NTSE STAGE-I (2013)
CLASS-X [MAT]

HINTS & SOLUTIONS

ANSWER KEY

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

1. The sequence is a combination of two series
   I   2, 6, 12, ?
   II   30, 20, 12
   The pattern followed in I is $1^2 + 1, 2^2 + 2, 3^2 + 3, 4^2 + 4,...$
   ∴   missing number = $4^2 + 4 = 20$.

3. The term of the series are
   previous term x2 + 1, x2 –2, x2 + 3, x2 – 4, x2 + 5.... and so on.
   Hence, the next term would be
   114 x2 + 5 = 233.

4. The term of the series are
   previous term + 24,+ 40,+56,72,88, and so on.
   Hence, the next term would be
   217+ 88 = 305.

5. The sequence is a combination of three series
   I   0, 3, 8, ?
   II   2, 3, 4,5
   III 2, 5, 10, 17
   The pattern followed in I is + 3,+ 5,+ 7
   ∴   missing number = 8+ 7 = 15.

9. 8 × 2 – 1 = 15
   15 × 2 + 1 = 31
   31 × 2 – 1 = 61
   61 × 2 + 1 = 123
   123 × 2 – 1 = 245
   245 × 2 + 1 = 491

10. $2^2 - 1 = 3$
$2^2 + 2 = 6$
$5^2 - 1 = 24$
$5^2 + 5 = 30$
$8^2 - 1 = 63$
$8^2 + 8 = 72$
$11^2 - 1 = 120$
$11^2 + 11 = 132$

15. $(+ 5, + 5, \mp 1, + 5, + 5)$ Ans. (2) SUNQS

16. $(+ 2, + 1, - 1, + 2, - 2)$ Ans (1) ZJSUM

17. $(+3, -2, +3, -2, + 3)$ Ans. (3) MQNRO

19. stq   logic + 5

20. $(7 + 5 + 9) \times 3 = 63$
$(11 + 3 + 6) \times 2 = 40$
$(7 + 18 + 11) \times 4 = 144$

21. $\dfrac{12 \times 8 \times 6}{9} = 64$

$\dfrac{5 \times 12 \times 10}{8} = 75$

$\dfrac{21 \times 9 \times 12}{14} = 162$

22. $(7 \times 8) + (6 + 4) = 66$
$(3 \times 9) + (7 + 4) = 38$
$(11 \times 9) + (7 + 2) = 108$

23. $\dfrac{4 \times 3 \times 5 \times 2}{16} = 7.5$

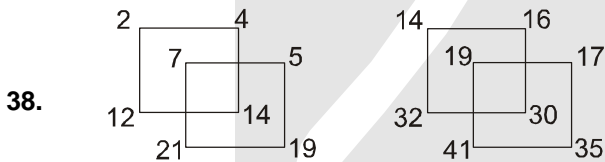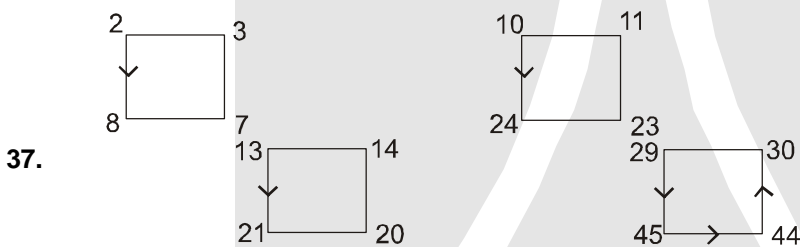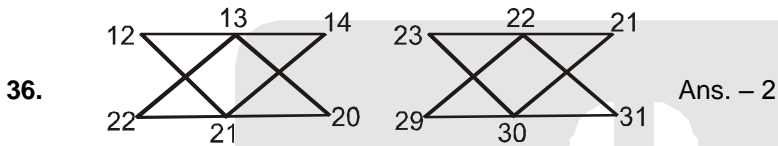$\dfrac{5 \times 6 \times 2 \times 3}{16} = 11.25$

$\dfrac{5 \times 2 \times 2 \times 9}{16} = 11.25$

27. The pattern of numbers are as followed
$1^2 - 1 = 0$
$2^2 - 2 = 2$
$3^2 - 3 = 6$
$4^2 - 4 = 12$
$5^2 - 5 = 20$
$6^2 - 6 = 30$
$7^2 - 7 = 42$
$8^2 - 8 = 56$
$9^2 - 8 = 72$

28. In column first $91 + 84 + 25 = 200$
In column second $64 + 76 + 60 = 200$
In column thrid $73 + 61 + x = 200$
So, $x = 66$

31. $20 \div 4 = 5 \Rightarrow 5^2 = 25$
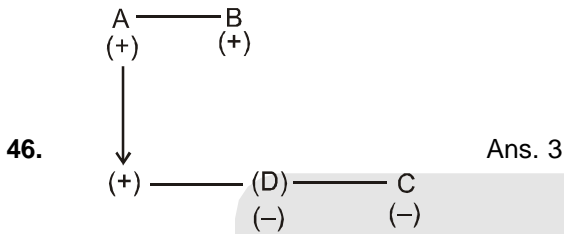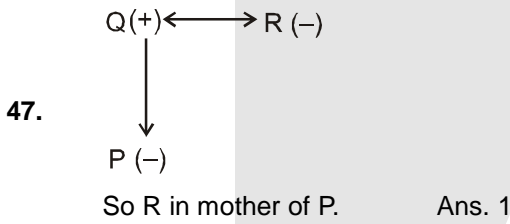$81 \div 27 = 3 \Rightarrow 3^2 = 9$
$44 \div 11 = 4 \Rightarrow 4^2 = 16$

36.

Ans. – 2

37.

38.

(41 to 45)

Letter	Code
G →	u
Z →	n
C →	q
U →	z
S →	o
X →	v
B →	l
U →	e
W →	y
T →	x
O →	b
A →	s
R →	w
E →	t
H →	f
M →	d
J →	a
I →	p
N →	k
L →	g
P →	r

41. Ans. (3) bpxg
42. Ans. (1) boqx
43. Ans. (4) gteqw
44. Ans. (3) ptok
45. Ans. (2) wfsq

46.

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A ———— B
(+)      (+)
 │
 ▼
(+) ——— (D) ——— C
         (−)     (−)
```

Ans. 3

So B in Uncle of C

47.

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Q(+) ◄———► R (−)
 │
 ▼
P (−)
```

So R in mother of P.   Ans. 1

48. $3^2 - 1 : 3^3 + 1 : : 4^2 - 1 : 4^3 + 1$

OR

$2^2 \times 2 : 3^3 + 1 : : 3^2 \times 2 : 4^3 + 1$

49. $2^3 + 3^3 : 3^3 + 4^3 : : 4^3 + 5^3 : 5^3 + 6^3$

50. $\dfrac{7}{11} : \dfrac{13}{17} : : \dfrac{19}{23}$

Next Prime no after 23 is 29, 31 : $\dfrac{29}{31}$

OR

7 + 17 = 11 + 13 and 19 + 33 = 23 + 29

So, Ans. $\dfrac{29}{33}$

51.

Ans.

52.

53.