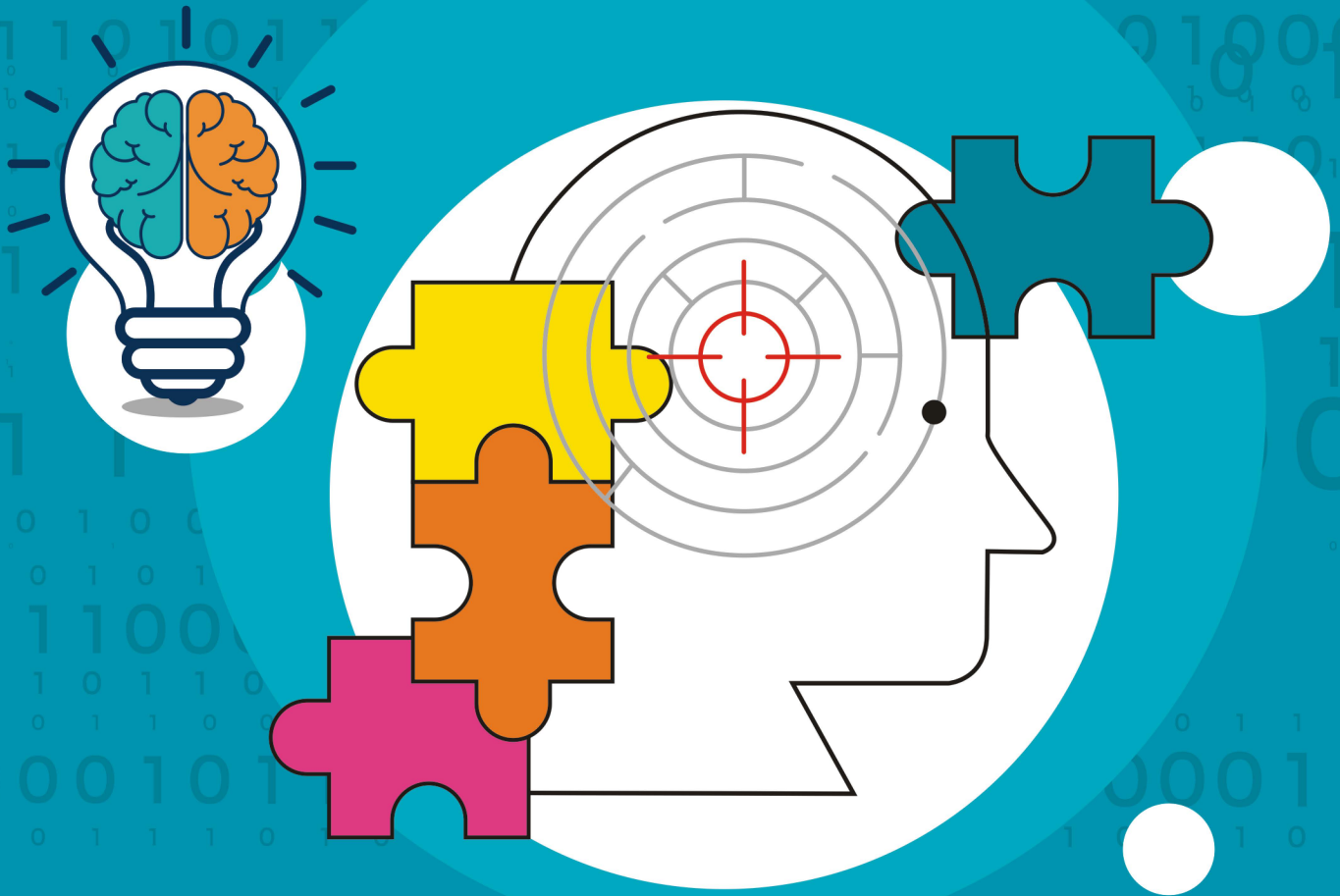NEET Sarthi KOTA

Mental Ability

CLASS :10th

Number Series | Coding & Decoding
Missing Character | Analogy

Online Platform for

NEET, JEE & NTSE

NEET SARTHI PRE NURTURE MODULES DETAILS

SUBJECTS	Class 6	Class 7	Class 8	Class 9	Class 10
Physics	Module 1	Module 1	Module 1	Module 1	Module 1
Chemistry	Module 1	Module 1	Module 1	Module 1	Module 1
Biology	Module 1	Module 1	Module 1	Module 1	Module 1
Maths	Module 1	Module 1 Module 2	Module 1	Module 1 Module 2	Module 1 Module 2
Social Science	Module 1	Module 1	Module 1	Module 1 Module 2	Module 1 Module 2
Mental Ability	Module 1	Module 1	Module 1	Module 1	Module 1 Module 2
Total No. of Modules	6	7	6	8	9

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Mental Ability

PRE-NURTURE DIVISION
Sample Module English

STUDENT NAME:_____

SECTION: _____ROLL NO: _____

CONTENTS

"To succeed in your mission, you must have single-minded devotion to your goal."

Dr. A.P.J. Abdul Kalam, popularly known as the 'Missile Man' of India, was a source of inspiration for tens and thousands of Indians. A league apart, his life philosophy and teachings are not only admired by the older generation, but especially reminisced by young. Kalam's prodigious rise from Rameswaram, a small but famous pilgrimage town in Tamil Nadu, led him to become one of the world's most accomplished leaders.

Dr. A.P.J. Abdul Kalam

"All power is within you; you can do anything and everything."

Swami Vivekananda ji's original name was Narendranath. He was born on 12th January, 1863 at Kolkata (Swamiji's Jayanti i.e. birth anniversary is celebrated as the 'International Youth Day'). Right from childhood, two aspects of his behavior could clearly be noticed. One was his devout and compassionate nature and the other was his readiness to perform any act of courage.

Swami Vivekananda

Chapter-01

Number Series

This chapter consists of questions in which series of numbers or alphabetical letters or combinations of both are given, which are generally called the terms of the series. These terms follow a certain pattern throughout the series. The candidate is required to study the given series, identify the pattern followed in the series and either complete the given series with the most suitable alternative or find the wrong term in the series.

NUMBER SERIES

In this type of series, the set of given numbers in a series are related to one another in a particular pattern or manner. The relationship between the numbers may be

- Consecutive odd/even numbers
- Consecutive prime/ composite numbers
- Squares/cubes of some numbers with/without variation of addition or substraction of some number
- Sum/product/difference of preceding number(s)
- Addition/subtraction/multiplication/division by some number, and
- Many more combinations of the relationship given above

1.1 NUMBER SERIES

1.1. (A) Find the Missing Term

Completing the given series by finding the missing term(s)

Direction: Find the missing term in each of the following series:

Ex.1 1, 6, 15, ?, 45, 66, 91

(1) 25   (2) 26   (3) 27   (4) 28

Sol. Clearly, the given sequence follows the pattern : +5, +9, +13, +17, +21, +25, ...

Thus, 1 +5 = 6, 6 + 9 = 15, ...

So, missing term = 15 + 13 = 28.

Hence, the answer is (4).

Ex.2 2, 5, 9, 19, 37, ?

(1) 73   (2) 75   (3) 76   (4) 78

Sol. Clearly, we have : $2 \times 2 + 1 = 5$, $5 \times 2 - 1 = 9$, $9 \times 2 + 1 = 19$, $19 \times 2 - 1 = 37$, ...

So, missing term = $37 \times 2 + 1 = 75$.

Hence, the answer is (2).

Ex.3 4, 8, 28, 80, 244, ?

(1) 278   (2) 428   (3) 628   (4) 728

Sol. The terms of the given series are : $3^1 + 1$, $3^2 - 1$, $3^3 + 1$, $3^4 - 1$, $3^5 + 1$, ...

So, missing term = $3^6 - 1 = 729 - 1 = 728$.

Hence, the answer is (4).

Ex.4 10000, 11000, 9900, 10890, 9801, ?

(1) 10241   (2) 10423   (3) 10781   (4) 10929

Sol. Clearly, alternately we add and subtract 10% of a term to obtain the next term of the series.

Thus, 10000 + (10% of 10000) = 11000; 11000 – (10% of 11000) = 9900,

9900 + (10% of 9900) = 10890, 10890 – (10% of 10890) = 9801.

So, missing term = 9801 + (10% of 9801) = 9801 + 980 = 10781.

Hence, the answer is (3).

Ex.5 0, 6, 24, 60, 120, 210, ?

(1) 240   (2) 290   (3) 336   (4) 504

Sol. Clearly, the given series is : $1^3 - 1, 2^3 - 2, 3^3 - 3, 4^3 - 4, 5^3 - 5, 6^3 - 6$.

∴ Missing term = $7^3 - 7 = 343 - 7 = 336$.

Hence, the answer is (3).

Ex.6 1, 4, 27, 16, ?, 36, 343

(1) 25   (2) 87   (3) 120   (4) 125

Sol. Clearly, the given series consists of cubes of odd numbers and squares of even numbers, i.e., $1^3, 2^2, 3^3, 4^2, ...$

So, missing term = $5^3 = 125$.

Hence, the answer is (4)

Ex.7 4, 6, 12, 14, 28, 30, ?

(1) 32   (2) 60   (3) 62   (4) 64

Sol. The given sequence is a combination of two series:

I. 4, 12, 28, ?   and   II. 6, 14, 30, ...

Now, the pattern followed in each of the above two series is : +8, +16, +32, ...

So, missing number = (28 + 32) = 60.

Hence, the answer is (2).

Ex.8 1, 3, 3, 6, 7, 9, ? 12, 21

(1) 10   (2) 11   (3) 12   (4) 13

Sol. Clearly, the given sequence is a combination of two series :

I. 1, 3, 7, ?, 21   and   II. 3, 6, 9, 12

The pattern followed in I is + 2, +4, ... and the pattern followed in II is + 3.

So, missing number = 7 + 6 = 13

Hence, the answer is (4).

Ex.9 Which fraction comes next in the sequence $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, ?$

(1) $\frac{9}{32}$ (2) $\frac{10}{17}$ (3) $\frac{11}{34}$ (4) $\frac{12}{35}$

Sol. Clearly, the numerators of the fractions in the given sequence form the series 1, 3, 5, 7, in which each term is obtained by adding 2 to the previous term.

The denominators of the fractions form the series 2, 4, 8, 16, i.e., $2^1, 2^2, 2^3, 2^4$.

So, the numerator of the next fraction will be (7 + 2) i.e. 9 and the denominator will be 2^5 i.e. 32.

Thus, the next term is $\frac{9}{32}$. Hence, the answer is (1).

Triangular Pattern Series :

Sometimes, the differences between the consecutive terms of a series, again form a series. The differences between the consecutive terms of the new series so formed, again form a series. This pattern continues till we attain a uniform difference between the consecutive terms of the series.

Ex.10 Find the missing term in the series : 3, 20, 63, 144, 275, ?

    (1) 354   (2) 468   (3) 548   (4) 554

Sol. As discussed above, we may label the given series as series I and then form series II to IV as shown below :

Series I :   3   20 63 144   275   ?

Series II :   17 43 81   131   ?

Series III : 26 38 50   ?

Series IV : 12 12

Clearly, the pattern in series III is + 12.

So, missing term in series III = 50 + 12 = 62;

missing term in series II = 131 + 62 = 193;

missing term in series I = 275 + 193 = 468.

Thus, the missing term is 468. Hence, the answer is (2).

Direct Method : Clearly, we have :

Missing term = 275 + (131 + 50 + 12) = 468.

1.1. **(B) Find the Wrong Term**

    Finding the Wrong term in the given series

Ex.11 Find the wrong number in the series :

7, 28, 63, 124, 215, 342, 511

    (1) 7   (2) 28   (3) 124   (4) 215   (5) 342

Sol. Clearly, the correct sequence is :

$2^3 - 1, 3^3 - 1, 4^3 - 1, 5^3 - 1, 6^3 - 1, 7^3 - 1, 8^3 - 1$.

So, 28 is wrong and should be replaced by $(3^3 - 1)$ i.e. 26.

Hence, the answer is (2)

Ex.12 Find the wrong number in the series :

3, 8, 15, 24, 34, 48, 63

    (1) 15   (2) 24   (3) 34   (4) 48   (5) 63

Sol. The difference between consecutive terms of the given series are respectively 5, 7, 9, 11, 13 and 15.

Clearly, 34 is a wrong number and must be replaced by (24 + 11) i.e. 35.

Hence, the answer is (3).

Ex.13 Identify the wrong number in the series :

69, 55, 26, 13, 5

    (1) 5   (2) 13   (3) 26   (4) 55

Sol. Clearly, in the given series, each term is one more than the product of the digits of the preceding term. Thus,

$(6 \times 9) + 1 = 55, (5 \times 5) + 1 = 26, (2 \times 6) + 1 = 13$

So, 5 is wrong and must be replaced by $(1 \times 3) + 1$ i.e. 4.

Hence, the answer is (1).

1.2 **CONTINUOUS PATTERN SERIES**

This type of questions usually consists of a series of small letters which follow a certain pattern. However, some letter are missing from the series. These missing letters are then given in a proper sequence as one of the alternatives. The candidate is required to choose this alternative as the answer.

Ex.14 aab __aaa__bba__

(1) baa   (2) abb   (3) bab   (4) aab   (5) bbb

Sol: We proceed step by step as shown below :

1. The first blank space should be filled in by 'b' so that we have two a's followed by two b's.

2. The second blank space should be filled in either by 'a' so that we have four a's followed by two b's, or 'b' so that we have three a's followed by three b's.

3. The last space must be filled in by 'a'.

4. Thus, we have two possible answers : 'baa' and 'bba'. But only 'baa' appears in the alternatives. So, the answer is (1)

5. In case, we had both the possible answers in the alternatives, we would have chosen the one that forms a more prominent pattern, which is aabb/aaabbb/aa. Thus, our answer would have been 'bba'.

Correspondence Series :

This type of series consists of three sequence with three different elements (usually capital letters, digits and small letters). On the basis of the similarity in positions in the three sequences, a capital letter is found to correspond with a unique digit and a unique small letter, whenever it occurs. The candidate is required to trace out this correspondence and accordingly choose the elements to be filled in at the desired places. Consider the following example :

Ex.15 In the following series, choose the alternative which contains the numerals to be filled in the marked spaces, in the correct order :

B __ __ D __ __ C A B D A C B
__ __ 4 1 3 2 __ __ __? ? ? ?
a __ a __ b c __ c __ __ __ __ __

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

Sol: Clearly, in the second series, 1 occurs at the same position as D occurs in the first series. So, 1 corresponds to D. Thus, the first question mark below D is to be replaced by 1. Now, in the third series, c at the eighth place corresponds to A in the first series, while the second question mark below A is to be replaced by 2.

In the third series, a at the first place corresponds to B in the first series and a at the third place corresponds to 4 in the second series. So, 4 corresponds to B. Thus the question mark below B is to be replaced by 4.

Now, only 3 remains. So, 3 corresponds to C. Thus, the question mark below C is to be replaced by 3. Thus, DACB corresponds to 1, 2, 3, 4.

Hence, the answer is (2).

ANALYTICAL QUESTIONS

Directions: (Q.1 to Q.5): In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

Q.1 1, 9, 25, 49, ?, 121
(1) 64   (2) 81   (3) 91   (4) 100

Q.2 4, 7, 12, 19, 28, ?
(1) 30   (2) 36   (3) 39   (4) 49

Q.3 11, 13, 17, 19, 23, 25, ?
(1) 26   (2) 27   (3) 29   (4) 37

Q.4 6, 12, 21, ?, 48
(1) 33   (2) 38   (3) 40   (4) 45

Q.5 2, 5, 9, ?, 20, 27
(1) 14   (2) 16   (3) 18   (4) 24

Direction: (Q.6 to Q.10): In each of the following questions, one term in the number series is wrong. Find out the wrong term.

Q.6 196, 169, 144, 121, 101
(1) 101   (2) 121   (3) 169   (4) 196

Q.7 3, 10, 27, 4, 16, 64, 5, 25, 125
(1) 3   (2) 4   (3) 10   (4) 27

Q.8 25, 36, 49, 81, 121, 169, 225
(1) 36   (2) 49   (3) 169   (4) 225

Q.9 2, 5, 10, 17, 26, 37, 50, 64
(1) 17   (2) 26   (3) 37   (4) 64

Q.10 5, 27, 61, 122, 213, 340, 509
(1) 27   (2) 61   (3) 122   (4) 509

Directions: (Q.11 to Q.12): In each of the following three questions a series of numbers is given which follows certain rules. One of the numbers is missing. Choose the missing number from the alternatives given below.

Q.11 284, 140, 68, ?
(1) 70   (2) 34   (3) 32   (4) 60

Q.12 17496, 1944, 216, ?
(1) 20   (2) 18   (3) 24   (4) 22

Q.13 What should come in place of the question mark in the following number series ?
6 7 16 51 208 ? 6276
(1) 1045   (2) 941   (3) 836   (4) 1254

Q.14 What is the first term in the exponential sequence below ?
{_, _, _, 81, 243, 729, ...}
(1) 1   (2) 3   (3) 9   (4) 27

Q.15 90, 180, 12, 50, 100, 200, ?, 3, 50, 4, 25, 2, 6, 30, 3
(1) 150   (2) 175   (3) 225   (4) 250

Q.16 48, 24, 96, 192 ?
(1) 76   (2) 90   (3) 96   (4) 98

Q.17 2, 15, 41, 80 ?
(1) 111   (2) 120   (3) 121   (4) 132

Q.18 6, 11, 21, 36, 56 ?
(1) 42   (2) 51   (3) 81   (4) 91

Q.19 563, 647, 479, 815 ?
(1) 672   (2) 386   (3) 279   (4) 143

Q.20 13, 35, 57, 56 ?
(1) 1110   (2) 1112   (3) 1113   (4) 1315

Q.21 1, 4, 10, 22, 46 ?
(1) 64   (2) 86   (3) 9   (4) 27

Q.22 66, 36, 18 ?
(1) 3   (2) 6   (3) 8   (4) 9

Q.23 In the series 3, 9, 15, ... What will be the 21st term?
(1) 117   (2) 121   (3) 123   (4) 129

Q.24 28, 33, 31, 36, ?, 39
(1) 32   (2) 34   (3) 38   (4) 40

Q.25 1, 9, 25, 49, 81, ?
(1) 100   (2) 112   (3) 121   (4) 144

Q.26 1, 9, 25, 49, ?, 121
(1) 64   (2) 81   (3) 91   (4) 10

Q.27 2,2,5, 13,28, ?
(1) 49   (2) 50   (3) 51   (4) 52

Q.28 0, 2, 8, 14, ?, 34
(1) 20   (2) 23   (3) 24   (4) 25

Q.29 1, 5, 14, 30, 55, 91, ?
(1) 130   (2) 140   (3) 150   (4) 160

Q.30 In the series 10, 17, 24, 31, 38,-\......which of the following will be a number of the series ?
(1) 48   (2) 346   (3) 574   (4) 1003

Q.31 240, ?, 120, 40, 10, 2
(1) 180   (2) 240   (3) 420   (4) 480

Q.32 2,3,8,27, 112,?
(1) 226   (2) 339   (3) 452   (4) 565

Q.33 6, 17, 39, 72,?
(1) 83   (2) 94   (3) 116   (4) 127

Q.34 20, 20, 19, 16, 17, 13, 14, 11, ?, ?
(1) 10, 10   (2) 10, 11   (3) 13, 14   (4) 13, 16

Q.35 24, 60, 120, 210, ?
(1) 300   (2) 336   (3) 420   (4) 525

Q.36 625, 5, 125, 25, 25,?, 5
(1) 5   (2) 25   (3) 125   (4) 625

Q.37 10, 100, 200, 310, ?
(1) 400   (2) 410   (3) 420   (4) 430

Q.38 11, 10, ?, 100, 1001, 1000, 10001
(1) 101   (2) 110   (3) 111   (4) None of these

Q.39 2, 7, 27, 107, 427, ?
(1) 1262   (2) 1707   (3) 4027   (4) 4207

PREVIOUS YEAR QUESTIONS-I

Direction (Q.1 to 7): Find the missing term.

Q.1 57, 54, 58, 55, 59, 56, 60, ?

(NTSE Stage-II, 2011)

(1) 64　　(2) 63　　(3) 58　　(4) 57

Q.2 27, 31, 40, 56, 81, 117, ?

(NTSE Stage-II, 2011)

(1) 156　　(2) 165　　(3) 166　　(4) 169

Q.3 55, 168, 57, 120, 60, 80, 62, 48, 65, 24, ?, ?

(NTSE Stage-II, 2011)

(1) 69, 11　　(2) 67, 8　　(3) 8, 71　　(4) 6, 72

Q.4 8, 7, 16, 5, 32, 3, 64, 1, 128, (?)

(NTSE Stage-I/ Raj./ 2012)

(1) 18　　(2) 13　　(3) –1　　(4) 3

Q.5 16, 33, 65, 131, (?), 523

(NTSE Stage-I/ Raj./ 2012)

(1) 261　　(2) 521　　(3) 613　　(4) 721

Q.6 5, 2, 17, 4, (?), 6, 47, 8, 65

(NTSE Stage-I/ Raj./ 2012)

(1) 29　　(2) 30　　(3) 31　　(4) 32

Q.7 1, 2, 4, 8, (?), 32　　(NTSE Stage-I/ Raj./ 2012)

(1) 10　　(2) 12　　(3) 14　　(4) 16

Q.8 2, 3, 10, 15, 26, (?)　　(NTSE Stage-I/ Raj./ 2012)

(1) 36　　(2) 35　　(3) 39　　(4) 48

Directions (Q.9 to 13): Find the missing numbers :

Q.9 2, 30, 6, 20, 12, 12, (?)

(NTSE Stage-I/ Raj./ 2013)

(1) 26　　(2) 22　　(3) 20　　(4) 24

Q.10 6, 20, 36, 48, 50, (?), 0

(NTSE Stage-I/ Raj./ 2013)

(1) 36　　(2) 40　　(3) 46　　(4) 56

Q.11 7, 15, 28, 59, 114, (?)

(NTSE Stage-I/ Raj./ 2013)

(1) 243　　(2) 233　　(3) 213　　(4) 223

Q.12 25, 49, 89, 145, 217, (?)

(NTSE Stage-I/ Raj./ 2013)

(1) 305　　(2) 327　　(3) 309　　(4) 303

Q.13 0, 2, 2, 3, 3, 5, 8, 4, 10, (?), 5, 17

(NTSE Stage-I/ Raj./ 2013)

(1) 6　　(2) 7　　(3) 9　　(4) 15

Q.14 Find the next number in the sequence

0, 2, 24, 252, ?

(NTSE Stage-II/ Raj./ 2013)

(1) 620　　(2) 1040　　(3) 3120　　(4) 5430

Q.15 Find the next number in the sequence

6, 24, 60, 120, ?

(NTSE Stage-II/ Raj./ 2013)

(1) 180　　(2) 210　　(3) 240　　(4) 360

Q.16 Find the missing number in the series

2, 10, 26, ?, 242

(NTSE Stage-II/ Raj./ 2013)

(1) 80　　(2) 81　　(3) 82　　(4) 84

Direction (Q.17 to 20) : In each of the questions 17 to 20 some of the numbers are missing in the given series with one term missing shown by question mark (?). This term is one of the alternatives among the four numbers given under it. Find the right alternative.

(NTSE Stage-I/ Raj./ 2014)

Q.17 5, 10, 17, 26, 37, 50, (?)

(1) 70　　(2) 66　　(3) 65　　(4) 64

Q.18 6, 25, 62, 123, (?), 341

(1) 216　　(2) 214　　(3) 215　　(4) 217

Q.19 5, 3, 10, 8, 17, 15, (?), 24

(1) 26　　(2) 27　　(3) 29　　(4) 36

Q.20 2, 6, 12, 20, 30, (?)

(1) 40　　(2) 42　　(3) 44　　(4) 46

Directions (Q.21 to 23): Find the missing numbers.

Q.21 445, 221, 109, 53, 25, 11, ?

(NTSE Stage-I/ Haryana/ 2013)

(1) 2　　(2) 4　　(3) 6　　(4) 8

Q.22 6, 15, 35, 77, 143, ?

(NTSE Stage-I/ Haryana/ 2013)

(1) 171　　(2) 181　　(3) 191　　(4) 221

Q.23 Find the missing number in the series.

1, 2, 2, 4, 16, ?, 65536

(NTSE Stage-I/ Haryana/ 2013)

(1) 276　　(2) 256　　(3) 198　　(4) 64

Directions (Q.24 to 29): In each of the following questions write which number in sequence replaces the question mark ?

(NTSE Stage-I/ Maharashtra/ 2013)

Q.24 ?, 17, 33, 51, 75

(1) 9   (2) 13   (3) 8   (4) 11

Q.25 14, 17, 24, 35, ?

(1) 49   (2) 38   (3) 50   (4) 46

Q.26 37, 57, 81, 99, ?

(1) 118   (2) 119   (3) 135   (4) 137

Q.27 25, 30, 36, 44, ?

(1) 50   (2) 43   (3) 51   (4) 47

Q.28 12, 22, 69, 272, 1365, ?

(NTSE Stage-I/ Chandigarh/ 2014)

(1) 8196   (2) 8184   (3) 8195   (4) 6830

Q.29 729, 81, 9, 1, $\dfrac{1}{9}$, ?, $\dfrac{1}{729}$

(NTSE Stage-I/ Rajasthan/ 2016)

(1) $\dfrac{1}{27}$ (2) $\dfrac{1}{81}$ (3) $\dfrac{1}{243}$ (4) $\dfrac{1}{486}$

Q.30 Identify the missing number inthe following squence

2, 17, 52, _____, 206

(NTSE Stage-II, 2015)

(1) 73   (2) 85   (3) 113   (4) 184

Q.31 Select the missing numbers in the following sequence

3, 6, 24, 30, 63, 72, ?, ?, 195, 210

(NTSE Stage-II, 2015)

(1) 117, 123   (2) 120, 132

(3) 123, 135   (4) 135, 144

Direction : Find the missing term.

Q.32 121, 144, 169, ?, 225, 256.

(NTSE Stage-I/ Rajasthan/ 2017)

(1) 196   (2) 296   (3) 220   (4) 222

Direction : Find the missing term.

Q.33 5, 10, 20, ?, 80.

(NTSE Stage-I/ Rajasthan/ 2017)

(1) 35   (2) 40   (3) 45   (4) 50

PREVIOUS YEAR QUESTIONS-II

Q.1 6, 8, 9, 12, 14, 18, 22, 26, 30

(NTSE Stage-I/Raj./2012)

(1) 12   (2) 22   (3) 26   (4) 30

Q.2 3, 7, 9, 28, 27, 84, 81, 448, 243

(NTSE Stage-I/Raj./2012)

(1) 84   (2) 81   (3) 28   (4) 7

Q.3 190, 94, 46, 22, 10, 3   **(NTSE Stage-I/Raj./2012)**

(1) 94   (2) 46   (3) 22   (4) 3

Q.4 0, 5, 15, 50, 128   **(NTSE Stage-I/Raj./2012)**

(1) 5   (2) 15   (3) 50   (4) 128

Q.5 9, 63, 5, 35, 1, 8   **(NTSE Stage-I/Raj./2012)**

(1) 63   (2) 5   (3) 35   (4) 8

Q.6 89, 78, 86, 80, 85, 82, 83

(NTSE Stage-I/Raj./2013)

(1) 83   (2) 82   (3) 86   (4) 78

Q.7 1, 1, 3, 9, 6, 36, 10, 100, 16, 225

(NTSE Stage-I/Raj./2013)

(1) 225   (2) 16   (3) 10   (4) 9

Q.8 444, 300, 200, 136, 87, 84, 80

(NTSE Stage-I/Raj./2013)

(1) 300   (2) 200   (3) 136   (4) 87

Q.9 8, 15, 31, 61, 123, 247, 491

(NTSE Stage-I/Raj./2013)

(1) 247   (2) 491   (3) 121   (4) 61

Q.10 3, 6, 24, 30, 63, 72, 122, 132

(NTSE Stage-I/Raj./2013)

(1) 132   (2) 30   (3) 122   (4) 72

Q.11 15, 34, 71, 134, 223, 350

(NTSE Stage-I/Karnataka/2014)

(1) 71   (2) 134   (3) 223   (4) 350

PREVIOUS YEAR QUESTIONS-III

Directions (Q.1 to Q.10): Find the missing letters:

Q.1 DOZ, GRC, (?), ALW, BMX

(NTSE Stage-I/Raj./ 2012)

(1) BGL (2) LWH (3) DLT (4) GJM

Q.2 fed, ihg, lkj, (?), rqp

(NTSE Stage-I/Raj./ 2012)

(1) npq (2) onm (3) oqp (4) nom

Q.3 ABYZ, ADWZ, (?), AHSZ

(NTSE Stage-I/Raj./ 2012)

(1) AFUZ (2) AUFZ (3) ZFUA (4) ZUFA

Q.4 VTRP, NLJH, FDBZ, XVTR, (?)

(NTSE Stage-I/Raj./ 2012)

(1) JLPN (2) LJPN (3) NPLJ (4) PNLJ

Q.5 OBDR, QACT, SZBV, (?), WXZZ

(NTSE Stage-I/Raj./ 2012)

(1) WUWZ (2) YTVB
(3) UYAX (4) ASVD

Q.6 YANWY, DFMBD, IKNGI, NPMLN, (?), XZMVX

(NTSE Stage-I/Raj./ 2013)

(1) RUMSR (2) SUNQS
(3) UWNSU (4) VUMTV

Q.7 PEXKW, RFWMU, TGVOS, VHUQQ, XITSO, (?)

(NTSE Stage-I/Raj./ 2013)

(1) ZJSUM (2) YJSUZ
(3) ZKSVJ (4) JZSTN

Q.8 AYBZC, DWEXF, GUHVI, JSKTL, (?), POQPR

(NTSE Stage-I/Raj./ 2013)

(1) MQDRN (2) QMONR
(3) MQNRO (4) NQMOR

Q.9 ZYYZR, ABVUN, (?), BCUTM, XWABT, CDTSL

(NTSE Stage-I/Raj./ 2013)

(1) YXZAS (2) ZYABT
(3) XWYZR (4) YXZAB

Q.10 deb, ijg, nol, (?), xyv

(NTSE Stage-I/Raj./ 2013)

(1) rsp (2) stp (3) rsq (4) stq

Direction: In each of the questions 32 to 40 some of the letters are missing in the given series with one term missing shown by question mark (?). This term is one of the alternatives among the four groups of letters given under if find the right alternative.

(NTSE Stage-I/Raj./ 2014)

Q.11 BEG, DGI, FIK, HKM, (?)
(1) JMO (2) KMO (3) JML (4) JNP

Q.12 KEM, IDL, GCK, (?), CAI
(1) ECJ (2) EBK (3) FBJ (4) EBJ

Q.13 JCME, LDOG, NEQI, (?)
(1) PFSJ (2) PESI (3) PESK (4) PFSK

Q.14 FOX, IQV, LST, OUT, ?

(NTSE Stage-I/Raj./ 2015)

(1) RPW (2) RWP (3) QVS (4) SXU

Q.15 qpo, nml, ?

(NTSE Stage-I/Raj./ 2015)

(1) ghf (2) ijk (3) kji (4) hgi

Q.16 MYZ, LWX, ?, JST

(NTSE Stage-I/Raj./ 2016)

(1) KUV (2) IQR (3) HOP (4) GMN

Q.17 bdf, hjl _____,tvx

(NTSE Stage-I/Raj./ 2015)

(1) nrp (2) pnr (3) nqr (4) npr

Q.18 LO, JQ, HS, ?

(NTSE Stage-I/Raj./ 2017)

(1) FU (2) FQ (3) EV (4) DW

Q.19 ZXV, TRP, NLJ, ?

(NTSE Stage-I/Raj./ 2017)

(1) HEF (2) HFD (3) EFH (4) IGE

PREVIOUS YEAR QUESTIONS-IV

Directions (Q.1 to Q.3): Which sequence of letters when placed at the blanks one after the other will complete the given letter series ?

Q.1 _ ab _ a _ bb _ ab _ a _

(NTSE Stage-I/Raj./2012)

(1) abaaba   (2) babbba

(3) aabbab   (4) bbaabb

Q.2 _ _ a bb _ bba _ bab _ a _

(NTSE Stage-I/Raj./2012)

(1) abaaba   (2) aabbaa

(3) bbabbb   (4) bbaabb

Q.3 _ ac _ ca _ aca _ a _ a _

(NTSE Stage-I/Raj./2012)

(1) cacaca   (2) aaaccc

(3) acacac   (4) caccccc

Directions (Q.4 to Q.8): These questions are based on letter series in which some of the letters are missing. The missing letter are given in the proper sequence in one of the alternatives among the four given under each question. Find out the correct alternatives for each question.

Q.4 ab _ acc _ _ da _ bba _

(NTSE Stage-I/Raj./2013)

(1) cdabc   (2) badaa

(3) cdbcd   (4) dbacd

Q.5 abb _ _ ab _ b _ bba _ a

(NTSE Stage-I/Raj./2013)

(1) bbbab   (2) babba

(3) abaab   (4) bbabb

Q.6 b _ a _ bab _ ab _ a

(NTSE Stage-I/Raj./2013)

(1) baba   (2) babb

(3) abab   (4) abba

Q.7 In the following letter sequence, some of the letters are missing. These are given in order as one of the alternatives below. Choose the correct alternative. **(NTSE Stage-II/2013)**

α β _ α α _ β β β _ α α α α _ β β β ......

(1) α β β α   (2) β α β α

(3) α α α β   (4) α β α β

Q.8 ca _ cab _ ab _ _ bc _

(NTSE Stage-I/Raj./2014)

(1) bccaa   (2) accab   (3) bacaa   (4) abaca

Instruction : In each of the Question Nos. 9 to 16 a number series is given with one term missing shown by question mark (?). This term is one of the four alternatives given under it. Find the correct alternative.

Q.9 5, 16, 51, 158, ? .

(1) 1452   (2) 483   (3) 481   (4) 1454

Q.10 198, 194, 185, 169, ? .

(1) 92   (2) 136   (3) 144   (4) 11

Q.11 11, 29, 55, ? , 131.

(1) 110   (2) 81   (3) 89   (4) 7

Q.12 589654237, 89654237, 8965423, 965423, ? .

(1) 58965   (2) 65423

(3) 89654   (4) 96542

Q.13 1, 1, 4, 8, 9, 27, 16, ? .

(1) 32   (2) 64   (3) 81   (4) 256

Q.14 4, 9, 25, ? , 121, 169, 289, 361.

(1) 49   (2) 64   (3) 81   (4) 87

Q.15 980, 392, 156.8, ? , 25.088, 10.0352.

(1) 65.04   (2) 60.28   (3) 62.72   (4) 63.85

Q.16 3, 10, 101, ? .

(1) 1010   (2) 10201

(3) 10202   (4) 11012

Q.17 Find the missing number in the series 2, 10, 26, 50, _____, 122.

(1) 81   (2) 82   (3) 80   (4) 84

Directions (Q.18 to Q.21): In the questions, a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

Q.18 6, 24, 60, 120, ?

(1) 180   (2) 210   (3) 240   (4) 360

Q.19 1, 9, 9, 81, 90, 810, 819, ?

(1) 7371   (2) 900

(3) 8100   (4) 1638

Q.20 2, 3, 6, 18, 108, ?

(1) 1944   (2) 1658

(3) 648   (4) 1008

Q.21 1, 2, 3, 4, 5, 7, 7, ?, ?

(1) 11, 13   (2) 10, 11

(3) 8, 9   (4) 9, 11

Directions (Q.22 to Q.26): Find the wrong number in the following series.

Q.22 24576, 6144, 1536, 386, 96, 24
(1) 96   (2) 386   (3) 1536   (4) 6144

Q.23 3, 4, 10, 32, 136, 685
(1) 685   (2) 10   (3) 136   (4) 32

Q.24 3, 8, 13 24, 42, 70
(1) 13   (2) 24   (3) 42   (4) 70

Q.25 6, 7, 9, 11, 15, 15, 28, 19, 36
(1) 15   (2) 28   (3) 19   (4) 70

Q.26 How many such 4 are there in the following number series, where 3 is immediately before and 2 is immediately after.

4 5 3 6 2 4 3 4 2 9 3 4 1
0 3 4 2 7 4 3 2 3 4 2 3 4
(1) 2   (2) 3   (3) 4   (4) 5

Directions (Q. 27 & Q.28): Choose wrong number in the given series.

Q.27 10, 26, 74, 218, 654, 1946, 5834
(1) 26   (2) 74   (3) 218   (4) 654

Q.28 325, 259, 202, 160, 127, 105, 94
(1) 94   (2) 127   (3) 105   (4) 202

Q.29 What number will come at the place of question mark ?
4, -8, 16, -32, 64, ?
(1) 128   (2) -128   (3) -64   (4) -192

Directions: In each of the following question 56 to 69, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and answer on the OMR Answer Sheet by filling the circle.

Q.30 95, 94, 92, 89, 58 80, ?
(1) 78   (2) 76   (3) 74   (4) 72

Q.31 0, 6, 24, 60, 120, 210, ?
(1) 260   (2) 275   (3) 310   (4) 336

Q.32 720, 360, 120, 30, 6, ?
(1) 0   (2) 1   (3) 2   (4) 3

Q.33 34, 18, 10, 6, 4, ?
(1) 3   (2) 2   (3) 1   (4) 0

Q.34 107, 97, 82, 63, ?
(1) 42   (3) 47   (3) 37   (4) 39

Q.35 1, 2, 5, 12, 27, 58, ?
(1) 116   (2) 121   (3) 125   (4) 127

Q.36 3, 12, 27, 48, 75, 108, ?
(1) 118   (2) 135   (3) 147   (4) 152

Q.37 840, 168, 42, 14, ?
(1) 2   (2) 3   (3) 5   (4) 7

Q.38 4, 5, 7, 11, 19, 35, ?
(1) 47   (2) 57   (3) 67   (4) 77

Q.39 11, 10, 101, 100, 1001, 1000, ?
(1) 10000   (2) 10001   (3) 11001   (4) 10011

Q.40 2, 7, 27, 107, 427, ?
(1) 1262   (2) 1707   (3) 4027   (4) 4207

Q.41 3, 8, 13, 24, 41, ?
(1) 70   (2) 75   (3) 80   (4) 85

Q.42 2, 8, 18, 32, 50, ?
(1) 60   (2) 66   **(3) 72**   (4) 82

Instruction: In each of the Question Nos. 9 to 16 a number series is given with one term missing shown by question mark (?). This term is one of the four alternatives given under it. Find the correct alternative

Q.43 2, 3, 5, 8, 13, ?, 34
(1) 23   (2) 21   (3) 20   (4) 22

Q.44 3, 8, 15, 24, 35, ?
(1) 52   (2) 50   (3) 48   (4) 46

Q.45 8, 24, 28, 140, 146, 1022, 1030, ?
(1) 1040   (2) 8240   (3) 10300   (4) 9270

Q.46 2, 9, 3, 28, 4, 65, 5, ?
(1) 137   (2) 126   (3) 118   (4) 115

Q.47 4, 17, 290, ?
(1) 84100   (2) 84101   (3) 84102   (4) 84103

Q.48 3, 3, 4.5, 9, 22.5, ?
(1) 27.3   (2) 48   (3) 55   (4) 67.5

Q.49 4, 5, 12, 39, 160, ?
(1) 225   (2) 695   (3) 805   (4) 790

Q.50 2, 3, 7, 16, 32, ?
(1) 57   (2) 39   (3) 56   (4) 55

ANSWER KEY

ANALYTICAL QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	2	3	3	1	1	1	3	1	4	1	3	3	1	2	1
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	4	3	4	3	3	3	3	2	3	2	4	3	2	2
Que.	31	32	33	34	35	36	37	38	39						
Ans.	2	4	3	1	2	3	4	1	2						

PREVIOUS YEAR QUESTIONS-I

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	4	3	2	3	1	3	4	2	3	1	2	1	4	3	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	3	2	1	2	2	4	2	2	3	3	3	2	2	3
Que.	31	32	33												
Ans.	2	1	2												

PREVIOUS YEAR QUESTIONS-II

Que.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	1	4	4	4	3	2	4	1	3	2

PREVIOUS YEAR QUESTIONS-III

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	2	2	1	4	3	2	1	3	1	4	1	4	4	2	3
Que.	16	17	18	19											
Ans.	1	4	1	2											

PREVIOUS YEAR QUESTIONS-IV

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	3	4	1	2	4	2	1	3	3	3	4	2	1	3
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	2	2	1	1	1	2	4	3	2	2	4	4	2	3
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	4	2	1	3	2	3	4	3	2	2	1	3	2	3	4
Que.	46	47	48	49	50										
Ans.	2	2	4	3	1										

Chapter-02

Coding and Decoding

A CODE is a 'system of signals'. Therefore, Coding is a method of transmitting a message between the sender and the receiver without a third person knowing it.

The Coding and Decoding Test is set up to judge the candidate's ability to decipher the rule that codes a particular word/message and break the code to decipher the message.

LETTER CODING

In these questions, the letters in a word are replaced by certain other letters according to a specific rule to form its code. The candidate is required to detect the coding pattern/rule and answer the questions accordingly.

Case I. To form the code for another word (CODING)

Case II. To find the word by analysing the given code (DECODING).

Ex.1 In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code?

(1) EJKNEGTP   (2) EGKNFITP   (3) EJKNFGTO   (4) EJKNFTGP

Sol. Clearly, each letter in the word TEACHER is moved two steps forward to obtain the corresponding letter to the code.

T	E	A	C	H	E	R
+2↓	+2↓	+2↓	+2↓	+2↓	+2↓	+2↓
V	G	C	E	J	G	T

Similarly, we have :

C	H	I	L	D	R	E	N
+2↓	+2↓	+2↓	+2↓	+2↓	+2↓	+2↓	+2↓
E	J	K	N	F	T	G	P

So, the Desired code is EJKNFTGP. Hence, the answer is (4).

Ex.2 In a certain code language, RUSTICATE is written as QTTUIDBSD. How would STATISTIC be written in that code ?

(1) RSBUJTUHB   (2) RSBUITUHB   (3) RSBUIRSJD   (4) TUBUITUMB

Sol. Clearly, the middle letter of the word remains unchanged in the code. Each of the first two and the last two letters of the word is moved one step backward, while each of the remaining letters is moved one step forward to obtain the corresponding letters of the code.

R	U	S	T	I	C	A	T	E
−1↓	−1↓	+1↓	+1↓	↓	+1↓	+1↓	−1↓	−1↓
Q	T	T	U	I	D	B	S	D

Similarly, we have :

S	T	A	T	I	S	T	I	C
−1↓	−1↓	+1↓	+1↓	+1↓	+1↓	−1↓	−1↓	
R	S	B	U	I	T	U	H	B

So, the required code is RSBUITUHB. Hence, the answer is (2).

Ex.3 IN a certain system of coding, the word STATEMENT is written as TNEMETATS. In the same system of coding, what should be the code for the word POLITICAL ?

(1) LACITILOP   (2) LCATILIOP   (3) OPILITACL   (4) None of these

Sol. Clearly, the letters of the given word are written in a reverse order to obtain the code.

Reversing the order of letters in POLITICAL, we get LACITILOP, which is the required code.

Hence, the answer is (1).

DIRECT LETTER CODING

What we have studied til now was 'rule-coding' in which letters were assigned codes according to a set pattern or rule concerning the movement or reordering of letters and one needs to detect this hidden rule to decode a message. But, sometimes, particular letters are made codes for particular letters without there being any set pattern. For example, let us consider a language in which A is coded as W, C as P, E as T, L as Z, S as B and T as K. Then, the code for CASTLE in that language is PWBKZT.

Such type of coding is called direct-coding.

In direct-coding, the code letters occur in the same sequence as the corresponding letters occur in the words.

In questions on direct-coding, either the particular codes of letters are given or the codes of two or more words are given and one is asked to find the codes of given words involving only those letters for which the codes have already been mentioned.

Ex.4 If in a certain codes, O is written as E, A as C, M as I, S as O, N as P, E as M, I as A, P as n and C as S, then how will COMPANIES be written in that code ?

(1) SMINCPAMO   (2) SEIACPAMO   (3) SEINCPAMO   (4) SEINCPMIO

(5) None of these

Sol. Substituting the letters of the given word with their respective codes, we have :

```
C   O   M   P   A   N   I   E   S
↓   ↓   ↓   ↓   ↓   ↓   ↓   ↓   ↓
S   E   I   N   C   P   A   M   O
```

Hence, the answer is (3).

Ex.5 If in a code language, PARENT is written as BDFGJK and CHILDREN is written as MOXQUFGJ, how is REPRINT written in that code?

(1) FGBFXJK   (2) FGBUXJK   (3) FGBFXGD   (4) BGBFXJK

Sol. Observing the given words and codes, we notice that :

(i) there is no apparent rule governing the coding;

(ii) both the given words have common codes corresponding to common letters i.e. PARENT and CHILDREN have 'REN' in common in the word and 'FGJ' in common in the code. This indicates that the code letters are in the same sequence as the corresponding letters in the words;

(iii) REPRINT is formed by a combination of letters of PARENT and CHILDREN.

All the above three indicates that this is a question on direct-coding.

Thus, from the given words we have :

Letter	P	A	R	E	N	T	C	H	I	L	D
Code	B	D	F	G	J	K	M	O	X	Q	U

Thus, the code for REPRINT becomes FGBFXJK. Hence, the answer is (1).

Ex.6 If the word EARTH be written as QPMZS in coded form, how can HEART be written following the same coding ?

(1) SQPZM   (2) SQMPZ   (3) SPQZM   (4) SQPMZ

Sol. Observing the above question, we may notice that HEART consists of the same letters as EARTH and the four possible codes given as alternatives also consist of the same letter codes as those in the code for EARTH. This indicates that this is a question on direct-coding.

Thus, we have :

Letter	E	A	R	T	H
Code	Q	P	M	Z	S

So, the code for HEART becomes SQPMZ.

Ex.7 In a defence message, GET AWAY, FIRE BACK-WARDS, MOVE SLOW is coded as BEN CDCI, QHOE PCTL DCOXU, ZMWE VFMD.

Based on this coding scheme, spot the codes for the following words :

1. OVER

(1) MWED   (2) MWEO   (3) MWOE   (4) MWZO

2. DEADLY

(1) XECXEI   (2) XEEXCI   (3) XECXFI   (4) XENXFI

3. REWARD
   (1) OEDCOU   (2) OEDCOX   (3) OEDNXE   (4) OTDCOX
4. GREAT
   (1) BOECN   (2) BOENC   (3) BOEHC   (4) BOEQN

Sol. Observing the given message, we find that as such, no definite rule of coding seems to follow. Also, whenever A occurs in the message, C comes at the corresponding place in the code. Similarly, E corresponds to E, D corresponds to W nd so on. Thus, every letter in the message has a particular code. This is direct-coding. Thus, from the given message, we have :

Letter	G	E	T	A	W	Y	F	I	R	B	C	K	D	S	M	O	V	L
Code	B	E	N	C	D	I	Q	H	O	P	T	L	X	U	Z	M	W	F

1. The code for OVER is MWEO. So, the answer is (2).
2. The code for DEADLY is XECXFI. So, the answer is (3).
3. The code for REWARD is OEDCOX. So, the answer is (2).
4. The code for GREAT is BOECN. So, the answer is (1).

NUMBER/SYMBOL CODING

In these questions, either numerical code values are assigned to a word or alphabetical code letters are assigned to the numbers. The candidate is required to analyse the code as per the questions.

Clearly, letters and numbers are correlated to each other in no other way except in realtion to the position of letters in the English alphabet. So, either this realtion holds or the coding has to be done as per a set of given rules. In all other cases, the questions is one of direct-coding.

Case I. When numerical/symbol codes are assigned to words.
Case II. When alphabetical codes are assigned to numbers.

Ex.8 If MACHINE is coded as 19 – 7 – 9 – 14 – 15 – 20 – 11, how will you code DANGER ?
   (1) 11 – 7 – 20 – 16 – 11 – 24   (2) 13 – 7 – 20 – 9 – 11 – 25
   (3) 10 – 7 – 20 – 13 – 11 – 24   (4) 13 – 7 – 20 – 10 – 11 – 25

Sol. Clearly, every letter is assigned a numerical code obtained by adding 6 to the numeral denoting the position of that letter in the English alphabet.
Thus, A is coded as (1 + 6) i.e. 7, B as (2 + 6) i.e. 8, C as (3 + 6) i.e. 9, ..., M as (13 + 6) i.e. 19, ..., Z as (26 + 6) i.e. 32.
Since, D, A, N, G, E, R are 4th, 1st, 14th, 7th, 5th and 18th letters in the English alphabet, so their respective codes are (4 + 6), (1 + 6), (14 + 6), (7 + 6), (5 + 6), (18 + 6) i.e. 10, 7, 20, 13, 11 24. So, the code for DANGER is 10 – 7 – 20 – 13 –11 – 24.
Hence, the answer is (3).

Ex.9 If E = 5, PEN = 35, then PAGE = ?
   (1) 27   (2) 28   (3) 29   (4) 36

Sol. Clearly, putting A = 1, B = 2, C = 3, D = 4, E = 5, ..., M = 13, ..., X = 24, Y = 25, Z = 26, we have :
PEN = P + E + N = 16 + 5 + 14 = 35
So, PAGE = P + A + G + E = 16 + 1 + 7 + 5 = 29.
Hence, the answer is (3).

Ex.10 If RED is coded as 6720, then how would GREEN be coded ?
   (1) 1677199   (2) 1677209   (3) 16717209   (4) 9207716

Sol. Clearly, the order of letters in the word is reversed and then each letter is replaced by the numeral denoting its position in the English alphabet. Next, 2 is added to each numeral and the numerals so obtained are joined together physically to get the code. Thus, we have :
RED → DER → 4/5/18 → 6/7/20 → 6720.
GREEN → NEERG → 14/5/5/18/7 → 16/7/7/20/9 → 1677209.
Hence, the answer is (2).

Ex.11 Study the following letters and their corresponding digit codes followed by certain conditions of coding and answer the questions given below them by finding out which of the digit combinations given in (a), (b), (c) and (d) is the coded form of the letter-groups given in each questions and mark your answer accordingly.

Letter	P	N	A	J	I	R	E	B	U	K
Digit Code	5	3	9	1	4	6	2	7	0	8

Conditions : (1) If both the first and the last letters in the group are vowels, both should be coded as $.

(2) If both the first and the last letters in the group are consonants, both should be coded as #.

1. RBUKAE
   (1) #70892 (2) 670892 (3) 670982 (4) 607892 (5) None

2. KUNAJB
   (1) 803917 (2) 0391 (3) #0391# (4) #0391$ (5) None

3. EBNAPI
   (1) 273954 (2) 7395 (3) #7395# (4) $7395# (5) None

Sol. 1. Clearly, the given letter-group begins with a consonant and ends with a vowel. So, each letter must be replaced by individual digit code. Thus, the desired code is 670892.
   Hence, the answer is (2).

2. Clearly, The given letter-group begins with a consonant and also ends with a consonant. So, each of the first and last letters must be coded as #while the middle four letters must be replaced by individual digit codes. Thus, the desired code is #0391#. Hence the answer is (3).

3. Clearly, the given letter-group begins with and also ends with a vowel. So, each of the first and last letters must be coded as $ while the middle four letters must be replaced by individual digit codes. Thus, the desired code is 7395.
   Hence, the answer is (2).

SUBSTITUTION

In this type of questions, some particular words are assigned certain substituted names. Then a question is asked that is to be answered in the substituted code language.

Ex.12 If 'cook' is called 'butler', 'butler' is called 'manager', 'manager' is called 'teacher', teacher' is called 'clerk' and 'clerk' is called 'principal',who will teach in a class ?
   (1) Cook (2) Butler (3) Manager (4) Teacher
   (5) Clerk

Sol. Clearly, a 'teacher' teaches in a class and as given, 'teacher' is called 'clerk'. So, a 'clerk' will teach in the class. Hence, the answer is (5).

Ex.13 If 'diamond' is called 'gold', 'gold' is called 'silver', 'silver' is called 'ruby' and 'ruby' is called 'emerald', which is the cheapest jewel ?
   (1) Diamond (2) Silver (3) Gold (4) Ruby
   (5) Emerald

Sol. We know that 'silver' is cheapest. But as given, 'silver' is called 'ruby'. So, 'ruby' is the cheapest. Hence, the answer is (4).

Ex.14 If 'eye' is called 'hand', 'hand' is called 'mouth', 'mouth' is called 'ear', 'ear' is called 'nose' and 'nose' is called 'tongue', with which of the following would a person hear ?
   (1) Eye (2) Mouth (3) Nose (4) Ear
   (5) Tongue

Sol. A person hears with his 'ear'. But as per the given information, 'ear' is called 'nose'. So, a person will hear with the 'nose'. Hence, the answer is (3).

DECIPHERING MESSAGE WORD CODES

In this type of questions, some messages are given in the coded language and the code for a particular word or message is asked. To analyse such codes, any two message bearing a common word are picked up. The common code-word will thus represent that word. Proceeding similarly by picking up all possible combinations of two, the entire message can be decoded and the codes for individual words found.

Ex.15   In a certain language, 'sun shines brightly' is written as 'ba lo sul', 'houses are brightly lit' as 'kado ula ari ba' and 'light comes from sun' as 'dopi kup lo nro'. What code-words are written for 'sun' and 'brightly' ?
   (1) ba, sul   (2) sul, lo   (3) lo, ba   (4) ba, lo

Sol.   In the first and third statements, the common word is 'sun' and the common code-word is 'lo'. So 'lo' is the code for 'sun'.
   In the first and second statements, the common word is 'brightly' and the common code-word is 'ba'. So, 'ba' is the code for 'brightly'.
   Hence, the answer is (3).

Ex.16   If in a certain language, 'oka peru' means 'fine cloth'; 'meta lilsa' means 'clear water' and 'dona lisa peru' means 'fine clear weather', which word in that language means 'weather' ?
   (1) peru   (2) oka   (3) meta   (4) dona

Sol.   In the first and third statements, the common code-word is 'peru' and the common word is 'fine'.
   So 'peru' means 'fine'.
   In the second and third statements, the common code-word is 'lisa' and the common word is 'clear'.
   So, 'lisa' means 'clear'.
   Thus, in the third statement, 'lisa' means 'clear' and 'peru' means 'fine'. So, 'dona' means 'weather'.
   Hence, the answer is (4).

DECIPHERING NUMBER AND SYMBOL CODES FOR MESSAGES

In this type of questions, a few groups of numbers/symbols, each coding a certain message, are given. Through a comparison of the given coded messages, taking two at a time, the candidate is required to find the number/symbol code for each word and then formulate the code for the given message.

Ex.17   In a certain code language, '123' means 'bright little boy', '145' means 'tall big boy' and '637' means 'beautiful little flower'. Which digit in that language means 'bright' ?
   (1) 1   (2) 2   (3) 3   (4) 4

Sol.   In this first and second statements, the common code digit is '1' and the common word is 'boy'. So, '1' means 'boy'. In the first and third statements, the common code digit is '3' and the common word is 'little'. So, '3' means 'little'. Thus, in the first statement, '2' means 'bright'.
   Hence, the answer is (2).

Ex.18   In a certain code language, 'go for morning walk' is written as '$*?#, 'good for health' is written as '£?@' and 'good to walk fast' is written as '+@↑#', then what is the code for 'health' in that code language ?
   (1) +   (2) #   (3) £   (4) ?

Sol.   In the first and second statements, the common code symbol is '?' and the common word is 'for'. So, '?' means 'for'.
   In the second and third statements, the common code symbol is '@' and the common word is 'good'.
   So, '@' means 'good'. Thus, in the second statement, '£' means 'health'.
   Hence, the answer is (3).

JUMBLED CODING

(Deciphering Individual Letter Codes By Analysis)

In this type of questions, certain sample words are given along with their codes. The candidate is required to decipher individual codes for different letters by comparing, taking two words at a time, and then answer the given questions accordingly.

Ex.19 A code language has been used to write the words in capital letters in English in Column I as Greek letters in Column II. Greek letters in Column II do not appear in the same order as letters in Column I. Decode the language and choose the correct code for the word given in each question, from amongst the alternatives provided.

Column I	Column II
CLEAR	γβωπθ
VIEW	νεγδ
TURN	ηρπσ
BUTTER	σρασπγ
OILY	δλθμ
WRITE	γπσνδ
VOWEL	νλεγθ

1. LIVER
   (1) νηλμπ (2) δγθπε (3) ρσωεν (4) αβδγη

2. TROUBLE
   (1) ναβδγηλ (2) νσωδγθε
   (3) δγηλωεν (4) σλρπαγθ

3. BROWN
   (1) ωενλω (2) ωδπρν (3) πανλη (4) πρβνε

4. CYCLE
   (1) βθγμβ (2) βμβνπ (3) πρπεω (4) πλβνπ

Sol. In BUTTER, there are two T's and the letter σ occurs twice in the code. So, σ stands for **T.**

In VIEW and BUTTER, the common letter is E and the common code letter is γ. So, γ stands for **E.**

In CLEAR and BUTTER the common code letter γ stands for E. So, the other common code letter π stands for **R.**

In TURN and BUTTER, the common code letters σ and π stands for T and R respectively. So, the other common code letter ρ stands for **U.**

In TURN, the remaining code letter η stands for **N.**

In BUTTER, the remaining code letter α stands for **B.**

In CLEAR and VOWEL, the common code letter γ stands for **E.** So, the other common code letter θ stands for **L.**

In OILY and VOWEL, the common code letter θ stands for **L.** So, the other common code letter λ stands for **O.**

In OILY and WRITE, the common code letter δ stands for **I.**

In OILY, the remaining code letter μ stands for **Y.**

In WRITE and VOWEL, the common code letter γ stands for E. So, the other common code letter ν stands for **W.**

In VOWEL, the code letters λ, ν, γ and θ stands for O, W, E and L respectively. So, the remaining code letter ε stands for **V.**

In CLEAR, β and ω are codes for **C** and **A.**

The above information can be summarised as below.

Code	σ	γ	π	ρ	η	α	θ	λ	δ	μ	ν	ε	β/ω	β/ω
Letter	T	E	R	U	N	B	L	O	I	Y	W	V	C	A

1. (2) : The code for L is θ, for I is δ, for V is ε, for E is γ and for R is π. So, the code for LIVER is θδεγπ or δγθπε.

2. (4) : The code for T is σ, for R is π, for O is λ, for U is ρ, for B is α for L is θ and for E is γ. So, the code for TROUBLE is σπλραθγ or σλρπαγθ.

3. (3) : The code for B is α, for R is π, for O is λ, for W is ν and for N is η. So, the code for BROWN is απλνη or πανλη.

4. (1) : The code C is β or ω. But, C occurs twice in CYCLE and only β occurs twice in the alternatives provided. So, the code for C is β, for Y is μ, for L is θ and for E is γ. So, the code for CYCLE is βμβθγ or βθγμβ.

ANALYTICAL QUESTIONS

Q.1 If in a certain code, LUTE is written as MUTE and FATE is written as GATE, then how will BLUE be written in that code ?
(1) CLUE   (2) GLUE
(3) FLUE   (4) SLUE

Q.2 If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that language ?
(1) CPNCBX   (2) CPNCBZ
(3) CPOCBZ   (4) CQOCBZ
(5) None of these

Q.3 If FISH is written as EHRG in a certain code, how would JUNGLE be written in that code ?
(1) ITMFKD   (2) ITNFKD
(3) KVOHMF   (4) TIMFKD

Q.4 In a certain code, TWINKLE is written as SVHOJKD, then how would FILTERS be written in the same code ?
(1) EHKSDQR   (2) EHKUDQR
(3) EGKUDQR   (4) GJMSFST
(5) None of these

Q.5 In a certain code, ROAD is written as URDG. How is SWAN written in that code ?
(1) VXDQ   (2) VZDQ
(3) VZCP   (4) UXDQ

Q.6 In a code language, STARK is written as LBFMG and MOBILE is written as TNRSPJ. How is BLAME written in that code ?
(1) TSFRJ   (2) RPFTJ
(3) NJFTP   (4) TSFGJ

Q.7 If CONCEPT is written as unmulqr and FRIEND is written as ysglmt, then how is PREDICT written in that code ?
(1) usygmnl   (2) slmgtur
(3) qsltgur   (4) qgmnltr

Q.8 If in a code language, ORGANISATION is written as CBDWLQJWYQCL and OPERATION is written as CXFBWYQCL, then how is SEPARATION coded ?
(1) EJXEBEYQCL   (2) JFQYWBCXQL
(3) JFXWBWYQCL   (4) QCLYWBFXJE

Q.9 If the word PORTER can be coded as MBNZQN, how can REPORT be written ?
(1) NQMNBZ   (2) NQMBNZ
(3) NBQMNZ   (4) NQBMNZ

Q.10 In a certain code, STOVE is written as FNBLK, then how will VOTES be written in the same code?
(1) FLKBN   (2) LBNKF
(3) LKNBF   (4) LNBKF

Q.11 If REQUEST is written as S2R52TU, then how will ACID be written ?
(1) 1394   (2) IC94
(3) BDJE   (4) B3J4
(5) None of these

Q.12 If each of the letters in the English alphabet is assigned odd numerical value beginning A = 1, B = 3 and so on, what will be the total value of the letters of the word INDIAN ?
(1) 86   (2) 88   (3) 89   (4) 96
(5) None of these

Q.13 In a certain code, the word DEAL is coded as 4 – 5 – 1 – 12. Following the same rule of coding, what should be the code for the word LADY ?
(1) 12 – 4 – 1 – 25   (2) 12 – 1 – 4 – 25
(3) 10 – 1 – 4 – 23   (4) 12 – 1 – 4 – 22

Q.14 If A = 2, M = 26, Z = 52, then BET = ?
(1) 44   (2) 54   (3) 64   (4) 72

Q.15 If A = 26, SUN = 27, then CAT = ?
(1) 24   (2) 27   (3) 57   (4) 58

Directions: (Q.16 to Q.20): In each of the following questions, a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in the two given matrices. The columns and rows of Matrix I are numbered from 0 to 4 and those of Matrix II from 5 to 9. A letter from these matrices can be represented first by its row and then the column number e.g., in the matrices for questions, M can be represented by 14, 21, etc.; O can be represented by 20, 32, etc. Similarly you have to identify the correct set for the word given in each question.

Matrix I

	0	1	2	3	4
0	F	O	M	S	R
1	S	R	F	O	M
2	O	M	S	R	F
3	R	F	O	M	S
4	M	S	R	F	O

Matrix II

	5	6	7	8	9
5	A	T	D	I	P
6	I	P	A	T	D
7	T	D	I	P	A
8	P	A	T	D	I
9	D	I	P	A	T

Q.16 MOST

(1) 40, 44, 22, 89   (2) 33, 20, 11, 79

(3) 21, 00, 03, 88   (4) 02, 13, 34, 56

Q.17 ROAD

(1) 42, 32, 79, 58   (2) 23, 32, 98, 99

(3) 11, 13, 67, 69   (4) 04, 20, 55, 78

Q.18 STOP

(1) 10, 56, 44, 97   (2) 41, 68, 01, 77

(3) 22, 75, 32, 86   (4) 33, 99, 42, 59

Q.19 FOAM

(1) 24, 01, 55, 22   (2) 00, 01, 67, 33

(3) 12, 13, 67, 23   (4) 43, 52, 56, 33

Matrix I

	0	1	2	3	4
0	A	E	S	T	H
1	T	H	A	E	S
2	E	S	T	H	A
3	H	A	E	S	T
4	S	T	H	A	E

Matrix II

	5	6	7	8	9
5	P	O	R	K	L
6	K	L	P	O	R
7	O	R	K	L	P
8	L	P	O	R	K
9	R	K	L	P	O

Q.20 EAST

(1) 44, 32, 21, 03   (2) 32, 31, 02, 04

(3) 20, 43, 33, 11   (4) 13, 12, 14, 10

Q.21 If 'white' is called 'blue', 'blue' is called 'red', 'red' is called 'yellow', 'yellow' is called 'green', 'green' is called 'black', 'black' is called 'violet' and 'violet' is called 'orange', what would be the colour of human blood ?

(1) Red   (2) Green

(3) Yellow   (4) Violet

(5) Orange

Q.22 If 'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are 'oranges' and 'chillies' are 'bananas', then which of the following are green in colour ?

(1) Apricots   (2) Apples

(3) Chillies   (4) Bananas

(5) Oranges

Q.23 If 'pen' is 'table' 'table' is 'fan', 'fan' is 'chair' and 'chair' is 'roof', on which of the following will a person sit ?

(1) Fan   (2) Chair

(3) Roof   (4) Table

(5) Pen

Q.24 If 'bat' is 'racket', 'racket' is 'football', 'football' is 'shuttle', 'shuttle' is 'ludo' and 'ludo' is 'carrom', what is cricket played with ?

(1) Racket   (2) Football

(3) Bat   (4) Shuttle

(5) Carrom

Q.25 If 'sky' is 'star', 'star' is 'cloud', 'cloud' is 'earth', 'earth' is 'tree' and 'tree' is 'book', then where do the birds fly ?

(1) Cloud   (2) Sky

(3) Star   (4) Data inadequate

(5) None of these

Q.26 In a certain code language, 'col tip mot' means 'singing is appreciable', 'mot baj min' means 'dancing is good' and 'tip nop baj' means 'singing and dancing', which of the following means 'good' in that code language ?

(1) not

(2) min

(3) baj

(4) Cannot be determined

(5) None of these

Q.27 In a certain code language, 'mink yang pe' means 'fruits are ripe', 'pe lao may mink' means 'oranges are not ripe' and 'may pe nue mink' means 'mangoes are not ripe'. Which word in that language means 'mangoes' ?

(1) may   (2) pe   (3) nue   (4) mink

Q.28 In a certain code language, 'tom kun sud' means 'dogs are barking', 'kun jo mop' means 'dogs and horses' and 'mut tom ko' means 'donkeys are mad'. Which word in that language means 'barking' ?

(1) sud   (2) kun   (3) jo   (4) tom

(5) ko

Q.29 In a code language, 'mok dan sil' means 'nice big house', 'fit kon dan' means 'house is good' and 'warm tir fit' means 'cost is high'. Which word stands for 'good' in that language ?
(1) mok   (2) dan   (3) fit   (4) kon

Q.30 If 'ski rps tri' stands for 'nice Sunday morning', 'teh sti rps' stands for 'every Tuesday morning' and 'ski ptr qlm' stands for 'nice market place', which word stands for 'Sunday' ?
(1) ski   (2) rps   (3) tri   (4) qlm

Q.31 In a certain code language, 'pen pencil' is written as '$£' eraser sharpener' is written as '@#' and 'pencil eraser' is written as '$@'. Then, what is the code for 'pen' ?
(1) #   (2) $ (3) @   (4) £
(5) None of these

Q.32 In a certain code, '786' means 'study very hard', '958' means 'hard work pays' and '645' means 'study and work'. Which of the following is the code for 'very' ?
(1) 8
(2) 6
(3) 7
(4) Cannot be determined
(5) None of these

Q.33 In a certain code language, '123' means 'hot filtered coffee'. '356' means 'very hot day' and '589' means 'day and night'. Which digit stands for 'very' ?
(1) 9   (2) 5   (3) 8   (4) 2
(5) 6

Q.34 In a certain code language, '234' means 'spark and fire', '456' means 'spark is cause' and '258' means 'fire is effect'. Which of the following numerals is used for 'cause' ?
(1) 3   (2) 4   (3) 5   (4) 6

Q.35 In a certain code language, '253' means 'books are old', '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code ?
(1) 2   (2) 4   (3) 5   (4) 6
(5) 9

Directions: (Q.36 to Q.40): According to a code language, words in capital letters in column I are written in small letters in Column II. The letters in Column II are jumbled up. Decode the language choose the correct code for the word given in each question.

Column I	Column II
(1) CURSE	(A) opkif
(2) INCUR	(B) fbpoc
(3) TALLY	(C) ughvg
(4) CADET	(D) rkufh
(5) DRIP	(E) rotc
(6) TOIL	(F) jugc
(7) VARY	(G) vwoh

Q.36 DAIRY
(1) cvohr   (2) gkvbf   (3) rctvo   (4) whtou

Q.37 TODAY
(1) rjuyh   (2) kjuvh   (3) rjuvh   (4) rjuvk

Q.38 PIECE
(1) fvuyr   (2) fktck   (3) fbocv   (4) frgkp

Q.39 CIVIL
(1) gfwcc   (2) ghcww   (3) ggwfc   (4) gwffc

Q.40 SUSTAIN
(1) hibucpi   (2) hkcrjbk
(3) hwojfvw   (4) hgpukgc

Q.41 If ROME is written as MORE, then DARE is written as :
(1) RDAE   (2) RDEA   (3) RAED   (4) RADE

Q.42 In a certain language FASHION is coded as FOIHSAN. How is PROBLEM coded in that code?
(1) PELBORM   (2) ROBLEMP
(3) PRBOELM   (4) RPBOELM

Q.43 In a certain code GARNISH is written as RGAINHS. How will GENIOUS be written in that code ?
(1) ENGOIUS   (2) NEGIOUS
(3) NGEOISU   (4) GENOISU

Q.44 In a certain code MOUSE is written as PRUQC. How is SHIFT written in that code ?
(1) VJIDR   (2) VKIDR   (3) RKIVD   (4) VIKRD

Q.45 In a certain code, 253 means 'books are old', 546 means 'man is old' and 378 means 'buy good books'. What stands for 'are' in the code ?
(1) 4   (2) 5   (3) 6   (4) 2

PREVIOUS YEAR QUESTIONS

Directions (Q.1 to Q.5): Some words are given in column I. These words are written in a code language in column II. The code equivalents of the words given in column I and column II are not necessarily in the corresponding order. Choose the correct code for the words from the given alternatives.

(NTSE Stage-II, 2011)

	Column-I	Column-II
i.	Kahu chala na	hum kuch ja
ii.	aj tak na	ek ja kam
iii.	man tak pana	saj ek ada
iv.	Hum chala man	kuch not ada
v.	Hum na jai	not kim ja

Q.1 Which word will be code for word Aj ?
(1) ada   (2) hum   (3) kuch   (4) kam

Q.2 Which word will be code for word Hum ?
(1) ja   (2) not   (3) kuch   (4) ek

Q.3 Which word will be code for word Pana ?
(1) ada   (2) ek   (3) saj   (4) not

Q.4 Which word will be code for word Kahu ?
(1) hum   (2) ada   (3) not   (4) ja

Q.5 Which word will be code for word Jai ?
(1) ek   (2) saj   (3) kim   (4) ja

Directions (Q.6 to Q.8): The capital letters in each of the following words are coded as figures on the right side. Find out the codes for letters and answer the questions **(NTSE Stage-II, 2011)**

STRONG : ○ + △ ▬ |
WET : % ⌒ +
STRING : ○ + ÷ ▲ ▬ |
DENSE : □ ⌒ ▬ ○ ⬭
BELONG : ● ⌒ × △ ⬭ |

Q.6 Which is the code for 'STOLEN' ?
(1) ○ × ⌒ × ▬ %
(2) ○ + ÷ × ⌒ ▬
(3) + ○ ▲ ÷ × ⌒
(4) ○ + △ × ⌒ ▬

Q.7 Which is the code for 'LOWER' ?
(1) × ▬ % △ ÷   (2) × △ % ⌒ ÷
(3) △ + % △ ÷   (4) × ▬ % △ ÷

Q.8 Which is the code for 'DRESSING' ?
(1) □ ÷ ⌒ ○ ○ ▲ ▬ |
(2) × ÷ ⌒ ○ ▲ | ✝
(3) ÷ □ ⬭ ○ ○ ▲ ⌒ ✝
(4) □ % ⌒ ○ ○ △ ▬ |

Directions (Q.9 to Q.10) : The cells in diagram I and sectors in diagram II contain two letters each from A to Z.

DIAGRAM I

AM	NF	CO
BU	TV	DG
EW	IZ	XY

DIAGRAM II

JC
KP   ✕   HS
RQ
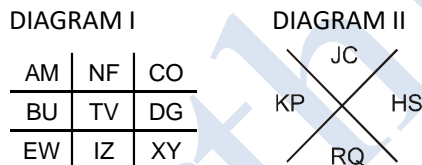
The first letters in each cell is coded by the cell shape whereas the second letter is represented by cell shape along with a dot in it. **(NTSE Stage-II, 2011)**

(A) A is represented as ⌐|
(B) M is represented as ⌐⌐
(C) K is represented as >
(D) P is represented as ⋗

Q.9 Identify the response which represents CHAIR
(1) ∟ < ∧ ⊓ ⌐| (2) ∟ < ⌐|⊓ ∧
(3) ∟ ⌐| < ⊓ ∧   (4) ∧ < ∟ ⊓ ⌐|

Q.10 Identify the response which represents MONKEY
(1) < ⌐ ⊔ < ⌐⌐ ⌐⌐   (2) < ⌐⌐ > ⌐ ⊔ ⊦
(3) ⌐⌐ ⊔ > ⌐ ⌐⌐ ⊦   (4) ⌐⌐ ⌐⌐ ⊔ > ⌐ ⌐

Directions (Q.11 to Q.19): Words in capital letters in column-I are written in small letters in a code language in column-II. Decode the Language and find out the correct alternative for the given letters in each questions. **(NTSE Stage-I/Raj./ 2012)**

Column I	Column II
HOPE	v t y g
WIDE	c e t h
LUCK	n x f l
DUST	a i e n
SIND	c m a e
SOAP	g a p v
FEAR	p u t j
MUST	n i d a
HUNT	m n y i
FILE	c x u t
PINE	c m t g

Q.11 Code for letters in the word SOLE are
(1) txza   (2) fvxy   (3) mtax   (4) vtax

Q.12 Code for letters in the word MENT are -
(1) ndti   (2) dtum   (3) mdit   (4) puit

Q.13 Code for letters in the word NEWS are -
(1) hmta   (2) tmkh   (3) fmak   (4) tahv

Q.14 Code for letters in the word STAR are -
(1) ipaj   (2) jami   (3) paiz   (4) ajkl

Q.15 Code for letters in the word TIME are -
(1) tkci   (2) citd   (3) ctpb   (4) litm

Q.16 In a coded language TRACE = 43251 and EARTH = 12347 then the code for FACT will be -
(NTSE Stage-I/ Raj./ 2012)
(1) 9245   (2) 9254   (3) 9425   (4) 9524

Q.17 In a coded language SHOP = 8256, WORK = 9573 and HOME = 2541 then the code for SMOKE will be - **(NTSE Stage-I/ Raj./ 2012)**
(1) 84531   (2) 83451   (3) 84351   (4) 85431

Q.18 In a coded language TAKE = 1790, PLOT = 5321 then code for PLATE will be -
(NTSE Stage-I/ Raj./ 2012)
(1) 53701   (2) 53071   (3) 35710   (4) 53710

Q.19 In a coded language FRUIT = HTWKV then FLOWER will be written as -
(NTSE Stage-I/ Raj./ 2012)
(1) HNQYGT   (2) HGPTYN
(3) HYNGPT   (4) HTPNGY

Directions (Q.20 to Q.30) : Words in capital letters in column - I are written in small letters in a code language in column - II. Decode the Language and find out the correct alternative for the given letters in each questions. **(NTSE Stage-I/Raj./ 2013)**

Column - I	Column - II
HERO	tbfw
JOIN	bakp
LAZY	nsvg
MINE	pdkt
PART	rwsx
SAURY	wveos
BLUE	eglt
CIGAR	usqwp
WRIT	wpxy
VIRUS	pzwoe
QUACK	jqems
PIRL	wprg

Q.20 Code for letters in the word TOIL are -
(1) pxba   (2) bpgn   (3) bpxg   (4) mpxg

Q.21 Code for letters in the word COST are -
(1) boqx   (2) xqps   (3) qost   (4) xqnr

Q.22 Code for letters in the word ULCER are -
(1) ggwmr   (2) teqwp   (3) ktegp   (4) gteqw

Q.23 Code for letters in the word SINE are -
(1) ptkl   (2) toka   (3) ptok   (4) optb

Q.24 Code for letters in the word ARCH are -
(1) frsq   (2) wfsq   (3) wqfp   (4) sqfn

Q.25 In a coded language NUMBER is written as in MFNYVI. Then FIGURE may be written in coded language as - **(NTSE Stage-I/ Raj./ 2013)**
(1) ERHFID   (2) URTVSF
(3) GJTFSF   (4) URTFIV

Q.26 In a coded language SHIFT is written as UFKDV, Then COVET may be written in coded language as - **(NTSE Stage-I/ Raj./ 2013)**
(1) EMXCV   (2) FNYDU
(3) EXCUV   (4) EQUDS

Q.27 If PET = 4   **(NTSE Stage-I/ Raj./ 2013)**
LET = 3
JEY = 2
Then what is the value of XET ?
(1) 1   (2) 5   (3) 6   (4) 8

Q.28 In a coded language if HOME = 2541, SHOP = 8256, WORK = 9573, then code for SMOKE will be - **(NTSE Stage-I/ Raj./ 2013)**
(1) 85431   (2) 84531
(3) 83451   (4) 84351

Q.29 Here are some words translated from an artificial language
'mie pie' is 'blue light'
'mie tie' is 'blue berry'
'aie tie' is 'rasp berry'
Which words could possible means "light fly" ?
(NTSE Stage-II/ 2013)
(1) pie zie   (2) pie mie
(3) aie zie   (4) aie mie

Q.30 If in a certain code, STUDENT is written as RSTEDMS, then how would TEACHER be written in the same code ? **(NTSE Stage-II/ 2013)**

(1) SZZDGEQ   (2) SZDDGEQ

(3) SDZDGDQ   (4) SDZCGDQ

Directions (Q.31 to Q.34): Words in capital letters in Column I are written in English small letters according to a code language in Column II. Decode the language and find out the correct alternative for the given word in each question. **(NTSE Stage-I/Raj./ 2014)**

Column I	Column II
ONE	cdy
TWO	sqd
THREE	lsgyy
FOUR	dztg
FIVE	zmfy
SIX	rmh

Q.31 NET

(1) dys   (2) cys   (3) tcs   (4) csd

Q.32 FOX

(1) ydh   (2) dhs   (3) zdh   (4) zgl

Q.33 HER

(1) lgc   (2) lyg   (3) lgs   (4) glc

Q.34 SHE

(1) rly   (2) rcy   (3) rsy   (4) yet

Q.35 In a code A = 26 .... Z = 1 if G = 25 and MILK = 83 then, find the code for WATER :

(NTSE Stage-I/Karnatka/ 2014)

(1) 67   (2) 68   (3) 92   (4) 93

Q.36 Using the total number of alphabets in your solution as a partner, find the number that represents G if,

A-0, B-0, C-2, D-2, E-1, F-2, G

(NTSE Stage-II/ 2015)

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

Q.37 If FEEd is coded as 47 and TREE is coded as 91, then MEET will be coded as :

(NTSE Stage-II/ 2015)

(1) 110   (2) 114   (3) 118   (4) 122

Directions (Q.38 to Q.39): Following alphabets are written in a special coded language like

B	L	A	C	K	W	H	I	T	E
0	1	2	3	4	5	6	7	8	9

(NTSE Stage-I/Raj./ 2017)

Q.38 Then code 62830 will be written as -

(1) HATCB   (2) HATEC

(3) HATBC   (4) HATCE

Q.39 'BHICK' will be coded as -

(1) 06734   (2) 6734

(3) 6743   (4) 06743

Q.40 In a coded language, BRAIN is written as *%÷#× and TIER is written as $#+% ; then in the same coded language, RENT will be written as

(1) %×#$ (2) %#×$

(3) %+×$ (4) +×%$

Q.41 In a coded language, TILE is written as 7235 and DEAL is written as 9543; then in the same coded language, DIET will be written as

(1) 9257   (2) 9527   (3) 9725   (4) 9275

Q.42 In a coded language, ZEBRA is written as 2652181; then in the same coded language, COBRA will be written as

(1) 3152181   (2) 1182153

(3) 31822151   (4) 302181

Q.43 In a coded language, E is written as 5 and HOTEL is written as 12; then in the same coded language, LAMB will be written as

(1) 28   (2) 26   (3) 7   (4) 10

Q.44 If 1 + 4 = 9, 2 + 8 = 18 and 3 + 6 = 15, then 7 + 8 =

(1) 32   (2) 41   (3) 23   (4) 30

Directions (Q.45 to Q.49): Each letter of alphabet from A to Z has been give a value from 1 to 26 serially. Solve the questions on the basis of value of words.

Q.45 BUSH = 50 CAMP = 33 then LIKE = ?

(1) 40   (2) 41   (3) 32   (4) 37

Q.46 Which word has the maximum value?

(1) BURN   (2) CURT

(3) DUCK   (4) BUOY

Q.47 Which words have the equivalent values?
(1) KING : CAST   (2) BURY : SURE
(3) RICH : BOAT   (4) BLUE : CANT

Q.48 Which equation is correct?
(1) X + Y = 50   (2) Z – T = 6
(3) B ×V = 41   (4) R ÷ I = 5

Q.49 Which word is equivalent to 106?
(1) MONKEY   (2) DOG JACKY
(3) HAI HAPPY   (4) SO LUCKY

Q.50 Here are some words translated from an artificial language –
mie pie is blue light
mie tie is blue berry
aie tie is rasp berry
which words could possibly mean 'light fly'
(1) pie zie   (2) pie mie
(3) aie zie   (4) aie mie

Q.51 If in a certain code, STUDENT is written as RSTEDMS, then how would TEACHER be written in the same code?
(1) SZZDGEQ   (2) SZDDGEQ
(3) SDZDGDQ   (4) SDZCGDQ

Q.52 If CHAIR is coded as FKDLU then RAID is coded as:
(1) ULGD   (2) ULKG
(3) ULDG   (4) UDLG

Q.53 In a certain code HNDT has been coded as 3694. How will you code THD in the same code?
(1) 604   (2) 428   (3) 439   (4) 349

Q.54 If the word PENCIL is coded as LICNEP then how would the word INKOPT be coded?
(1) TOPINK   (2) JOLQPU
(3) HMKOPS   (4) TOPKNI

Q.55 If coding for 'EXAMINATIONS' is 123456375869 then coding for 'NOMINATION':
(1) 6854637586   (2) 6845637586
(3) 8645637586   (4) 6845635786

Q.56 In a certain code language GARNISH is written as RGAINHS. What will GENIOUS be written in that code language?
(1) NEGOISU   (2) NGEOISU
(3) NGESUOI   (4) NEGSUOI

Q.57 In a certain code language INKER is written as GLLGT and GLIDE is written as EJJFG. What will JINKS be written in that code language ?
(l) GFOMU   (2) HGMMU
(3) HGOGH   (4) HGOMU

Q.58 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

Q.59 If 283 is written as 328, 347 as 734 and so on, then which of the following two numbers will have least difference between them?
(1) 827 and 347   (2) 347 and 518
(3) 748 and 518   (4) 518 and 829

Q.60 If 43 = 158, 35 = 824, 42 = 153, then 32 = ?
(1) 84   (2) 83   (3) 85   (4) 94

Q.61 In a coded language, ONLINE is written as LNOENI and SILENT is written as LISTNE; then in the same coded language, LISTEN will be written as.
(1) ILSNET   (2) SILENT
(3) SILNET   (4) SILETN

Q.62 In a coded language, AVOID is written as 73564 and CHINA is written as 28617; then in the same coded language, COVID will be written as.
(1) 53246   (2) 25364
(3) 25346   (4) 25634

Direction (Q.63 to Q.65): Read the following information's carefully and answer question number 25 to 27 based upon it.
In a coded language, 461 means WHERE ARE YOU; 169 means 'YOU ARE GOOD' and 8652 means 'EXAMS ARE NOT BAD'.

Q.63 What is the code for 'NOT'?
(1) 6   (2) 9   (3) 5   (4) 1

Q.64 What is the code for 'GOOD'?
(1) 9   (2) 4   (3) 6   (4) 1

Q.65 How will 'WHERE ARE GOOD EXAMS' will be written in coded language?
(1) 1654   (2) 4619   (3) 1945   (4) 4698

Directions (Q.66 to Q.68): Each based upon the following five, three-digit numbers.

386, 752, 961, 573, 839

Q.66 If unit place and hundreds place digit of every number is interchanged then what will be the sum of unit place digit and Tens place digit of greatest number?

(1) 7   (2) 11   (3) 12   (4) 14

Q.67 If unit place digit and Tens place digit of every number is interchanged then what will be the second greatest number.

(1) 893   (2) 863   (3) 961   (4) 725

Q.68 If the digits of every numbers are rearranged in such a way that it form smallest possible number by the digits then what will be the biggest number out of them?

(1) 368   (2) 527   (3) 691   (4) 389

ANSWER KEY

ANALYTICAL QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	3	1	2	2	2	3	3	2	2	5	4	2	2	3
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	4	3	1	2	4	3	4	3	1	3	2	3	1	4	3
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	4	3	5	4	2	1	3	2	1	1	4	1	3	2	4

PREVIOUS YEAR QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	4	2	3	1	3	4	2	1	2	4	4	3	1	1	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	2	1	4	1	3	1	4	3	2	4	1	3	2	1	3
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	2	3	2	1	4	4	3	1	1	3	1	1	3	3	4
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	4	3	2	4	1	3	4	3	4	2	2	4	3	3	2
Que.	61	62	63	64	65	66	67	68							
Ans.	3	2	3	1	4	2	1	4							

Chapter-03

Missing Character

MISSING CHARACTER

In such type of questions, a figure, a set of figures, an arrangement or a matrix is given, each of which bears certain characteristics, be it numbers, letters or a group/combination of letters/ numbers, following a certain pattern.

The candidate has to find a missing character in the figure out of the given options.

Let us develop the ability to identify missing character with the help of following examples.

Ex.1

11	3	49
5	19	?
7	13	100

   (1) 96   (2) 120   (3) 144   (4) 100

Sol.   (3) In a row the third term is the square of the average of the first two numbers.

$$\therefore ? = \left(\frac{5+19}{2}\right)^2 = 12^2 = 144.$$

Ex.2

1	4	9	?
1	2	3	4
2	4	6	?

   (1) 16, 8   (2) 49, 7   (3) 36, 4   (4) 25, 5

Sol.   (1) Ist row : $1^2, 2^2, 3^2, 4^2$

Third row : 2, 4, 6, 8

$\therefore$ The missing numbers = 16, 8.

Ex.3

3C	24D	8E
7I	21 K	3M
4D	?	7J

   (1) 11E   (2) 28G   (3) 35I   (4) 48F

Sol.   (2) In the first row, letters are consecutive CDE. In the 2nd row, letters are one step forward I-K-M In the third row, the letters are +2 forward i.e.

D--G--J.

Number is the product of the two numbers.

Hence, 4 ×7 = 28.

Ex.4
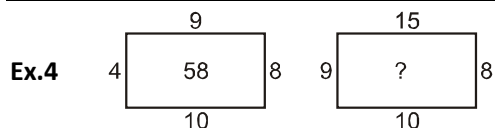
(1) 117 (2) 100 (3) 78 (4) 63

Sol. (3) In the first figure 9 × 10 − 4 × 8 = 58

∴ The missing figure = 15 × 10 − 9 × 8 = 78.

Ex.5
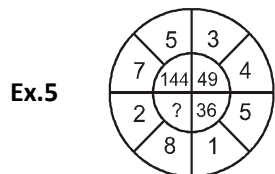
(1) 82 (2) 100 (3) 68 (4) 64

Sol. (2) Required number = $(2 + 8)^2$ = 100

Ex.6
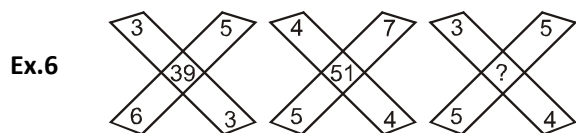
(1) 47 (2) 45 (3) 37 (4) 35

Sol. (3) Fig 1 : 3 × 3 + 6 × 5 = 39

Fig 2 : 4 × 4 + 5 × 7 = 51

∴ So ? = 3 × 4 + 5 × 5 = 37

Ex.7

3	5	7	9	11	13
8	26	48	82	?	170

(1) 121 (2) 120 (3) 119 (4) 111

Sol. (2) The numbers are according to the rule $n^2 \pm 1$.

i.e., $3^2 − 1$, $5^2 + 1$, $7^2 − 1$, $9^2 + 1$. $11^2 − 1$ and $13^2 + 1$.

∴ The missing number is 120.

Ex.8 Find the missing number

(1) 52 (2) 36 (3) 117 (4) 81

Sol. (2) The rule is : In the figure : 5 × 4 = 20, 5 + 4 = 9

In the second figure : 3 × 8 = 24 and 3 + 8 = 11

∴ In the third figure 9 × 4 = 36.

Ex.9 Insert the missing letter

B	G	N
D	J	R
G	N	?

(1) U (2) V (3) W (4) X

Sol. (3) In Ist column, the rule is +1, +2; in column two, the rule is +2, +3 and so in column three, the rule is +3, +4.

So the letter is 4 letter from R i.e., W.

Ex.10 Find the missing term in the second figure out of the given option given below the figure.

	6			9			4	
5	93	3	7	?	6	18	50	8
	15			5			1	
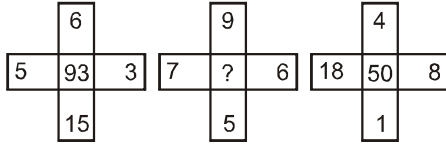
(1) 15   (2) 19   (3) 27   (4) 89

Sol. (4) In first figure central number = 5 × 15 + 6 × 3

In the second figure central number

= 7 × 5 + 9 × 6 = 89.

Ex.11

1	2	3
11	7	5
120	45	?

(1) 19   (2) 17   (3) 16   (4) 15

Sol. (3) In each column, the third number is the difference of the squares of the other two numbers.

∴ ? = $5^2 – 3^2$ = 25 – 9 = 16.

Ex.12
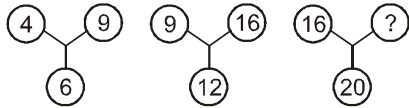
(1) 60   (2) 50   (3) 25   (4) 40

Sol. (3) First figure $\Rightarrow \sqrt{4 \times 9} = 6$;

second figure $\Rightarrow \sqrt{9 \times 16} = 12$

∴ $\sqrt{16 \times ?} = 20$ i.e., 16 × ? = 400 or ? = 25

Ex.13
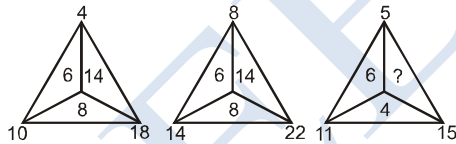
(1) 6   (2) 8   (3) 10   (4) 14

Sol. (3) Fig 1 : 10 – 4 = 6; 18 – 10 = 8 : 18 – 4 = 14

Fig 2 : 14 – 8 = 6 : 22 – 14 = 8 : 22 – 8 = 14

Fig 3 : 11 – 5 = 6 : 15 – 11 = 4 : 15 – 5 = 10

Ex.14
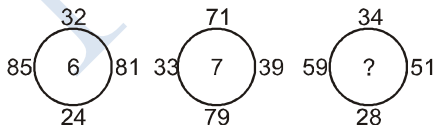
(1) 5   (2) 6   (3) 7   (4) 8

Sol. (2) Take the difference of opposite numbers and then take its average, i.e.

$$\frac{(85-81)+(32-24)}{2} = 6 \text{etc.}$$

Ex.15
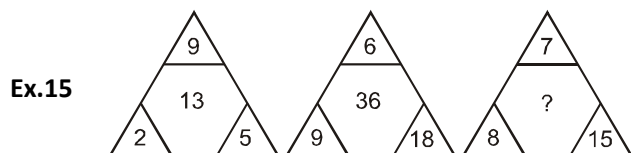
(1) 48   (2) 41   (3) 45   (4) 42

Sol. (2) The rule is : in the figure $9 \times 2 - 5 = 13$

In the second figure $6 \times 9 - 18 = 36$

$\therefore$ In the third figure $7 \times 8 - 15 = 41$.

Ex.16
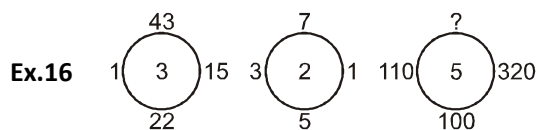
(1) 95   (2) 105   (3) 125   (4) 130

Sol. (1) Fourth root of the numbers at the periphery added

together, i.e., $1 + 43 + 15 + 22 = 81$, $\sqrt[4]{81} = 3$, etc.

Ex.17

1	$\frac{1}{2}$	$\frac{1}{3}$
2	1	?
3	$\frac{3}{2}$	1

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

Sol. (3) Numbers in the 1st and 3rd rows are

$\frac{1}{1}, \frac{1}{2}, \frac{1}{3}, \frac{3}{1}, \frac{3}{2}, \frac{3}{3}$ Numbers in the second row should be $\frac{2}{1}, \frac{2}{2}, \frac{2}{3}$

Ex.18

8	9	3	69
7	5	6	29
4	7	9	19
9	8	4	?

(1) 66   (2) 67   (3) 68   (4) 69

Sol. (3) $(8 \times 9) - 3 = 69$; $(7 \times 5) - 6 = 29$

$(4 \times 7) - 9 = 19$; $(9 \times 8) - 4 = 68$

Ex.19 What number should replace the question mark?

1st	2nd	3rd	4th
26	27	29	25
28	29	31	36
30	31	37	49
32	33	?	64
34	35	43	81

(1) 41   (2) 35   (3) 46   (4) 47

Sol. (4) The first column has even numbers starting at 26.

The second column has odd numbers starting at 27.

The third column has prime numbers starting at 29.

The fourth column has square numbers starting at 25.

Ex.20 What number should replace the question mark?
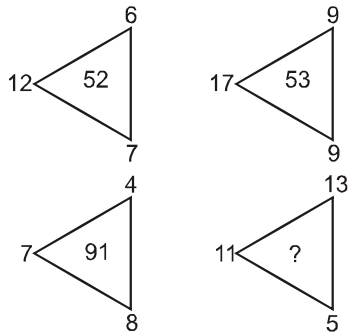
(1) 89   (2) 90   (3) 91   (4) 92

Sol. (4) 12 + 6 + 7 = 25. Reverse = 52

17 + 9 + 9 = 35. Reverse = 53

7 + 4 + 8 = 19. Reverse = 91

11 + 13 + 5 = 29. Reverse = 92

Ex.21 What number should replace the question mark?
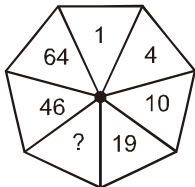
(1) 30   (2) 31   (3) 32   (4) 33

Sol. (2) Start at 1 and work clockwise to each segment, adding 3, 6, 9, 12, 15, 18.

Ex.22 What number should replace the question mark?

(1) 7   (2) 8   (3) 9   (4) 10

Sol. (3) Looking across, rows having two numbers total 14, rows having three numbers total 18, and rows having four numbers total 22.

Ex.23 What number should replace the question mark?
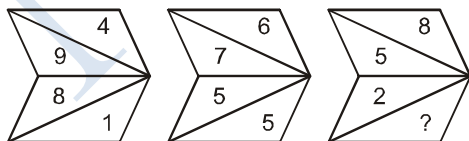
(1) 10   (2) 9   (3) 8   (4) 7

Sol. (2) Look across to some sections in each of the three figures : 4,

6, 8 (increase by 2); 9, 7, 5 (reduce by 2);

8, 5, 2 (reduce by 3); 1, 5, 9 (increase by 4).

Ex.24 What number should replace the question mark?
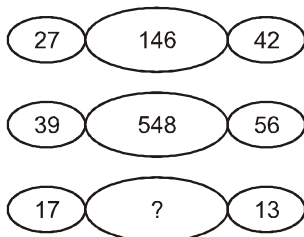
(1) 220   (2) 222   (3) 212   (4) 189

Sol. (3) 7 × 3 = 21, 1 + 1 = 2

Ex.25 What number should replace the question mark?
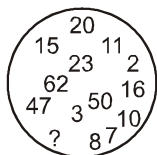
(1) 32   (2) 35   (3) 39   (4) 25

Sol. (1) Multiply by 3 and add 2 to obtain the pairings, so, 10 × 3 = 30, 30 + 2 = 32
The other such pairs are :
3/11, 7/23, 20/62, 2/8, 16/50 and 15/47.

Ex.26 What number should replace the question mark?

17	26	21	30
38	29	34	25
33	42	37	?
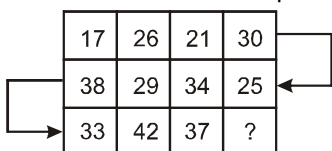
(1) 43   (2) 44   (3) 45   (4) 46

Sol. (4) Beginning at 17, go across the row and then follow the direction of the arrows alliterating between +9 and –5.

Ex.27 What number should replace the question mark?
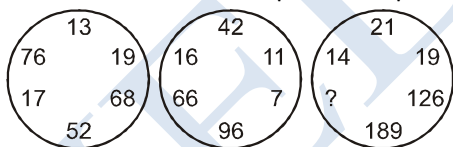
(1) 171   (2) 175   (3) 187   (4) 252

Sol. (1) Ist circle
17 × 4 = 68; 13 × 4 = 52; 19 × 4 = 76
IInd circle
7 × 6 = 42; 11 × 6 = 66; 16 × 6 = 96
IIIrd circle
21 × 9 = 189; 14 × 9 = 126; 19 × 9 = 171.

Ex.28 What number should replace the question mark?

(1) 120   (2) 128   (3) 130   (4) 134

Sol. (3) +18, +20, +22, +24

Ex.29   What number should replace the question mark?
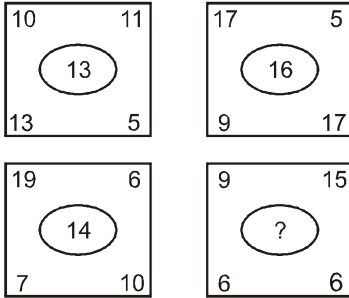
(1) 14   (2) 12   (3) 18   (4) 25

Sol.   (2) 10 + 11 + 13 + 5 = 39; 39 ÷ 3 = 13

17 + 5 + 9 + 17 = 48; 48 ÷ 3 = 16

19 + 6 + 7 + 10 = 42; 42 ÷ 3 = 14

9 + 15 + 6 + 6 = 36; 36 ÷ 3 = 12

Ex.30   What number should replace the question mark?
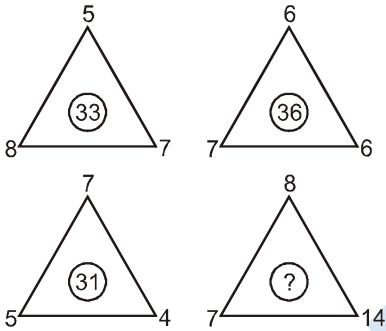
(1) 40   (2) 41   (3) 42   (4) 43

Sol.   (3) (5 × 8) – 7 = 33

(6 × 7) – 6 = 36

(7 × 5) – 4 = 31

(8 × 7) – 14 = 32

Ex.31   Find the weight which should be placed at the question mark for the scales to balance.

(1) 5   (2) 7   (3) 2   (4) 3

Sol.   (4) 5 × 9 = 45   6 × 6 = 36

3 × 5 = 15   3 × 8 =   24

45 + 15 = 60   36 + 24 = 60

ANALYTICAL QUESTIONS

Q.1

```
      9              41              24
72 ( 13 ) 28    48 ( ? ) 32    9 ( 9 ) 36
     60             23              12
```

(1) 12　　(2) 15　　(3) 17　　(4) 18

Q.2

0	−1	−2
1	0	−1
2	?	0

(1) 1　　(2) −1　　(3) −2　　(4) 4

Q.3

```
7    4   9    2
3  14   18    6
12 16   ?     5
2    4   9    4
```

(1) 45　　(2) 30　　(3) 52　　(4) 18

Q.4

```
  7   8      9   3      8   5
   36          17          ?
  5   4      5   2      6   3
```

(1) 18　　(2) 22　　(3) 36　　(4) 19

Q.5 What number should replace the question mark?
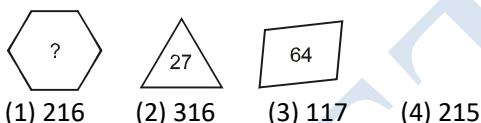
```
  ?          27         64
```

(1) 216　　(2) 316　　(3) 117　　(4) 215

Q.6 What number should replace the question mark?
4322 : 48
4172 : 56
7615 : ?
(1) 336　　(2) 210　　(3) 49　　(4) 52

Q.7 What number should replace the question mark?

```
 7      2    9      4
   10         ?
 9      4    3      6
```

(1) 2　　(2) 9　　(3) 12　　(4) 19

Q.8 What number should replace the question mark?

```
      1
  15      31
 127       3
      7   ?
```

(1) 64　　(2) 63　　(3) 72　　(4) 78
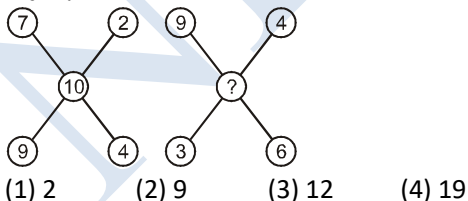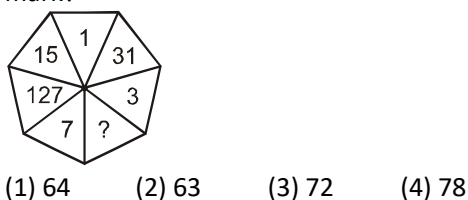
Q.9 Which number should replace the question mark?

```
        17
     2      4
  19          18
 12            11
  ?            16
  10          20
     18  6  23  3
```

(1) 9　　(2) 10　　(3) 12　　(4) 16
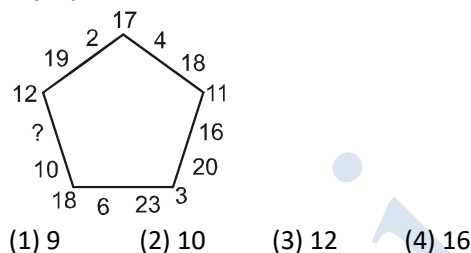
Directions: (Q.10 to Q.15): Find the missing number in the following sets of number around the circle from the choice given below:

Q.10

```
      26            5             37
35 ( ? ) 30   15 ( 2 ) 17   12 ( 6 ) 18
     24            3             35
```

(1) 4　　(2) 5　　(3) 6　　(4) 7

Q.11

```
     14            ?             26
9 ( 5 ) 19   13 ( 7 ) 27   17 ( 9 ) 35
    4             6             8
```

(1) 18　　(2) 20　　(3) 22　　(4) 24

Q.12

```
  P        G
F   22   21   N
    27   15
K             E
  ?        J
```

(1) M　　　　　　(2) P
(3) 32　　　　　　(4) None of these

Q.13

```
     3             2             2
7 ( 84 ) 8   5 ( 121 ) 11   5 ( ? ) 6
    5            11             7
```

(1) 25　　(2) 36　　(3) 48　　(4) 42

Q.14

```
   ?      12       8
        19
 18    5      11
        16
        4
```

(1) 6　　(2) 8　　(3) 10　　(4) 12

Q.15

```
56 ╳ 22    46 ╳ 10    34 ╳ 10
   41         39         ?
15 ╳ 8     9 ╳ 6     11 ╳ 6
```
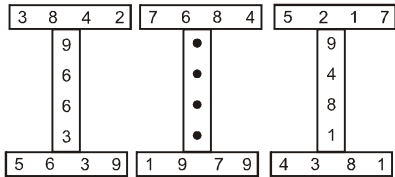
(1) 12　　(2) 25　　(3) 48　　(4) 52

Q.16 What number should replace the question mark?
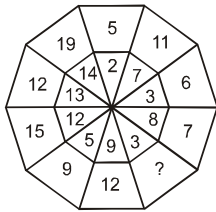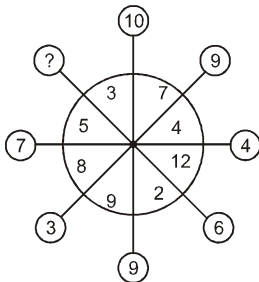

(1) 25　　(2) 22　　(3) 27　　(4) 28

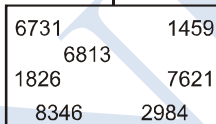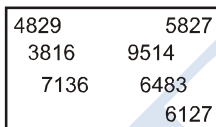**Q.17** What four digits should appear in the middle section

(1) 9598　(2) 5432　(3) 145　(4) 1721
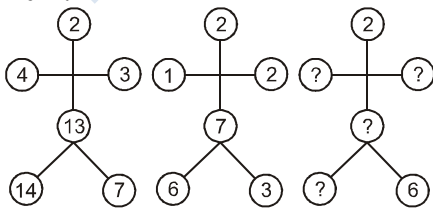
Q.18 What number should replace the question mark?

(1) 19　　(2) 16　　(3) 12　　(4) 20

Q.19 Which two numbers, one in the top rectangle and one in the bottom rectangle, are the odd ones out?
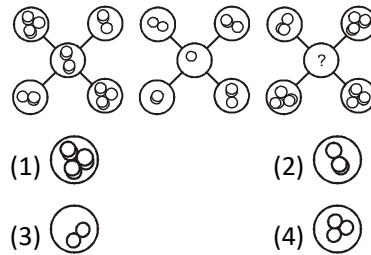
```
4829        5827
3816    9514
   7136    6483
              6127
```

```
6731          1459
    6813
1826          7621
   8346    2984
```

(1) 5827 and 1826　　(2) 6483 and 8346
(3) 3816 and 6813　　(4) 6127 and 7621

Q.20 What numbers should replace the question mark?

(1) 4, 2 and 12　　　(2) 5, 11 and 17
(3) 10, 9 and 4　　　(4) 5, 3 and 2

Q.21

(1) 　　　(2)

(3) 　　　(4)

Q.22
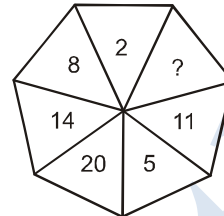
(1) 18　　(2) 17　　(3) 19　　(4) 12

Q.23
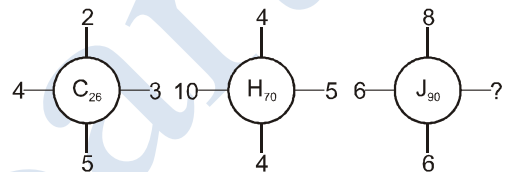
(1) 1　　(2) 2　　(3) 4　　(4) 10

Drections: (Q.24 to Q.26): In each of the following questions a matrix of certain characters in given. These charactor follows a certain trend, row - wise or column - wise. Find out this trend and choose the missing character from the given alternatives.

Q.24

5	9	8	7
8	6	9	10
7	13	?	19
5	7	8	9

(1) 9　　(2) 10　　(3) 12　　(4) 15

Q.25

23	529	1024
21	441	144
19	361	?

(1) 1441　(2) 3529　(3) 8281　(4) 9361

Q.26

72	24	6
96	16	12
108	?	18

(1) 12 (2) 16 (3) 18 (4) 20

Directions: (Q.27): In each of the questions, there is some relationship according to some rule between the letters and numerals given in each row. Find the rule in each case and then choose the correct alternative from among the four alternatives given under it satisfying the same rule to fill in the vacant places in the third row.

Q.27

FJ	25	16	NS
LZ	25	196	SX
NQ	?	?	WY

(1) 4, 9 (2) 9, 4 (3) 4, 10 (4) 9, 5

Directions: (Q.28): In the following questions, numbers have been arranged according to the same general pattern. Find the missing number in each.

Q.28 Find the value of X in the following figure :
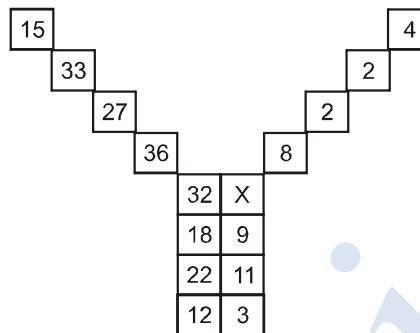
(1) 3 (2) 4 (3) 8 (4) 12

Direction (Q.29 to Q.30): Find the missing character in each of the following question.

Q. 29
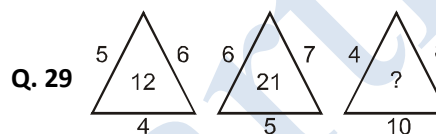
(1) 14 (2) 22 (3) 32 (4) 320

Q. 30

3C	27D	9E
7I	21K	3M
4D	?	7J

(1) 11E (2) 28G (3) 35L (4) 48F

PREVIOUS YEAR QUESTIONS

Directions (Q.1 to Q. 31): Find the missing number (s):

Q.1

	12				8				7	
5	51	9		7	44	4		9	37	6
	8				9				?	

(NTSE Stage-II, 20011)

(1) 3   (2) 4   (3) 5   (4) 13

Q.2

2	4	9
6	4	25
8	4	?

(NTSE Stage-II, 20011)

(1) 41   (2) 36   (3) 32   (4) 12

Q.3

```
   3            5            50
4 (40) 5     2 (60) 2     4 (?) 3
   2            9            4
```

(NTSE Stage-II, 2011)

(1) 80   (2) 88   (3) 800   (4) 808

Q.4

```
   56           27           27
9 (1) 81     3 (?) 36     9 (1) 36
   7            9            9
```

(NTSE Stage-I / Raj./ 2012)

(1) 9   (2) 10   (3) 11   (4) 12

Q.5

```
   3            6            2
4 (12) 5     5 (18) 2     5 (?) 2
   2            3            8
```

(NTSE Stage-I / Raj./ 2012)

(1) 12   (2) 14   (3) 16   (4) 20

Q.6

```
   5            3            5
2 (196) 3    1 (144) 6    2 (?) 1
   4            2            6
```

(NTSE Stage-I / Raj./ 2012)

(1) 270   (2) 196   (3) 256   (4) 320

Q.7

```
   3            7            9
3 (3) 2      5 (5) 7      8 (?) 9
   1            6            10
```

(NTSE Stage-I / Raj./ 2012)

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

Q.8

4	9	20
8	5	14
10	3	?

(NTSE Stage-I / Raj./ 2012)

(1) 8   (2) 11   (3) 14   (4) 16

Q.9

?	1	1
9	4	4
2	3	5

(NTSE Stage-I / Raj./ 2012)

(1) 8   (2) 10   (3) 14   (4) 16

Q.10

8	10	9
?	15	28
7	12	13

(NTSE Stage-I / Raj./ 2012)

(1) 9   (2) 10   (3) 11   (4) 12

Q.11

36	43	49
55	?	9
17	30	169

(NTSE Stage-I / Raj./ 2012)

(1) 49   (2) 58   (3) 76   (4) 77

Q.12

5	8	7
11	17	15
21	33	?

(NTSE Stage-I / Raj./ 2012)

(1) 29   (2) 31   (3) 33   (4) 38

Q.13

```
   5            3            18
7 (63) 9     11 (40) 6    7 (?) 11
   3            2            4
```

(NTSE Stage-I / Raj./ 2013)

(1) 144   (2) 136   (3) 135   (4) 124

Q.14

```
    8            12            9
12 (64) 6    5 (75) 10    21 (?) 12
    9            8            14
```
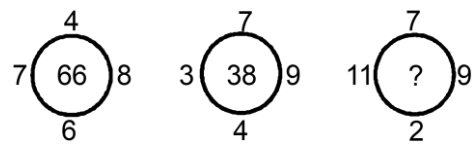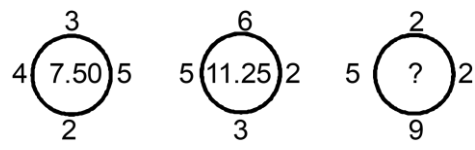
(NTSE Stage-I / Raj./ 2013)

(1) 102   (2) 152   (3) 162   (4) 172

Q.15

4
7(66)8
6

7
3(38)9
4

7
11(?)9
2

(NTSE Stage-I / Raj./ 2013)

(1) 91 (2) 108 (3) 116 (4) 119

Q.16

3
4(7.50)5
2

6
5(11.25)2
3

2
5(?)2
9

(NTSE Stage-I / Raj./ 2013)

(1) 10.25 (2) 10.50 (3) 11.25 (4) 11.50

Q.17

2	72	56
?	0	42
12	20	30

(NTSE Stage-I / Raj./ 2013)

(1) 4 (2) 6 (3) 8 (4) 10

Q.18

91	64	73
84	76	61
25	60	?

(NTSE Stage-I / Raj./ 2013)

(1) 66 (2) 68 (3) 69 (4) 71

Q.19

7	32	?
31	8	25
11	24	9

(NTSE Stage-I / Raj./ 2013)

(1) 50 (2) 48 (3) 47 (4) 51

Q.20

4	20	25
27	81	9
11	44	?

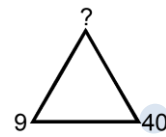(NTSE Stage-I / Raj./ 2013)

(1) 4 (2) 16 (3) 30 (4) 55
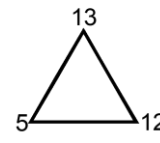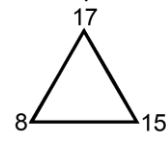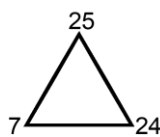
Q.21 Fill in the missing number

−C	2B	−3A
2A	?	−B
−3A	−A	−2B

(NTSE Stage-II, 2013)

(1) − 3C (2) − 2C (3) 3C (4) 2B
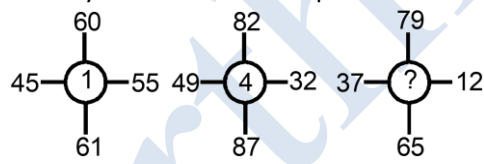
Q.22 Find the number in the position of '?'

13
5 — 12

17
8 — 15

25
7 — 24

?
9 — 40

(NTSE Stage-II, 2013)

(1) 41 (2) 45 (3) 50 (4) 52

Q.23 Identify the number in the position of '?'

60
45—(1)—55
61

82
49—(4)—32
87

79
37—(?)—12
65
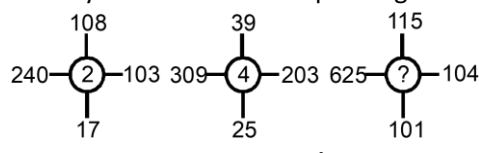
(NTSE Stage-II, 2013)

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

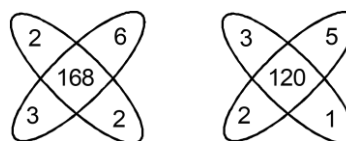**Q.24** Find the letter to be placed in place of '?' in the figure given.

3 4   9 6
5 L   S 4
7 P   ? 2
1 8   8 3

(NTSE Stage-II, 2013)

(1) M (2) N (3) Q (4) R
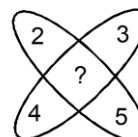
Q.25 Identify the number corresponding to the '?'

108
240—(2)—103
17

39
309—(4)—203
25

115
625—(?)—104
101

(NTSE Stage-II, 2013)

(1) 3 (2) 5 (3) 7 (4) 8

Q.26

2   6
 168
3   2

3   5
 120
2   1

2   3
  ?
4   5
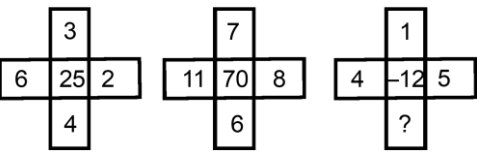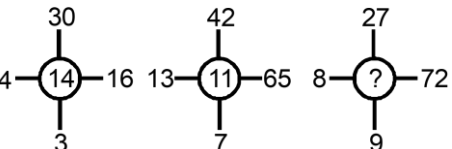
(NTSE Stage-I, Haryana/2013)

(1) 84 (2) 195 (3) 240 (4) 275

Q.27

	3				7				1	
6	25	2		11	70	8		4	-12	5
	4				6				?	

(NTSE Stage-I, Haryana/2013)

(1) 1 (2) 2 (3) 6 (4) 10

Q.28

```
      30              42              27
4--(14)--16    13--(11)--65   8--(?)--72
      3               7               9
```

(NTSE Stage-I, Haryana/2015)

(1) 6 (2) 9 (3) 12 (4) 18
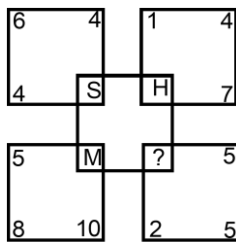
Q.29

C	E	B	D	F
24	120	6	60	?

(NTSE Stage-I, Haryana/2015)

(1) 210 (2) 310 (3) 410 (4) 510
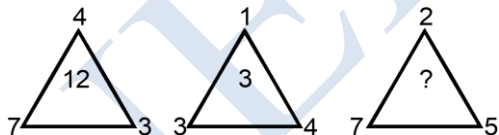
Q.30 Which letter replaces the question mark ?

```
6    4   1    4
4   S    H    7
5   M    ?    5
8   10   2    5
```

(NTSE Stage-II, 2015)

(1) L (2) N (3) P (4) R

Q.31 From among the four alternatives given below, which number replaces the question mark ?

```
    4           1           2
   12          3           ?
 7      3   3      4   7      5
```

(NTSE Stage-II, 2015)

(1) 9 (2) 10 (3) 18 (4) 23

Q.32 Identify the missing term (?) :

6	7	42	13
13	3	39	16
4	?	28	11
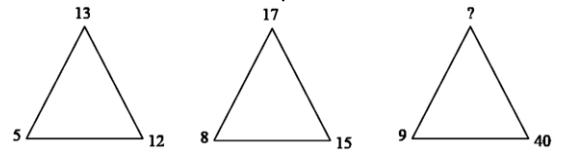
(1) 1 (2) 0 (3) 5 (4) 7

Q.33 What will come at the place of?

T	E	Y
O	K	Z
R	G	?

(1) W (2) X **(3) Y** (4) Z

Q.34 Find the number in the position of '?'
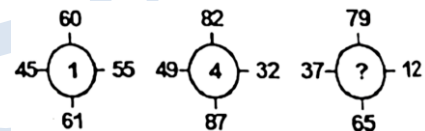

(1) 42 (2) 40 (3) 41 (4) 45

Q.35 Find the letter to be placed in place of (?) in the figure given.

```
3    4    9    6
5    L    S    4
7    P    ?    2
1    8    8    3
```

(1) M (2) N (3) Q (4) R

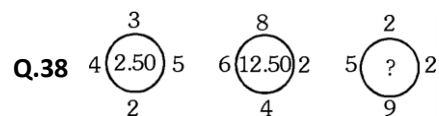**Q.36** Identify the number in the Position of (?)
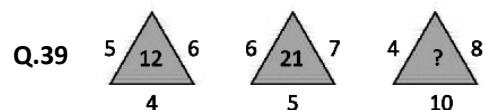
```
    60           82           79
45-(1)-55   49-(4)-32   37-(?)-12
    61           87           65
```

(1) 4 **(2) 5** (3) 6 (4) 7

Q.37

5	8	7
11	17	15
21	33	?

(1) 29 (2) 31 (3) 28 (4) 33

Q.38

```
    3            8            2
4(2.50)5    6(12.50)2    5( ? )2
    2            4            9
```

(1) 1.61 (2) 10.50 (3) 12.25 (4) None

Direction (Q.39-): In question 26-55, numbers are placed in figure on the basis of some rules. One place in figure is indicated by the interrogation sign(?). Find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter of alternatives in the OMR Sheet .

Q.39

```
 5 /\ 6      6 /\ 7      4 /\ 8
  /12\        /21\        /?\
  --          --          --
   4           5           10
```

(1) 22 (2) 32 (3) 30 (4) 23

Q.40

21	56	70
45	87	84
115	180	?

(1) 120   (2) 0130   (3) 140   (4) 150

Q.41

7	14	4
4	12	9
6	24	?

(1) 20   (2) 18   (3) 16   (4) 14

Q.42

(1) 9   (2) 8   (3) 1   (4) 7

Q.43

(1) 51   (2) 61   (3) 63   (4) 54

Q.44

(1) 77   (2) 78
(3) 86   (4) 88

Q.45

(1) 185   (2) 165
(3) 175   (4) 195

Q.46

(1) 46   (2) 42
(3) 43   (4) 44

Q.47

A	D	H
F	I	M
?	N	R

(1) J   (2) K
(3) S   (4) P

Q.48

(1) 146   (2) 126
(3) 175   (4) 185

Q.49

(1) 18   (2) 33
(3) 135   (4) 145

Q.50

1	7	9
2	14	12
3	105	?

(1) 117   (2) 115
(3) 127   (4) 112

Q.51

(1) 13   (2) 6
(3) 15   (4) 17

Q.52

?	1	2
21	22	40
1	2	5
20	23	43

(1) 2   (2) 3   (3) 4   (4) 5
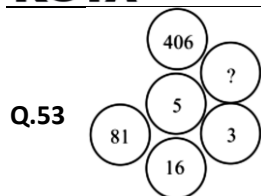
Q.53

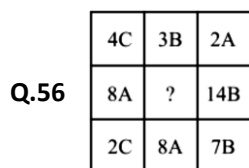
(1) 1   (2) 731

(3) 1625   (4) 2031
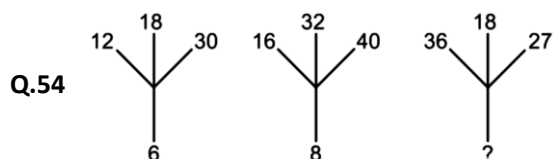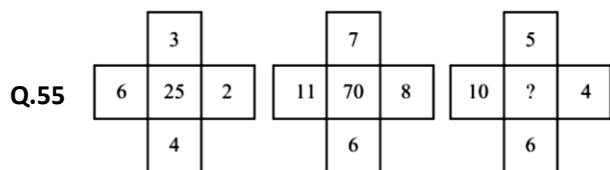
Q.54
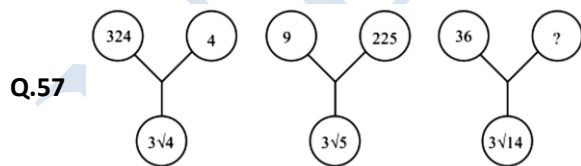

(1) 6   (2) 9

(3) 12   (4) 18

Q.55

(1) 72   (2) 73

(3) 74   (4) 75

Q.56

(1) 16 A   (2) 20B

(3) 22D   (4) 24C

Q.57

(1) 414   (2) 424   (3) 441   (4) 484
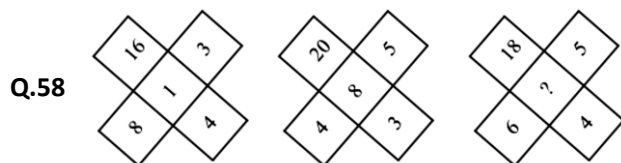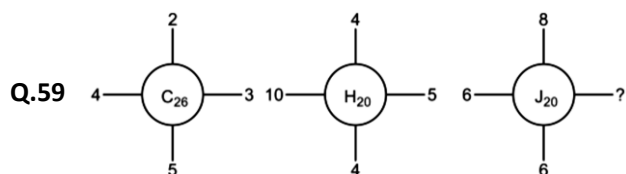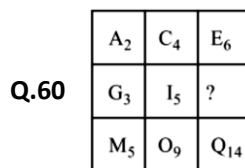
Q.58

(1) 9   (2) 7   (3) 5   (4) 3

Q.59

(1) 8   (2) 9

(3) 4   (4) 7

Q.60

A_2	C_4	E_6
G_3	I_5	?
M_5	O_9	Q_{14}

(1) K_7 (2) M_8

(3) K_6 (4) M_7

Q.61

(1) 2   (2) 3

(3) 6   (4) 4

Q.62

(1) 10   (2) 14   (3) 8   (4) 6

Q.63

(1) 8   (2) 7   (3) 9   (4) 6

Q.64

(1) 7   (2) 6   (3) 8   (4) 5

Q.65

$\sqrt{4}$	$\dfrac{1}{2}$	$\dfrac{3}{2}$
$\sqrt{9}$	$\dfrac{4}{3}$	$\dfrac{5}{3}$
$\sqrt{16}$	?	$\dfrac{11}{4}$
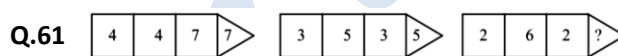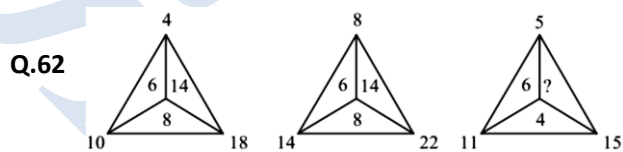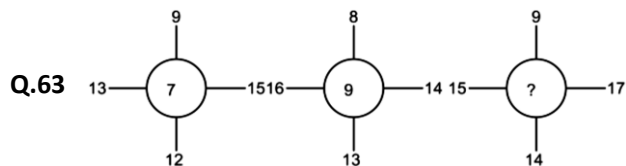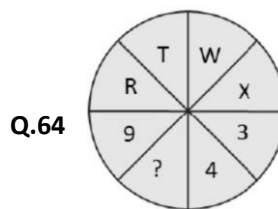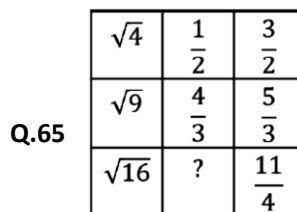
(1) 4/3   (2) 3/2   (3) 5/4   (4) 3/4

Q.66

1	2	3	4	5
0	4	18	48	?

(1) 72   (2) 68

(3) 100   (4) 120

Q.67

BD_6	CE_8	DF_{10}
EG_{12}	FH_{14}	GI_{16}
HJ_{18}	IK_{20}	?

(1) IJ_{18} (2) JL_{12}

(3) JK_{24} (4) JL_{22}

Q.68 Identify the missing term (?) in the following figure.
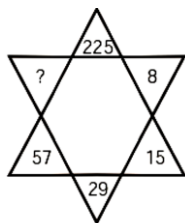
(1) 114   (2) 113   (3) 123   (4) 124

Q.69 Identify the missing term (?) in the following table.

11	12	13
14	15	16
2	3	4
39	57	?

(1) 87   (2) 85   (3) 77   (4) 75

ANSWER KEY

ANALYTICAL QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	1	2	2	1	2	1	2	2	2	2	2	4	1	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	2	1	4	1	1	1	2	3	4	3	1	1	2	3	2

PREVIOUS YEAR QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	4	2	3	1	3	2	4	2	4	3	2	1	1	3	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	2	1	3	2	3	1	3	1	1	2	2	3	1	2
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	2	4	3	3	1	2	1	1	2	2	3	1	3	3	1
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	1	2	4	3	1	2	1	4	2	2	4	3	4	3	3
Que.	61	62	63	64	65	66	67	68	69						
Ans.	3	1	3	1	3	3	4	2	3						

Chapter-04

Analogy

'Analogy' means 'correspondence'.

In questions based on analogy, a particular relationship is given and another similar relationship has to identified from the alternatives provided. Analogy tests are, therefore, meant to test a candidate's overall knowledge, power of reasoning and ability to think concisely and accurately.

Below are given some common relationships which will help you detect most analogies better :

COMPLETING THE ANALOGOUS PAIR

In this type of questions, two words are given. These words are related to each other in some way. Another word is also given. The candidate is required to find out the relationship between the first two words and choose the word from the given alternatives, which bears the same relationship to the third word, as the first two bear.

Ex.1   Giant : Dwarf : : Genius : ?
       (1) Wicked   (2) Gentle
       (3) Idiot   (4) Tiny

Sol: 'Dwarf' is the antonym of 'Giant'. Similarly, the antonym of 'Genius' is 'Idiot'. So, the answer is (3).

Ex.2   Newspaper : Press : : Cloth : ?
       (1) Tailor   (2) Textile
       (3) Fibre   (4) Mill

Sol: Just as newspaper is prepared in a press, cloth is manufactured in the mill. So, the answer is (4).

Ex.3   Anaemia : Blood : : Anarchy : ?
       (1) Lawlessness   (2) Government
       (3) Monarchy   (4) Disorder

Sol: Anaemia is the state of lack of blood. Similarly, anarchy is the state of lack of government.
     So, the answer is (2).

CHOOSING THE ANALOGOUS PAIR

In this type of questions, a pair of words is given, followed by four pairs of words as alternatives. The candidate is required to choose the pair in which the words bear the same relationship to each other as the words of the given pair bear

Ex.4   Darkness : Lamp
       (1) Fatigue : Exercise   (2) Thirst : Water
       (3) Medicine : Illness   (4) Study : Classroom

Sol: Just as a lamp eliminates darkness, so also water eliminates thirst. Hence, the answer is (2).

Ex.5   Fish : Shoal
       (1) Audience : Theatre   (2) Shark : School
       (3) Elephant : Flock   (4) Whale : Hard

Sol: A group of fish is called shoal. Similarly, a group of elephants is called flock.
     So, the answer is (3).

Ex.6   Energy : Joule
       (1) Axe : Grind   (2) Ammeter : Current
       (3) Power : Ampere   (4) Resistance : Ohm

Sol: Joule is the unit of measuring energy.
     Similarly, Ohm is the unit of measuring resistance.
     So, the answer is (4).

Ex.7 Indolence : Beaver

(1) elegance : Peacock   (2) Ferocity : Lamb

(3) Passivity : Cow   (4) Joviality : Hyena

Sol: Just as beaver is known for its indolence, so also peacock is known for its beauty or elegance.

Hence, the answer (1).

CHOOSING A SIMILAR WORD

In this type of questions, a group of three/four words is given, followed by four other words as alternatives. The candidate is required to choose the alternative, which is similar to the given words.

Ex.8 Lucknow : Patna : Bhopal : Jaipur

(1) Indore   (2) Pune   (3) Mysore   (4) Shimla

Sol: Clearly, Lucknow, Patna, Bhopal and Jaipur are all capital cities of various Indian States (U.P., Bihar, M.P. and Rajasthan respectively). Similarly, Shimla is the capital of Himachal Pradesh.

Hence, the answer is (4).

Ex.9 Sitar : Guitar : Tanpura

(1) Trumpet   (2) Violin   (3) Harmonium   (4) Mridanga

Sol: Sitar, Guitar and Tanpura are all string instruments.

Hence, the answer is (2).

Ex.10 Liver : Heart : Kidney

(1) Blood   (2) Nose   (3) Lung   (4) Urine

Sol: Liver, Heart and Kidney are all internal organs of the human body and so is the Lung.

Hence, the answer is (3).

DETECTING ANALOGIES

In this type of questions, the candidate is required to trace out the hidden analogy or common characteristic among the given words or to choose the word which mentions the quality common to the given words.

Ex.11 Judo : Karate : Taekwando

(1) They are names of martial arts.

(2) They can be performed by obese persons.

(3) They are performed on stage

(4) They are important items of Asian Games

Sol: Clearly, Judo, Karate and Taekwando are martial arts and alternative (1) is the most suitable description for all the three.

Hence, the answer is (1).

MULTIPLE-WORD ANALOGY

In this type of questions, a group of three or four inter-related words is given. The candidate is required to trace out the relationship among these words and choose another group with similar relationship, from amongst the alternatives provided.

Ex.12 Pen : Pencil : Ink

(1) Orange : Banana : Juice   (2) Table : Chair : Wood

(3) Cow : Milk : Curd   (4) Fish : Shark : Water

Sol: Clearly, pen contains ink and pencil belongs to the same category as pen i.e. stationery. Similarly, orange contains juice and banana belongs to the same category as orange i.e. fruits

Hence, the answer is (1).

Ex.13 Correspondent : News : Newspaper

(1) Road : Vehicle : Destination   (2) Cloud : Water : Ponds

(3) Farmer : Crops : Food   (4) Mason : Cement : Construction

Sol: Just as a correspondent collects and formats news for newspaper, so also a farmer grows and reaps crops for food.

Hence, the answer is (3).

Ex.14 Tehsil : District : State : Country

(1) Metropolitan : Megapolis : Town : City   (2) Block : Colony : Zone : City

(3) Province : District : State : Country   (4) Madhya Pradesh : Maharashtra : Mumbai : Victoria Terminus

Sol: The given group contains four items of a hierarchical system, in the order from lowest to highest levels. A similar relationship exists among the components of (2).

Hence, the answer is (2).

NUMBER ANALOGY

This section deals with two types of questions :

I. Choosing a number related to a given number in the same manner as the two numbers of another given pair are related to each other;

II. Choosing a similarly related pair as the given number pair on the basis of the relation between the numbers in each pair;

III. Choosing a number similar to a group of numbers on the basis of certain common properties that they possess;

IV. Choosing a number set similar to a given number set.

Ex.15 3 : 11 : : 7 : ?

(1) 22   (2) 29   (3) 18   (4) 51

Sol: Clearly, $3^2 + 2 = 11$, Now, $7^2 + 2 = 51$.

So, if the first number is x, the second number is $x^2 + 2$. Thus, the relationship is $x : x^2 + 2$.

Hence, the answer is (4).

Ex.16 11 : 1210

(1) 8 : 448   (2) 6 : 2160   (3) 7 : 1029   (4) 9 : 729

Sol: Clearly, the relationship is $x : x^2 (x - 1)$. This relationship exists in (1). Hence, the answer is (1).

Ex.17 Which number is like the given set of numbers ?

Given set : (3, 17, 31)

(1) 5   (2) 15   (3) 45   (4) 49

Sol: Clearly, the number in the given set are all prime numbers. 5 is also a prime number and so belongs to the same group.

Hence, the answer is (1).

Ex.18 Which set of number is like the given set ?

Given set : (48, 24, 12)

(1) (44, 22, 10)   (2) (46, 22, 11)   (3) (40, 20, 10)   (4) (42, 20, 10)

Sol: Clearly, in the given set, the first number is twice the second and the second number is twice the third, in the group (40, 20, 10).

Hence, the answer is (3).

ALPHABET ANALOGY

In this type of questions two groups of letter related to each other in some way, are given. The candidate is required to find out this relationship and then choose either a letter-group which is related in the same way to a third group provided in the question or a pair consisting of similarly related letter-groups.

Ex.19 BEGK is related to ADFJ in the same way as PSVY is related to ....?.............

(1) LOQT   (2) ROUX   (3) OTUZ   (4) ORUX

Sol: Clearly, each letter of the first group in a pair is moved one step backward to obtain the corresponding letter of the second group.

```
 B    E    G    K      P    S    V    Y
−1↓  −1↓  −1↓  −1↓    −1↓  −1↓  −1↓  −1↓
 A    D    F    J      O    R    U    X
```

Hence, the answer is (4).

Ex.20 ABCD : NPRT : : FGHI : ?

(1) KLMN   (2) OQRT   (3) RTUW   (4) SUWY

Sol: Clearly, the first, second, third and fourth letters of the first group are moved 13, 14, 15 and 16 steps forward respectively to obtain the corresponding letters of second group.

```
   A     B     C     D
 +13↓  +14↓  +15↓  +16↓
   N     P     R     T
   F     G     H     I
 +13↓  +14↓  +15↓  +16↓
   S     U     W     Y
```

ANALYTICAL QUESTIONS

Directions (Q.1 to Q.5): In each of the following questions, there is a certain relationship between two given words on one side of : : and one word is given on another side of : : while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear. Choose the correct alternative.

Q.1 Mango : Fruit : : Potato : ?
(1) Root　　(2) Fruit　　(3) Stem　　(4) Flower

Q.2 Dog : Bark : : Goat : ?
(1) Bleat　　(2) Howl　　(3) Grunt　　(4) Bray

Q.3 Food : Stomach : : Fuel : ?
(1) Plane　　　　　(2) Truck
(3) Engine　　　　(4) Automobile

Q.4 Moon : Satellite : : Earth : ?
(1) Sun　　　　　(2) Planet
(3) Solar System　(4) Asteroid

Q.5 Laugh : Joy : : Weep : ?
(1) Grief　　　　(2) Remorse
(3) Baby　　　　(4) Punishment

Q.6 Part is related to Whole in the same way as Arc is related to .... ?
(1) Trapezium　　(2) Circle
(3) Triangle　　　(4) Square

Q.7 Shoes is related to Cobbler in the same way as Eyeglasses is related to ....?........
(1) Oculist　　　　(2) Ophthalmologist
(3) Optometrist　　(4) Optician

Q.8 Needle is related to Thread in the same way as Pen is related to ....?......
(1) Ink　　　　(2) Cap
(3) Paper　　　(4) Word

Q.9 Engineer is related to Machine in the same way as Doctor is related to ....?......
(1) Hospital　　(2) Body
(3) Disease　　(4) Medicine

Q.10 Apparel is related to Cloth in the same way as Footwear is related to ....?.........
(1) Material　　(2) Leather
(3) Cobbler　　(4) Shoes

Directions (Q.11 to Q.15): The following questions consist of two words each that have a certain relationship to each other, followed by four lettered pairs of words. Select the lettered pair that has the same relationship as the original pair of words.

Q.11 Run : Race
(1) Enjoy : Journey　　(2) Lecture : Study
(3) Study : Book　　　(4) Party : Dance

Q.12 Train : track
(1) Idea : Brain　　　(2) Bullet : Barrel
(3) Water : Boat　　　(4) Fame : Television

Q.13 Wick : Candle
(1) Lead : Pencil　　　(2) Thread : Wool
(3) Light : Darkness　(4) Quick : Rapid

Q.14 Sip : Gulp
(1) Touch : Push　　(2) Cup : Class
(3) Tent : Hut　　　(4) Soup : Water

Q.15 Glossary : Words
(1) Thesaurus : Rhyme　(2) Atlas : Maps
(3) Catalogue : Dates　(4) Lexicon : Words

Directions (Q.16 to Q.20) : In each of the following questions, two words indicated by I and II have been left out. The correct word to come in place of I is given as one of the four alternatives [(1), (2), (3) and (4)] against I and the correct word to come in place of II is given as one of the four alternatives [(A), (B), (C) and (D)] against II. Read with the correct words, there is some relationship between the two words to the left of sign (::) and the same relationship obtains between the two words to the right of the sign (::). The correct combination is given as one of the four alternatives (a), (b), (c) and (d). Find the correct combination in each case.

Q.16 I : Distance : : Kilogram : II
I.　(1) Far　　　　(2) Metre
　　(3) Europe　　(4) Travel
II.　(A) Heavy　　(B) Ounce
　　(C) Weight　　(D) Noise
(1) 1A　　(2) 2A　　(3) 2B　　(4) 2C

Q.17 I : Roots : : House: II

I.   (1) Flower   (2) Tree
     (3) Branches   (4) Trunk

II. (A) Foundation   (B) Walls
     (C) Floor   (D) Platform

(1) 1B   (2) 2A   (3) 3D   (4) 4C

Q.18 I : Sword : : Thread : II

I.   (1) Dagger   (2) Knife
     (3) Warrior   (4) Kill

II. (A) Needle   (B) Tailor
     (C) Rope   (D) Stitch

(1) 2C   (2) 4D   (3) 1A   (4) 3B

Q.19 I : Ship : : Platform: II

I.   (1) Captain   (2) Quay
     (3) Port   (4) Shore

II. (A) Coolie   (B) Station
     (C) Train   (D) Bench

(1) 2C (2) 1A   (3) 3B   (4) 4D

Q.20 I : Horse : : Bray : II

I.   (1) Neigh   (2) Hoof
     (3) Ride   (4) Saddle

II. (A) Relay   (B) Pony
     (C) Wagon   (D) Donkey

(1) 1A   (2) 1D   (3) 2D   (4) 3C

Directions (Q.21 to Q.25): In each of the following questions, a group of three/four inter-related words is given. Choose a word from the given alternatives, that is similar to the given words and hence belongs to the same group.

Q.21 Iron : Copper : Zinc
(1) Ceramic   (2) Carbon
(3) Silver   (4) Coke

Q.22 Calf : Kid : Pup
(1) Infant   (2) Young   (3) Larva   (4) Animal

Q.23 Jute : Cotton : Wool
(1) Terylene   (2) Silk
(3) Rayon   (4) Nylon

Q.24 Diamond : Sapphire : Ruby
(1) Gold   (2) Silver
(3) Emerald   (4) Bronze

Q.25 Clutch : Brake : Horn
(1) Scooter   (2) Steering
(3) Car   (4) Accident

Directions (Q.26 to Q.30): Three words in bold letters are given in each question, which have something in common among themselves. Out of the four given alternatives, choose the most appropriate description about these three words.

Q.26 Sandstone : Limestone : Coal
(1) They are formed by metamorphic rocks
(2) They are chemical minerals
(3) They are found in river beds
(4) They are formed by sedimentary rocks

Q.27 Mars : Mercury : Venus
(1) They have no opposite motion
(2) They are evil planets
(3) They are the planets nearest to the earth
(4) They have no corresponding lucky stone

Q.28 Delhi : Agra : Mathura
(1) They have been capitals of the country
(2) They have exquisite temples
(3) They have religious background
(4) They are situated on the bank of river Yamuna

Q.29 Ovary : Uterus : Cervix
(1) They are excretory organs.
(2) They are reproductive organs
(3) They are endocrine glands
(4) They are organs for fertilisation in plants

Q.30 Magenta : Fawn : Turquoise
(1) They are marine creatures
(2) They are migratory birds
(3) They are precious and semi-precious stones
(4) They are colours

Directions (Q.31 to Q.35): In each of the following questions, some words are given which are related in some way. The same relationship obtains among the words in one of the four alternatives given under it. Find the correct alternative.

Q.31 Bone : Skeleton : Nerve
(1) House : Door : Window
(2) Spoke : Wheel : Handle
(3) Retina : Eye : Pupil
(4) Snow : Cloud : Ice

Q.32 Magazine : Story : Article

(1) Tea : Milk : Sugar

(2) Television : Newspaper : Entertainment

(3) Bed : Quilt : Pillow

(4) Novel : Drama : Literature

Q.33 Carnivorous : Tiger : Wolf

(1) Mango : Banana : Fruits

(2) Worker : Master : Manager

(3) Cat : Cow : Milk

(4) Student : Boy : Girl

Q.34 Evaporation : Cloud : Rain

(1) Sneezing : Cough : Cold

(2) Accident : Injury : Pain

(3) Tanning : Leather : Purse

(4) Bud : Flower : Fragrance

Q.35 Dog : Squirrel : Tail

(1) Cottage : Hut : Palace

(2) Fish : Crocodile : Water

(3) Horse : Ox : Horn

(4) Truck : Scooter : Gear

Directions (Q.36 to Q.40): In each of the following questions, there is a certain relationship between two given numbers on one side of : : and one number is given on another side of : : while another number is to be found from the given alternatives, having the same relationship with this number as the numbers of the given pair bear. Choose the best alternative.

Q.36 21 : 3 : : 574 : ?

(1) 23   (2) 82   (3) 97   (4) 113

Q.37 18 : 30 : : 36 : ?

(1) 54   (2) 62   (3) 64   (4) 66

Q.38 17 : 52 : : 1 : ?

(1) 3   (2) 4   (3) 5   (4) 51

Q.39 3 : 243 : : 5 : ?

(1) 425   (2) 465   (3) 546   (4) 3125

Q.40 20 : 11 : : 102 : ?

(1) 49   (2) 52   (3) 61   (4) 98

PREVIOUS YEAR QUESTIONS

Directions (Q.1 to Q. 11): In each of the following questions, these are two terms to the left of the sign : : which are related in some way, obtain the same relationship between term to the right of the sign : : from one of the alternative given below.

Q.1 7 : 42 : : 9 : ?

(NTSE Stage-II, 2011)

(1) 75 (2) 65 (3) 46 (4) 72

Q.2 8 : 32 : : 12 : ?

(NTSE Stage-II, 2011)

(1) 52 (2) 68 (3) 72 (4) 75

Q.3 DGOT : JKUX : : FINP : ?

(NTSE Stage-II, 2011)

(1) KMTU (2) LNTS (3) LMTT (4) MNTU

Q.4 EIKR : HMPX : : GKMT : ?

(NTSE Stage-II, 2011)

(1) KORY (2) JORZ (3) JNSZ (4) INQZ

Q.5 FILP : AEIN : : IKNT : ?

(NTSE Stage-II, 2011)

(1) CGLR (2) EGJR (3) DGKR (4) DHLS

Q.6 ILNT : FHIN : : KOSV : ?

(NTSE Stage-II, 2011)

(1) IKMN (2) HKOQ (3) ILNR (4) HKNP

Q.7 03 : 10 : : 08 : (?)

(NTSE Stage-I/Raj./ 2012)

(1) 17 (2) 16 (3) 14 (4) 13

Q.8 01 : 08 : : (?) : 125

(NTSE Stage-I/Raj./ 2012)

(1) 10 (2) 12 (3) 15 (4) 16

Q.9 08 : 28 : : (?) : 65

(NTSE Stage-I/Raj./ 2013)

(1) 9 (2) 12 (3) 15 (4) 18

Q.10 35 : 91 : : 189 : (?)

(NTSE Stage-I/Raj./ 2013)

(1) 343 (2) 341 (3) 280 (4) 210

Q.11 $\dfrac{7}{11} : \dfrac{13}{17} : : \dfrac{19}{23} : (?)$

(NTSE Stage-I/Raj./ 2013)

(1) $\dfrac{25}{27}$ (2) $\dfrac{29}{31}$ (3) $\dfrac{23}{29}$ (4) $\dfrac{29}{33}$

Q.12 As Kandla is related to Gujarat, in the same way Kochin is related to which of the following?

(1) Karanataka (2) Goa

(3) Chennai (4) Kerala

Q.13 As India is related to New Delhi, in the same way Pakistan is related to which of the following ?

(1) Rawalpindi (2) Peshawar

(3) Lahore (4) Islamabad

Q.14 As rupee is related to India, in the same way yen is related to which of the following?

(1) Turkey (2) Bangladesh

(3) Japan (4) Pakistan

Instruction : In each of the following questions, there is a certain relationship between two given numbers on left side of (: :) and one number is given on the right side of (: :) while another number is to be found from the given alternatives, having the same relationship with the number as the numbers of the given pair bear. Choose the correct alternative.

Q.15 21 : 3 : : 574 : ?

(1) 23 (2) 82 (3) 97 (4) 113

Q.16 42 : 20 : : 64 : ?

(1) 31 (2) 32 (3) 33 (4) 34

Q.17 3 : 11 : : 7 : ?

(1) 22 (2) 29 (3) 18 (4) 51

Q.18 42 : 56 : : 72 : ?

(1) 81 (2) 90 (3) 92 (4) 100

Q.19 9 : 80 : : 100 : ?

(1) 901 (2) 1009 (3) 9889 (4) 9999

Q.20 Museum is related to Curator in the same way as Prison is related to.............

(1) Manager (2) Monitor

(3) Jailor (4) Warden

Directions (Q.21 to Q.29): In each question 21 to 29 there are two words separated by ':' and other two separated from the first two by the symbol '::', find the relation between two sets of words and select one word from the right side of ':' which have the same relation as left set of word of '::' . Fill the circle of the letter denoting yours selected answer on the OMR answer sheet.

Q.21 Lion : Roar :: Ass : ?

(1) Trumpet (2) Bray

(3) Bark (4) Howl

Q.22 Ocean ; Water :: Glacier : ?
(1) Mountain   (2) Cave
(3) Ice   (4) Refrigerator

Q.23 Arc : Circle :: Line segment : ?
(1) Sphere   (2) Ellipse
(3) Point   (4) Square

Q.24 Court : Justice :: School : ?
(1) Student   (2) Teacher
(3) Education   (4) Building

Q.25 Protein : Growth :: Carbohydrates : ?
(1) Immunity   (2) Resistance
(3) Diseases   (4) Energy

Q.26 USA : Congress :: Iran : ?
(1) Cortes   (2) Althing
(3) Majlis   (4) Storting

Q.27 Country : President :: State : ?
(1) Chief Minister   (2) Minister of State
(3) Speaker   (4) Governor

Q.28 AB : ZY :: CD : ?
(1) UV   (2) WX   (3) VU   (4) XW

Q.29 42 : 56 :: 110 : ?
(1) 148   (2) 132   (3) 132   (4) 124

Q.30 As clay is related to pottery in the same way gold is related to which of the following.
(1) Woman   (2) Gold Smith
(3) Ornaments   (4) Metal

Q.31 As bird is related to kite, in the same way fish is related to which of the following.
(1) Crow   (2) Submarine
(3) Boy   (4) Thread

Q.32 As 'gram' is related to 'mass' in the same way, 'Centimeter is related to
(1) Area   (2) Volume
(3) Density   (4) Length

Questions (Q.33 to Q.37):
Instruction: In each of the following questions, there is a certain relationship between two given numbers on left side of sign (: :) and one number is given on the right side of sign(::) while another number is to be found from the given alternatives having the same relationship with the number as the numbers of the given pair bear. Choose the correct alternatives.

Q.33 20 : 11 : : 102 : ?
(1) 49   (2) 52   (3) 61   (4) 96

Q.34 6 : 35 : : 7 : ?
(1) 48   (2) 42   (3) 34   (4) 13

Q.35 9 : 162 : : 8 : ?
(1) 96   (2) 112   (3) 128   (4) 162

Q.36 64 : 100 : : 144 : ?
(1) 121   (2) 169   (3) 180   (4) 196

Q.37 0.01 : 0.0001 : : 0.05 : ?
(1) 0.00025   (2) 0.0025
(3) 0.025   (4) 0.25

ANSWER KEY

ANALYTICAL QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	3	1	3	2	1	2	4	1	4	2	3	2	1	1	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	4	2	1	1	2	3	3	2	3	2	4	3	4	2	4
Que.	31	32	33	34	35	36	37	38	39	40					
Ans.	3	1	4	2	4	2	4	2	4	2					

PREVIOUS YEAR QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	4	3	3	2	3	4	1	4	3	2	2	4	4	3	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	1	4	2	4	3	2	3	4	3	4	3	4	4	3	3
Que.	31	32	33	34	35	36	37								
Ans.	2	4	2	1	3	4	2								

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Class 9th	8	2200/Set	2000/Set
Class 10th	9	2600/Set	2400/Set
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