

Pre- class notes, Series & Family Relationship

Types of question asked:-

NUMBER SERIES

- a. Prime number Series:
Ex. 2, 3, 5, 7, 11, 13, ...The given series is prime number series. The next prime number is 17.
- b. Difference Series:
Ex. 2, 5, 8, 11, 14, 17,..., 23.The difference between the numbers is 3. ($17 + 3 = 20$)
- c. Multiplication Series:
Ex. 2, 6, 18, 54, 162,..., 1458.The numbers are multiplied by 3 to get next number. ($162 \times 3 = 486$)
- d. N^2 Series:
Ex. 1, 4, 9, 16, 25,..., 49,The series is $1^2, 2^2, 3^2, 4^2, 5^2, \dots$ the next number is $6^2 = 36$
- e. $n^2 - 1$ Series:
Ex 0, 3, 8, 15, 24, 35, 48,..., The series is $1^2 - 1, 2^2 - 1, 3^2 - 1, 4^2 - 1, \dots$ The next number will be $8^2 - 1 = 63$
- f. $n^2 + 1$ Series:
Ex. 2, 5, 10, 17, 26, 37,..., 65., The series is $1^2 + 1, 2^2 + 1, \dots$ The next number will be $7^2 + 1 = 50$
- g. $n^2 + n$ Series (or) $n^2 - n$ Series:
Ex. 2, 6, 12, 20,..., 42., The series is $1^2 + 1, 2^2 + 2, 3^2 + 3 \dots$ The next number = $5^2 + 5 = 30$

LETTER SERIES:-

In these types of problems a series of the letters of alphabet will be given which follow a pattern or a sequence. The letter series mainly consists of skipping of the letters. To solve these types of problems, assign numbers 1 to 26 to the letters of the alphabet. In some cases it is useful to assign the numbers in the reverse order.

A very important fact about the position of any alphabet is that both the sum of forward position and reverse position for any alphabet is always constant and equal to 27. Such as Sum of both positions of H is ($8 + 19 = 27$) or for W is ($23 + 4 = 27$).

We can also remember the relative positions of these alphabets by just remembering the word EJOTY.

Letters E J O T Y ,

Position 5^{th} , 10^{th} , 15^{th} , 20^{th} , 25^{th}

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Types of question:

a. One Letter Series:

Eg - A, B, D, G, K, The series is + 1, + 2, + 3 etc. First no letter is skipped, then 1, 2, 3 etc. letters are skipped to get next letter. Skip 4 letters after 'K' to get P.

b. Two Letter Series:

The first letters of the series follow one logic and the second letters follow another logic. Also, the first two letters, the next two letters and so on follow a logic.

Ex. AM, BN, CO, DP, EQ, ..., The first letters are A, B, C, D, E, F and the second letters are M, N, O, P, Q and R

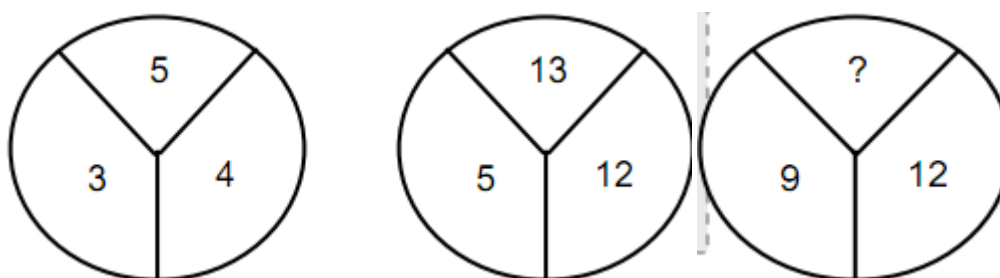
c. Three Letter Series:

This sequence consists of 3 letters in each term. The first letters follow one logic, the second letters follow another logic and the third letters follow some other logic, (or the same logic in all the three cases)

Eg- MAB, NEC, OIE, POG, ... The first letters form a series of M, N, O, P, Q etc. The second letters form Vowels; the third letters form prime number series (if numbers are assigned to letters)

Inserting the Missing Character:-

In these types of questions some geometrical figures will be given. The geometrical figures will be divided and subdivided into a number of parts, each part is filled with a number or a letter except one part. The numbers or the letters in the figures have certain pattern. The objective is to identify the pattern and find the missing number or letter. **Example-**



$$\sqrt{3^2 + 4^2} = 5, \sqrt{5^2 + 12^2} = 13, \text{ The missing number} = \sqrt{9^2 + 12^2} = 15$$

Questions Family Relationships:-

Problems of these types involve analysis of certain blood relations & then inferring on the basis of the given information.

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Useful Relationships:-

- a. Mother's or father's son- Brother
- b. Mother's or father's Daughter - Sister
- c. Mother's or father's Sister - Aunt
- d. Mother's or father's Mother- Grand mother
- e. Mother's or father's Father - Grand Father
- f. Son's wife - daughter in law
- g. Daughter's husband – Son in law
- h. Brothers son - Nephew
- i. Brother Daughter – Niece
- j. Uncle or Aunt's son or daughter - Cousin
- k. Grandfather's only daughter in law- Mother
- l. Grandfather's Son – Father Or Uncle

Suggested method to solve question on Family Relationship:

In this type question, established relationship with in a whole family & not between only two people. For this, one should draw a family tree. Suggested method of drawing family tree.

Drawing a family tree:

- a. Vertical or diagonal lines should be used to represent parent-child relationships.
- b. A double horizontal line (*Like* \Leftrightarrow) should be used to represent marriages
- c. A dashed line should be used to represent brother or sister relationships.
- d. Put + sign before someone who is a male & a (-) sign before someone who is a female
- e. Whenever something is not known put ? mark symbol before it.

Question on Code relationships:-

Question type-If

P&Q means P is the father of Q.

P*Q means P is the sister of Q.

P+Q means P is the brother of Q.

P-Q means P is the mother of Q.

P%Q means P is the son of Q.

P=Q means P is the daughter of Q.

Then which of the following means that X is the nephew of Z?

- a) $X - Y \% Z$ b) $X + Y * Z$ c) $X \% Y - Z$ d) $X \% Y * Z$

Steps To solve such problem,

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- a. Eliminate all wrong choices by using (a) Gender Identification (b) Checking generation Gap
- b. Draw family tree for the remaining choices & pick correct answer.