

Rajasthan RVUNL

Reasoning

Important Formula Notes



IMPORTANT FORMULAS ON REASONING

SERIES

A series is a set of some number or letters arranged in some typical way or we can say that a series is an informally speaking of number or letters.

In a series questions, you must give some finite terms with one or a pair of term missing, and you have to complete the series by filling that missing term, based on the pattern of the question.

There are two types of Series:

1. Number Series
2. Letter Series

In comparison to Letter Series, Number series is more typical. To be good in Number series one must have the basic knowledge of numbers. For example, what are Natural Numbers, Rational Numbers, Whole Numbers etc. The Number Series questions are based on different patterns. Some of them are:

- Prime Number Pattern
- Square Number Pattern
- Cube Number Pattern
- Complex Multiplication Pattern etc.

NUMBER ANALOGY

Typical relationships between the numbers

- One number is a multiple of other.
- One number is the square root of the other.
- One number is the cube or cube root of the other.
- The two numbers can be consecutive, even, odd or prime numbers.
- In letter analogy, the relationship is between 2 groups of letters on each side of the sign:

In word analogy, there is a certain relationship between the 2 given words on one side of '::' and one word is given on the other side.

Analogy is a comparison between one thing and another, typically for the purpose of explanation or clarification.

- A thing which is comparable to something else in significant respects.
- A process of arguing from similarity in known respects to similarity in other respects.
- A process by which new words and inflections are created based on regularities in the form of existing ones.
- Analogy is a literary technique in which two unrelated objects are compared for their shared qualities.

These are some people – like teachers, professors, and technical writers – who explain difficult ideas for a living. It is a tough job. One way to make it easier is to draw analogies to things your readers or students are already familiar with. For ex: a biology teacher might explain the immune system by saying, 'what policeman do in a town, white blood cells do inside the body.

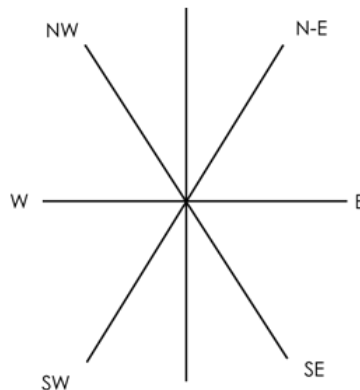
Types of Analogy

- (i) Number Analogy
- (ii) Letter Analogy
- (iii) Word Analogy

DIRECTION SUMMARY

As we all know, there are four main directions North, South, East and West. Apart from these, there are four cardinal directions, they are:

- North-East
- North-West
- South-East
- South-West



Direction is a part of Verbal Reasoning. The questions come under this topic are commonly based on direction of movement and the distance travelled by the person. If the person takes right turn then he is moving in clockwise direction and if takes left turn then moving in anti-clockwise direction. In questions a person is moving in different directions, clockwise or anti-clockwise direction and covered a particular distance, you must find out either the final direction of the person or the distance between the starting point and the ending point.

Another pattern on which direction questions based is Sunrise and Sunset. On sunrise, the shadow of the person is in west direction whereas on sunset, shadow is in east direction. On sunrise, if a person is facing north, then his shadow is towards his left and if facing south, then towards right. On the other hand, on sunset, if a person is facing north then his shadow is towards right and if facing south, then towards left.

In exams, direction questions are not normally very difficult but the advance level questions of this topic may have some complexity.

CODING-DECODING

Coding-Decoding is one of the important topics of Reasoning. Coding is a method of transmission of signals or messages between sender and receiver, it is done confidentially, especially for security reasons so that the third person cannot understand, comprehend, or decoded the sent message. The coded message can be decoded or decrypted by the receiver as he knows the pattern or method as how to interpret the message.

Now the question arises that why a student needs to study the chapter Coding-Decoding. So, the answer for this question is that Coding-Decoding is taught to the students to check or test their abilities to decrypt the pattern, which is applied on coded message, break the code, and come out with the real message.

➤ **Importance of Coding-Decoding:**

It is used in:

- (a) Alphabet Analogy
- (b) Alphabet Classification
- (c) Alphabet Series

Types of Coding-Decoding:

➤ **Word Coding-Decoding:**

In word coding-decoding, the original alphabets of word are replaced by certain different alphabets according to some specific rule.

➤ **Number Coding-Decoding:**

In number coding-decoding, alphabets are replaced by according to their place values, it may be Direct Place Value or Reverse Place Value. For example, 'A' has a direct place value '1' and reverse place value '26'.

➤ **Symbol Coding-Decoding:**

In symbol coding-decoding, analysis is done according to the given word. The letters or alphabets of the given word are replaced by certain symbols like β , ©, π , % etc.

ALPHABET TEST

Basic Concepts & Tricks to Alphabet Test: In this type, the question asked are based on finding the place of an English letter to the left or right of another English letter in the alphabetical order. Sometimes the Question are based on finding the number of English letter(s) between two different English letters.

This type of question varies on the arrangement of alphabetical order. It can be Backward, first half backward, second half backward, multiple letter segments in changed order etc. Some of the question asked are based on finding the middle letter of two specified letters and in some questions, it is asked that which letters do not change their place after alphabet arrangement.

BLOOD RELATION

Problems on Blood Relation involve analysis of certain blood relations. In these types of problem, you should give proper attention to find out the correct relation.

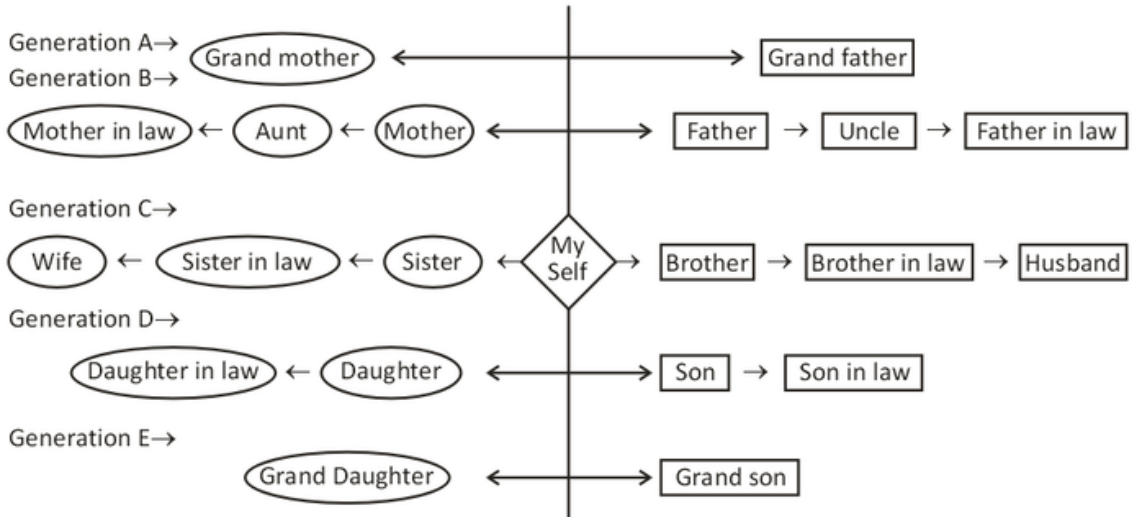
Some of the blood relation which are generally used in the question are given below in tabular form:

Mother's or father's son	Brother
Mother's or father's daughter	Sister
Father's brother	Uncle
Father's sister	Aunt
Father's Father	Grand father
Father's mother	Grand mother
Mother's brother	Maternal Uncle
Mother's Sister	Maternal Aunt
Son's wife	Daughter in law
Daughter's Husband	Son-in-law
Husband's or wife's brother	Brother-in-law
Husband's or wife's sister	Sister-in-law
Brother's son	Nephew
Brother's daughter	Niece
Sister's husband	Brother-in-law
Brother's wife	Sister-in-law
Grandson's daughter	Great Grand Daughter
Granddaughter's daughter	Great Grand Daughter
Mother's father	Maternal Grand Father
Mother's Mother	Maternal Grand Mother

Note:

- If in a question it is not mentioned about paternal or maternal. By default, we consider paternal type.
- We cannot determine the gender of a person by name.
- Male are represented by (square) or + (plus) sign and female are represented by (circle) or 0 (minus) sign.

GENERATION TREE:



SYLLOGISM

A syllogism is a form of deductive reasoning consisting of a major premise, a minor premise, and a conclusion. When one makes a conclusion from a general statement or premise and forms a specific conclusion, it takes the form of deductive reasoning, as the specific conclusion is deduced from the general statement.

Syllogisms can be solved in many ways, the most frequently used method being Venn diagrams. Venn diagrams show all possible and hypothetically logical relations between a collection of finite and infinite statements. In case of an overlap of the diagrams, it means that an object comes under two or more categories of statements.
