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Coding Decoding - Complete Study Material with Solved Examples

Welcome to our blog on Coding Decoding, an essential topic in Logical Reasoning that plays a crucial role in all the SSC and Bank exams. Approximately 3 - 5 questions are certain to appear from this topic in the exam, making it imperative for you to grasp the concepts of Coding Decoding thoroughly and practice a variety of questions.
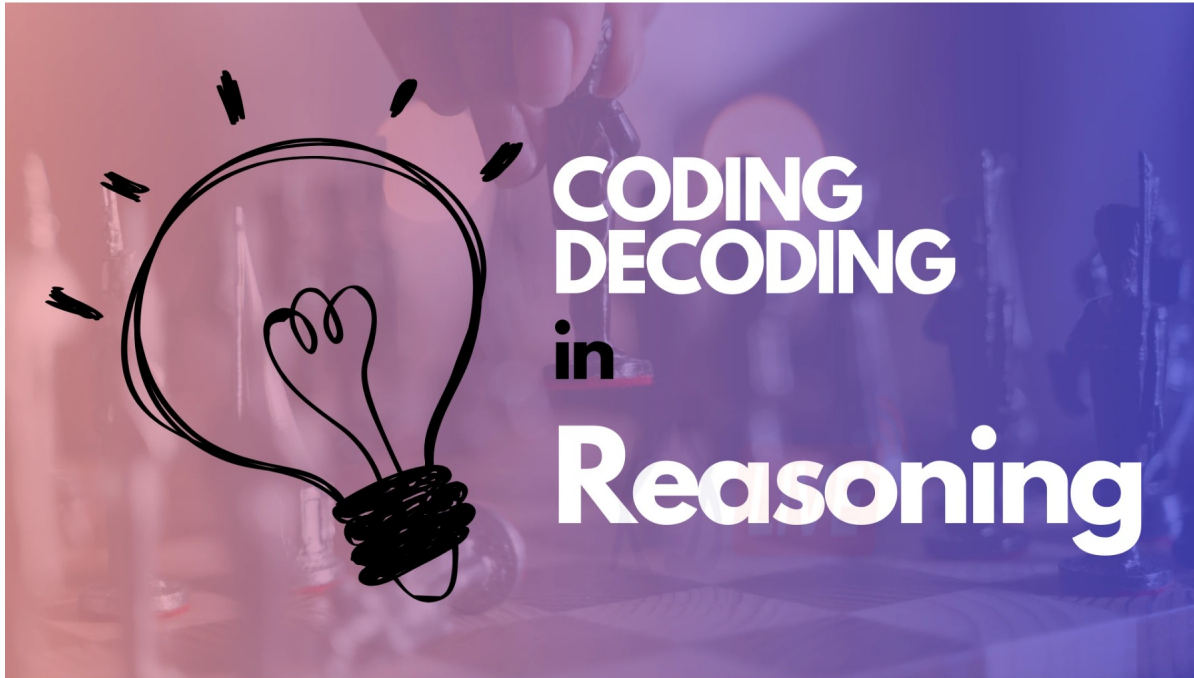


In this blog, we will comprehensively cover all the theoretical concepts and logical aspects of this topic. So, let's dive into the world of Coding Decoding and boost your exam preparation.

# What is Coding Decoding?

Coding and Decoding is used to encode words, numbers, letters, or a combination of the three in specified patterns or codes, using set rules and guidelines.
**Coding:** Coding is the process of encoding a word, letter, number, or combination of the three in a specific code or pattern that follows a set of rules.
**Decoding:** Decoding is the procedure used to restore patterns to their original forms once they have been coded.

**Coding**

**The coded language can be decoded by:**
**1.** Moving the letters one or more steps forward or backward. (Example: COMMON-DPNNPO)
**2.** Substituting numbers for letters and vice-versa. (Example: COMMON- 31513131514)
**3.** Writing the letters of the given word in reverse order in part or in whole. (Example: COMMON-XLNNLM) (refer table number 1)
**4.** Replacing the letters in their natural series by the same positioned letters in their reverse series. (Example: COMMON-241214141213) (refer table number 1)
**5.** Replacing the letters by symbols. (Example: COMMON- @>>&)
**6.** Doing some mathematical operations with the positional values of letters in English alphabetical series or with the number of letters present in a word or both.
**7.** Representing the word by any fictitious word / letter / number / symbol. (Example: any how mental – tb gf bf, mental my you – gf jk lo; Therefore mental = gf)

The above mentioned are the ways that can be used in coding questions. Basically, in this, we deal with the alphabet (26 letters) and everyone knows it very well. Still, you won't remember the exact position of any random letter. Like you won't remember the position of M starting from A and then starting from Z, and coding is a game of the same. Here you will have to learn each letter position without writing the systematic alphabet every time and only practice will help you out.

Alphabet in natural series is:

| A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 |
| Z | Y | X | W | V | U | T | S | R | Q | P | O | N |
| 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |

**Tricks to learn Postional Values of the Alphabets**

There are a few tricks to learn the positional value of each letter. The positional values of A, B, C, D are 1, 2, 3, 4 respectively while the positional values of X, Y, & Z are 24, 25 & 26 respectively.
The positional values of EJOTY are based on the multiples of 5.

| E | J | O | T | Y |
|---|---|---|---|---|
| 5 | 10 | 15 | 20 | 25 |

Now, it's time to learn the positional/place value of other letters:

All the letters tell their positional values themselves.

**F (6):** Read me by inverting my shape, I look like the digital form of 6

**G (7):** I carry my place value in my tail which is 7

**H (8):** Read me by putting straight horizontal lines up and down.

**I (9):** If you write me in cursive form, I will look similar to a number that is 9.

**K (11):** I am a team that is Kings XI Punjab

**L (12):** I look like a 2.

**M (13):** M and W look like numerical value 3 but M comes first, its place value is, 13, and W's place value is 23.

**N (14):** Read me by putting horizontal lines up and down, I will look like 4 of numbers, put X before me and I will become XIV which is 14.

**P (16):** Read me by inverting me horizontally and putting 1 before me I will become 6 so, my place value is 16.

**Q (17):** I also carry my place value in my tail but put 1 before it, which becomes 17.

**R (18):** Read me by putting an arc and put 1 before me which becomes 18.

**S (19):** Stretch my upper curve downwards, it looks like 9, and put 1 before me which becomes 19.

**U (21):** Uth (Youth) comes at the age of 21.

**V (22):** V is formed by 2 slating lines similarly its place value has 2 twos which is 22.

**W (23):** Mentioned above at M (13).

**Tricks to learn Opposite Letters:**

A (1) − Z (26): **AbuzZ**
B (2) − Y (25): **BoY**
C (3) − X (24): **CraX**
D (4) − W (23): **DeW**
E (5) − V (22): **Eve**
F (6) − U (21): **Full**
G (7) − T (20): **GoT**
H (8) − S (19): **HiS**
I (9) − R (18): **IReland**
J (10) − Q (17): **Jungle Queen**
K (11) − P (16): **Kacha Papad**
L (12) − O (15): **Love**
M (13) − N (14): **MaN**

Also, sum of the opposite letters of all the opposite letters is 27.

**Decoding**

It is the reverse of coding. Here the code needs to be deciphered with the help of given words. We use the reverse series of the alphabet in deciding.

Alphabets in reverse series are:

| Z | Y | X | W | V | U | T | S | R | Q | P | O | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| M | L | K | J | I | H | G | F | E | D | C | B | A |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

Similarly, in reverse the series of few letters be:

| Z | V | Q | L | G | B |
|---|---|---|---|---|---|
| 1 | 5 | 10 | 15 | 20 | 25 |

Note: On reaching Z, the series restarts from A and on reaching A, it restarts from Z.

# Types of Coding Decoding

1. Letter Coding
2. Number Coding
3. Symbol Coding
4. Substitution Coding
5. Chinese coding
6. Coding by Shifting
7. LSN Coding
8. Conditional coding

# Letter Coding

In this topic, the alphabets of a word are coded with the help of different operations e.g. addition, subtraction, interchanging etc. and need to find the code of another word using the same operation.

**Letter Coding in Reasoning**

**Example:** If in a certain code, 'GLAMOUR' is written as 'IJCNMWP' and 'MISRULE' is written 'OGUSSNC', then how will 'TOPICAL' be written in that code?

1. VMRJACF

2. VMRJACJ

3. VBRJACJ

4. YMRJACJ

**Solution: (2)** VMRJACJ

The letters of the words are coded as 1st letter of word +2, 2nd letter of word -2, 3rd letter of word +2, 4th letter of word +1, 5th letter of word -2, 6th letter of word +2, 7th letter of word -2

Following this process 'GLAMOUR' is written as 'IJCNMWP'. Similarly TOPICAL is coded as VMRJACJ.

# Number Coding

In this topic, either numerical code values are assigned to a word or alphabetical code letters are assigned to the numbers.

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# Number Coding in Reasoning

**Example:** If "DRINKING" is written as 5171013128156 then "SYMBOLISM" can be written as?

**1.** 20241411611101812

**2.** 20241411611101816

**3.** 21241411611101818

**4.** 20241411611101814

**Solution: (4)** 20241411611101814
Word D R I N K I N G
Positional value 4 18 9 14 11 9 14 7
Operation +1 - 1 +1 - 1 +1 -1 +1 -1
Code 5 17 10 13 12 8 15 6
Similarly,
Word S Y M B O L I S M
Positional value 19 25 13 2 15 12 9 19 13
Operation +1 - 1 +1 - 1 +1 -1 +1 -1 +1
Code 20 24 14 1 16 11 10 18 14

# Symbol Coding

In this topic, the alphabets of a word are replaced by some symbols.



**Example:** If PRINTER is $#@*!&# , then INTERPRETER is:

1.@*!&#$&#!&#

2.@*&!#$#&&!#

3.@*!&#$#&!&#

4.@*!&!$#&!&#

**Solution: (3)** @*!&# #&!&#  Given: PRINTER is # @ * ! & #
Here, each letter signifies a symbol.
Hence, INTERPRETER: @ * ! & # $ # & ! & #

# Substitution Coding

In this topic, words are encrypted or coded with the substitute word.

**Example:** If 'bed' is called 'table', 'table' is called 'kitchen', 'kitchen' is called 'oven', 'oven' is called 'mixer' and 'mixer' is called 'heater', in what will a lady bake?

1.Table

2.Oven

3.Mixer

4.Kitchen

**Solution: (3)** Mixer
The lady shall bake in an 'oven' but 'oven' is called 'mixer'.
So, the lady will bake in a 'mixer'.

# Chinese Coding

In these questions, all words consist of the same meaning but in different orders, candidates have to find out the code of every word. It can be easy by using 2-3 sentences and can be difficult with direct and indirect coding. The difficulty level can be increased by adding more statements and words to questions. Generally, in this part of coding, candidates get questions of 3 statements 3 words, 4 statements 5 words in the first line, 3 words in the second line, and 4 words in the third and fourth line.



**Example:** In a certain code language "Life is a problem" is coded as "ta, ra, ti, la" "Life sucks sometimes" is coded as "ta, pa, tu" "Sometimes is happiness" is coded as "tu, ra, ka" "Difficult is a problem" is coded as "la, ra, ti, pu"

**Q:1** What can "pu ti ta" mean?
1.Difficult life problem 2.Problem sucks sometimes
3.Life a difficult 4.Either 1 or 3
5.None of these

**Solution: (4)** Either 1 or 3



The code for "problem" is either "la" or "ti"
The code for "a" is either "la" or "ti"
The code for "life" is either"ta"

# Coding by Shifting

In this particular coding, a sentence is provided with different number of words. The sentence is then encoded by rearranging the position of the words within it. The aspirants have to decipher the code for another sentence by deducing the word sequence using the provided information.

**Example:** If the sentence It is impossible to put an end to terrorist activities is written as to impossible it to terrorist is activities an end put in a certain code, then how will Superpowers need not take any heed of global public opinion" be written in that code?

1.public need take not superpowers global opinion heed of any

2.opinion take not superpowers global public need heed of any

3.take not superpowers global public need opinion heed of any

4.superpowers global public need opinion heed of take not any

5.take superpowers global not public need opinion heed of any

**Solution: (3)** take not superpower global public need opinion heed of any
It is impossible to put an end to terrorist activities
1 2 3 4 5 6 7 8 9 10
Then After coding, to impossible it to terrorist is activities an end put
4 3 1 8 9 2 10 6 7 5
Similarly,
Superpowers need not take any heed of global public opinion is coded as take not superpowers global public need opinion heed of any.

# L-S-N Coding

In LSN Coding, 3-4 sentences are given having 3 or more words.
Each word is coded in letter/number/symbol form or a combination of all, applying certain logic. The aspirants have to determine the logic and find the code of the question asked or the code suitable for which word.

**Example:** In a certain language,
"Hemant is banker" is written as "37a 5 37"
"Sagar was Engineer" is written as "26 10 65"
"Engineer became banker" is written as "65 37 37"

**Q:1** What can be the code for "Corals"?

1.23

2.37

3.24

4.12

5.76

**Solution: (2)** 37
Given code is the square of total number of digits in eachmword + 1. Such as, Hemant = (6 x 6) + 1 = 37
Similarly two letter words are coded as '5', three letter words are coded as '10', four letter words are coded as '17', five letter words are coded as '26', six letter words are coded as '37', seven letter words are coded as '50', eight letter words are coded as '65' and so on.
Corals - (6 x 6) + 1 = 37
"Corals" is written as 37.

# Conditional Coding

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In this type of coding, some conditions are given to form code like this condition is given in questions, and code for any number, symbol, or alphabet will be asked. Conditions:

If the first, as well as the last digit, is odd, both are to be coded as ©. If the first, as well as the last digit, is even, their codes are to be swapped. If '02 is the last digit, it is to be coded as *.

**Example:** In each of the following questions below is given a group of letters followed by four combinations of digits/symbols numbered (a), (b), (c), and (d). You have to find out which of the combinations correctly represents the group of letters based on the following coding system and mark the number of that combination as the answer. If none of the four combinations correctly represents the group of letters, mark (e), i.e. 'None of these', as the answer

Note: More than one condition may apply

| Letter | T | G | F | A | P | Q | C | M | E | D | B | K | S | O | R |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Digit/Symbol | # | 2 | 7 | µ | % | 3 | & | 9 | 1 | @ | 5 | © | 6 | 8 | $ |

**Conditions:**
(i) If the first letter is consonant and the last letter is vowel then both are coded with the code of the vowel.
(ii) If both the second and the last letter is a vowel, then their codes are to be interchanged.
(iii) If the third letter is a consonant and the fourth letter is a vowel, both are to be coded as the code for the consonant.
(iv) If both first and second last letters are consonant then both are coded as the code of the third letter.

**Q:1** ACROSS

1. µ&$866

2. µ&$$66

3. &µ8866

4. µ&8$66

5. None of these

**Solution: (5)** None of these
The given word is - ACROSS
Code for these lettersA- µ C- & R- $ O-8 S- 6 S- 6

**Condition (iii)** is applied because the third letter is consonant and the fourth letter is a vowel.
Hence, the code for R and O is coded with the code of R.
So, the code is- ACROSS - µ&$$66

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This article has provided you with valuable insights into the world of Coding Decoding in logical reasoning. We sincerely hope that you have found this blog useful and that it has contributed to enhancing your understanding of this crucial topic. As you continue to gear up for your upcoming exam, we encourage you to share your thoughts, your performance in the previous year questions, and any doubts you may have in the comments section below.

Stay tuned, as KD Live promises to bring you more such informative blogs with comprehensive study material and a thorough analysis of previous year questions on all the topics of Logical Reasoning section. Best of luck with your exam preparations, and may you excel in your endeavors!