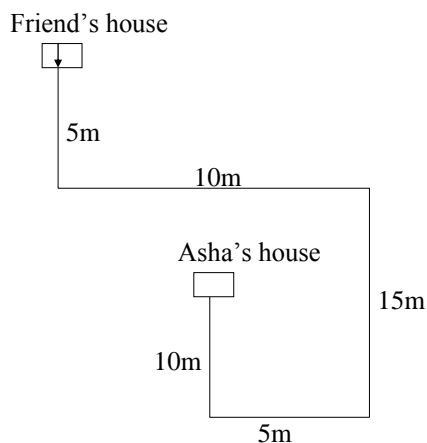
35. 4
 35. As per observation

36. 2
 36. As per observation

37. 3
 37. As per observation

38. 1
 38. As per observation

39. 1
 39..

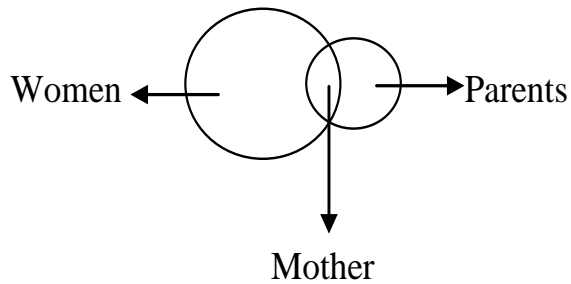


Asha's friend's house facing south.

40. 4
40. $B + C = 6$
 $B + D = 6$
 $D + C = 6$

$$\frac{2(B + D + C) = 18}{\therefore B + D + C = 9}$$

41. 1
41..



42. 3
42. Let number of buffalos – x
Number of cows – $2x$
 $\Rightarrow x + 2x = 60$
 $x = 20$
number of buffalos – 20
number of cows -40
If x 17th and there are 9 cows ahead x
Number of buffalos = $16 - 3 = 7$ ahead of x
Number of buffalos after $x = 20 - 7 - 1 = 12$

43. 1
43. Asha > Lata > Alka > Rani > Sadhana

44. 4
44. As per observation.

45. 3
45. As per observation

46. 2
46. If we consider the reflex image of the embedded figure (X)
(As without reflex image no other option is satisfied)

47. 4
47. As per observation

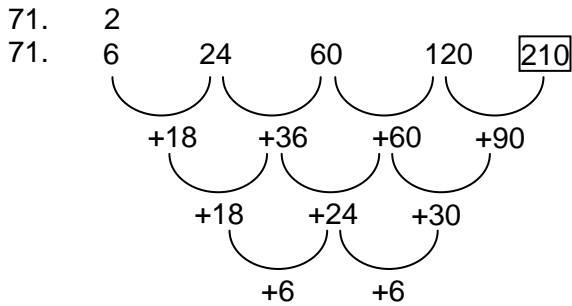
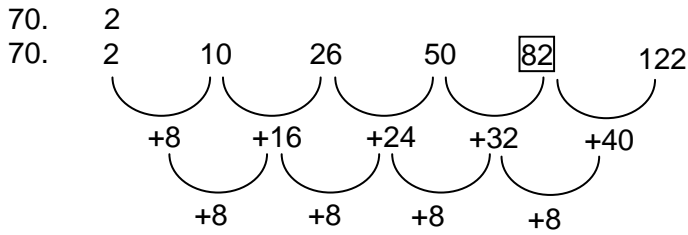
48. 1
48. As per observation

49. * No option correct.
49. Best possible answer is option 1. But in option 1 the direction of S is not appropriate.

50. 3

50. As per observation
51. 2
51. As per observation
52. 4
52. As per observation
53. * No option correct.
53. One bottom line is missing in figure (C), otherwise best possible option is option 2.
54. 4
54. As per observation
55. 3
55. As per observation
56. 2
56. As per observation
57. * No option correct
57. Only figure A is possible.
58. 2
58. As per observation
59. 3
59. As per observation
60. 4
60. As per observation
61. 4
61. As per observation.
62. 1
62. As per observation.
63. 3
63. As per observation.
64. 4
64. As per observation.
65. 4
65. As per observation.
66. 2
66. As per observation.
67. 1
67. As per observation.
68. *No option correct
68. According to the pattern, figure 3 will be formed if the Δ in the figure is shaded.
69. 3

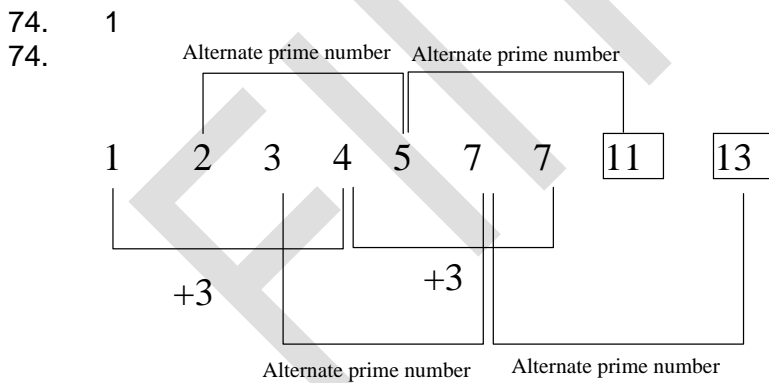
69. As per observation.



72. *No option correct

72. From third number onwards, the sequence followed is $\times 9, +9, \times 9, +9$
Then the answer = $819 \times 9 = 7371$ (option 1)
However, first 2 numbers are given extra and do not fit into any pattern.

73. 1
73. Product of last two terms
 $2 \times 3 = 6$
 $3 \times 6 = 18$
 $6 \times 18 = 108$
 $18 \times 108 = 1944$



75. 2
75. $24576 \div 4 = 6144$
 $6144 \div 4 = 1536$
 $1536 \div 4 = 384$
 $384 \div 4 = 96$
 $96 \div 4 = 24$

76. 4
76. $3 \times 1 + 1 = 4$
 $4 \times 2 + 2 = 10$

$$10 \times 3 + 3 = \boxed{33}$$

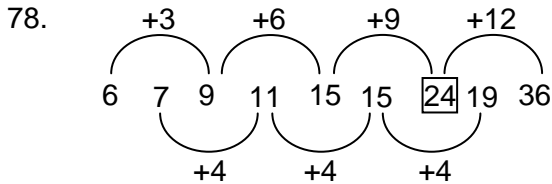
$$33 \times 4 + 4 = 136$$

$$136 \times 5 + 5 = 685$$

77. 3

77. $(3 + 8) + 2 = 13$
 $(8 + 13) + 3 = 24$
 $(13 + 24) + 4 = \boxed{41}$
 $(24 + 41) + 5 = 70$

78. 2



79. 2

79. According to Shitin his mothers birthday \rightarrow 18, 19, 20
 According to his father \rightarrow 20, 21, 22, 23
 Common date is 20th April.
 So, his mother's birthday is definitely on 20th April.

80. 1

80. If Today is Monday then day after tomorrow will be Wednesday (Birthday)
 Then Holi is also on Wednesday.
 So, day after Holi will be Thursday.

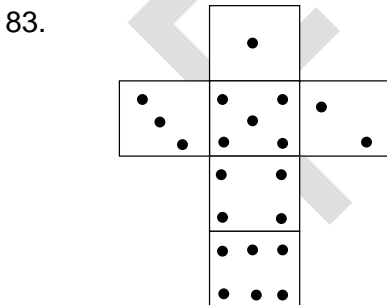
81. 1

81. 3 dots are adjacent to 2, 4 and 6. So, these cannot be opposite to 3, hence it can be 1 or 5.

82. 1

82. 5 and 1 dots are adjacent to both 2 and 4.
 \therefore 4 dots are opposite to 2.

83. 2



Clearly, 2 dots are opposite to 3.

84. 1

84. As per observation.

85. 3

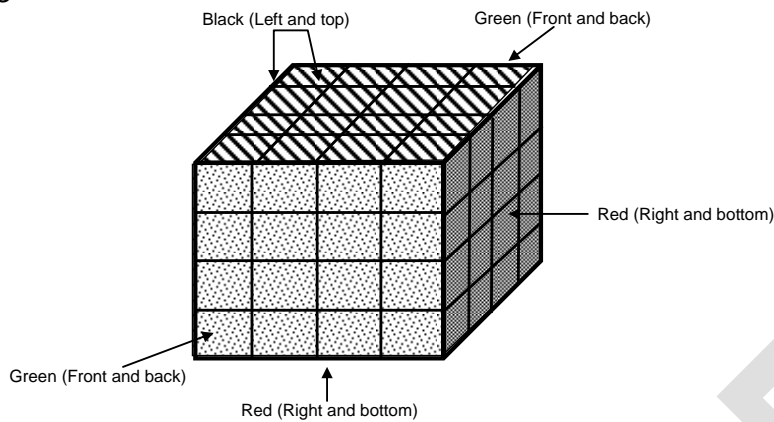
85. As per observation.

86. 4

86. As per observation.

87. 2
 87. Clearly 6 and 1 are opposite,
 2 and 5 are opposite
 And 3 and 4 are opposite

88. 3
 88.

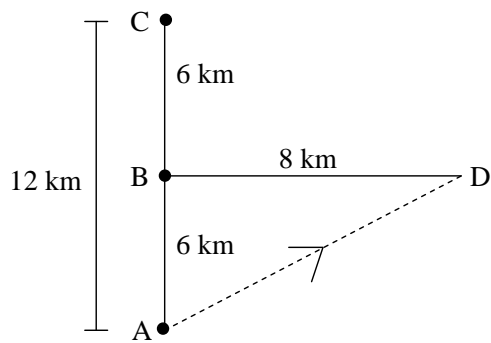


here $n = 4$ and $n^3 = 64$
 $(n - 2)^3 =$ no face painted, i.e., 8 in number.

89. 3
 89. 1 face painted cubes = $6(n - 2)^2 = 6 \times 2^2 = 24$
90. 2
 90. 3 face painted cubes = 8 (only corners)
91. 1
 91. 2 face painted cubes = $12(n - 2) = 24$
92. 2
 92. 1 face green and adjacent face black or red will be on edges i.e., 2 on each edge of 2 faces i.e., 16.
93. 3
 93. Pattern is $-1, -1, +4, -1$ except option 3.
94. 1
 94. $5 + 3 + 4 = 12 \rightarrow L$
 $9 + 6 + 4 = 19 \rightarrow S$
 $7 + 1 + 9 = 16 \rightarrow P$
 So, $8 + 3 + 2 = 13 \rightarrow M$
95. 2
 95. $\sqrt{60 + 61} - \sqrt{45 + 55} = 1$
 $\sqrt{82 + 87} - \sqrt{49 + 32} = 4$
 Similarly,
 $\sqrt{79 + 65} - \sqrt{37 + 12} = 5$
96. 1
 96. $15 \text{ sec} = 90^\circ$
 $\therefore 12 \text{ sec} = 72^\circ$ (from north towards east)

Or 18° (from east towards north)

97. 4
97.



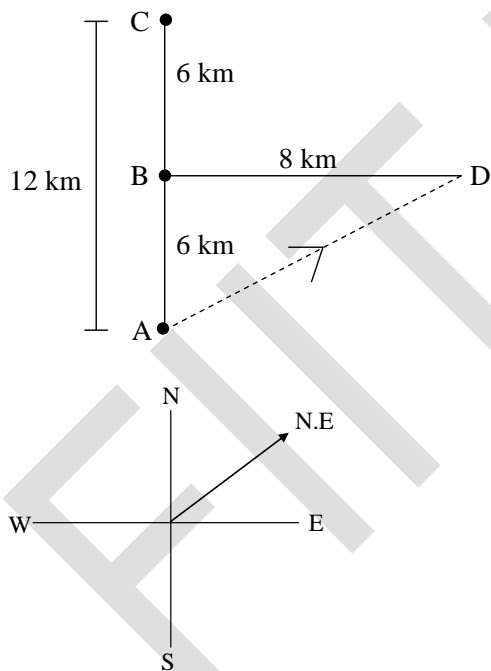
$$(AD)^2 = (AB)^2 + (BD)^2$$

$$(AD)^2 = (6)^2 + (8)^2$$

$$AD = \sqrt{36 + 64}$$

$$AD = \sqrt{100} = 10 \text{ km}$$

98. 1
98.



She is North – East direction from starting point.

99. *No option correct.

99. In option 2 inside + is not properly rotated and outer triangle shape is not appropriate.
In option 3 the position of the + is not appropriate.

100. 3

100. As per observation.