



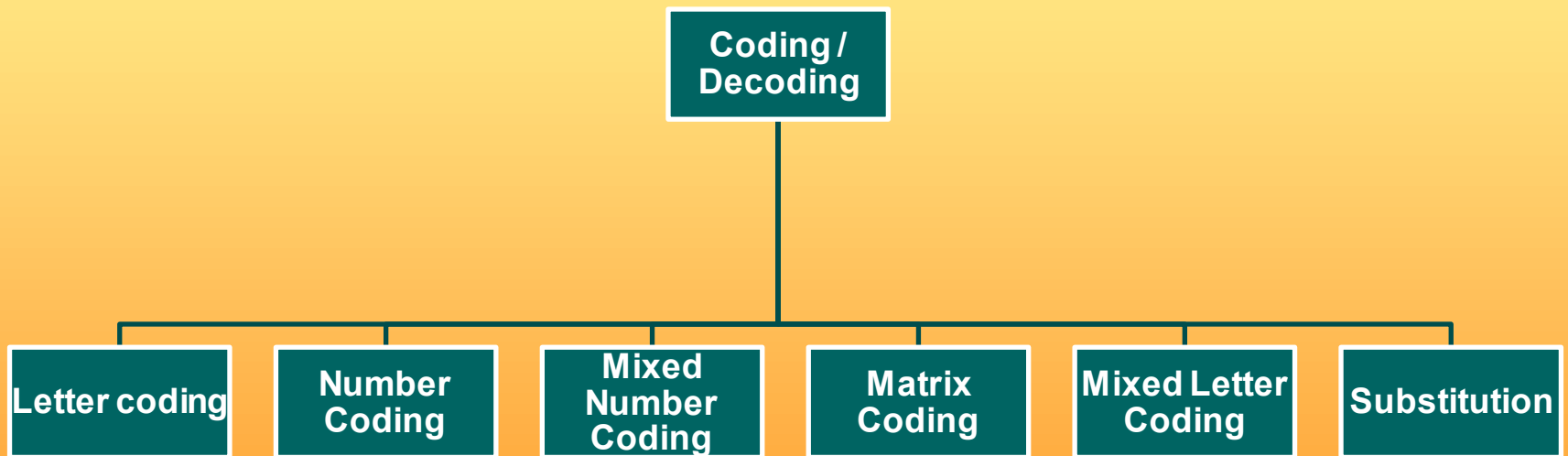
Coding-Decoding Test



Coding decoding

- A code is a '**system of signals**'.
- Coding can be used to send secret messages.
- Coding is to convert the message into some signals & Decoding is to convert it into the original form.

Types of coding decoding





Letter coding

The real alphabets in a word are replaced by certain other alphabets according to a specific rule to form its code.

Letter coding

Case I. Coding by shifting letters

Form1: Forward Sequence Pattern

Each letter in the word is moved one step forward to obtain the corresponding letter of the code

Example: If in a certain language TRIPPLE is coded as USJQQMF, how is DISPOSE coded in that language.

Solution: Clearly, each letter in the word TRIPPLE is moved one step forward to obtain the corresponding letter of the code.

	T	R	I	P	P	L	E
+ 1	↓						
	U	S	J	Q	Q	M	F

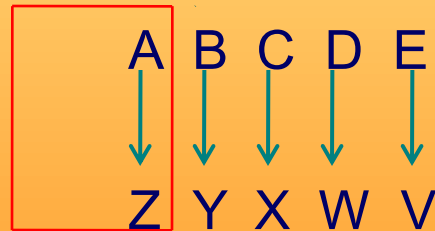
So, in DISPOSE, D will be coded as E, I as J, S as T and so on. Thus, the code becomes EJTQPTF.

Letter coding

Form 2: Backward Sequence Pattern

Example: 1 If 'DATE' is coded as 'WZGV', how will you code 'COME'?

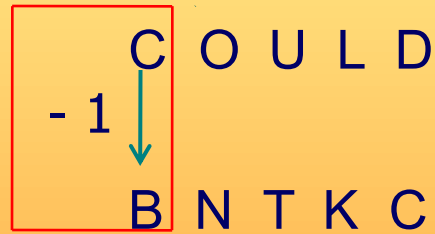
Answer: 'XLNV'. Here the coding is done in backward alphabetical order. A is coded as Z, B as X, C as W, and so on.



Letter coding

Example 2: If 'COULD' is coded as 'BNTKC', how will you code 'MARGIN'?

Answer: Clearly, each letter in the word COULD is moved one step backward to obtain the corresponding letter of the code.



So, in MARGIN, M will be coded as L, A as Z, R as Q and so on. Thus, the code becomes LZQFHM.

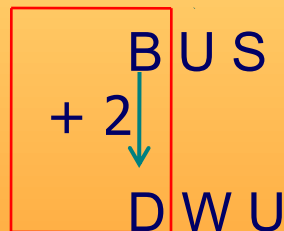
Letter coding

Form 3: Skipped Sequence Pattern

Codes are formed by skipping letters.

Example: If 'BUS' is coded as 'DWU', how will you code 'ROBS'?

Answer: Codes are formed by skipping one letter, i.e., A (B) C;
B (C) D; and so on.



So, in ROBS, R will be coded as T, O as Q, B as D and S as U. Thus the code becomes TQDU.

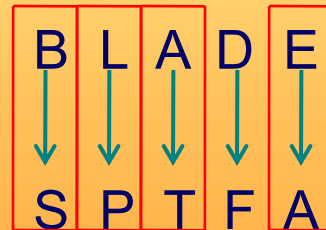
Letter coding

Case II: Coding by Analogy

Here codes are based on the analogy given in the question itself

Example: If 'SPTFA' stands for 'BLADE', how will you code 'BALE'?

Answer: 'BLADE' has been coded as 'SPTFA'. Letters in word 'BALE', which have to be coded, are also there in the word 'BLADE'. Hence all that needs to be done is to choose the relevant code letters from the code word 'SPTFA'.



Thus, B becomes S,
 A becomes T,
 L becomes P, and
 E becomes A.

Therefore, 'BALE' will be coded as 'STPA'.



Letter coding

Case III: Coding by reversing letters

Example: 'RETSAMROAD' and 'MROWBOOK' represent two well known word groups in partially coded form. Decipher the correct forms of these word groups.

Answer: R E T S A M R O A D
 M R O W B O O K

The initial word is given second position and the second word is coded by reversing the letters.

Number coding

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

There are several methods of number coding. The important ones are:

- (i) Sometimes position numbers of letters remain the same. For example, FOOD is coded as 615154.



- (ii) Position numbers letters are added. For example, FOOD is coded as 40, In this case position number is added, i.e., $6 + 15 + 15 + 4 = 40$.
- (iii) Sometimes position numbers of letters are added but at the same time a certain number is subtracted.
- (iv) Sometimes the sum of the position numbers of letters in words is divided by a certain number.

Number coding

Case I: Letter to number coding

In letter to number coding, numerical code values are assigned to words

Example: If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?

(a) 5279431 (b) 5978213 (c) 8251896 (d) 8543691

Answer:

As given the letters are coded as

D	E	L	H	I	C	A	U	T
7	3	5	4	1	8	2	9	6

So, in CALICUT, C is coded as 8,

A as 2,

L as 5,

I is coded as 1,

U is coded as 9

and T as 6.

Thus CALICUT is coded as 8251896.

Number coding

Case II: Number to Letter Coding

When alphabetical code values are assigned to the numbers

Example:

In a certain code 36492 is coded as SMILE and 058 is coded as RUN, then how is 33980 coded?

Answer:

Clearly in the given figures, the numbers are coded as follows:

3	6	4	9	2	0	5	8
S	M	I	L	E	R	U	N

Here 3 is coded as S,
9 as L,
8 as N
and 0 as R.

So, 33980 is coded as SSLNR.



Matrix coding

In matrix coding type questions, a word is represented by only one set of number 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 that of matrix II from 5 to 9. A letter from these matrices can be represented first by its row and next by column number.

Matrix coding

Example: Identify the word REAP

MATRIX I

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

MATRIX II

	5	6	7	8	9
5	0	R	K	L	P
6	L	P	0	R	K
7	0	K	R	P	L
8	P	R	K	L	0
9	R	L	K	0	P

Answer:

From matrix II, R can be coded as 56, 68 77 86 95

From matrix I, E can be coded as 00,13,20,31 or 44.

From matrix I, A can be coded as 01,10,22, 32 or 43.

From matrix II, P can be coded as 59,66,78,85 or 99



Substitution

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

Example: If orange is called butter, butter is called soap, soap is called ink, ink is called honey and honey is called orange, which of the following is used for washing clothes?
(a) Honey (b) Butter (C) Orange (d) Soap (e) Ink

Answer: Clearly, 'soap' is used for washing the clothes. But, 'soap' is called 'ink'. So, 'ink' is used for washing the clothes.



Mixed Letter Coding

In this type of questions, three or four complete messages are given in the coded language and the code for a particular word is asked. To analyze such codes, any two messages bearing a common word are picked up. The common code word will mean that word. Proceeding similarly by picking up all possible combinations of two, the entire message can be analyzed.

Mixed Letter Coding

Example:

In a certain code, 'bi nie pie' means 'some good jokes'; 'nie bat lik' means 'some real stories'; and 'pie lik tol' means 'many good stories'. Which word in that code means 'jokes'?

- (a) bi (b) nie (c) pie
(d) Can't be determined (e) None of these

Answer:

In the first and second statements, the common code word is 'nie' and the common word is 'some'.

bi **nie** pie
some good jokes

nie bat lik
some real stories

So, 'nie' means 'some'.

In the first and third statements, the common code word is 'pie' and the common word is 'good'.

bi nie **pie**
some **good** jokes

pie lik tol
many **good** stories

So, 'pie' means 'good'.

Thus, in the first statement, **'bi' means 'jokes'.**



Mixed Number Coding

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

Mixed Number Coding

Example:

In a certain code, '247' means 'spread red carpet'; '256' means 'dust one carpet' and '234' means 'one red carpet'. Which digit in that code means 'dust'?

Answer:

In the first and second statements, the common code digit is '2' and the common word is 'carpet'.

2	4	7	2	5	6
spread	red	carpet	dust	one	carpet

So, '2' means 'carpet'.

In the second and third statements, the common code digit is '6' and the common word is 'one'.

2	5	6	2	6	4
dust	one	carpet	one	red	carpet

So, '6' means 'one'.

Therefore, in the second statement, **'5' means 'dust'.**



Thanks...