SSC-JE
Staff Selection Commission
Junior Engineer

General Intelligence & Reasoning

Also useful for various Public Sector Examinations
& other Competitive Examinations

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Staff Selection Commission-Junior Engineer has always been preferred by Engineers due to job stability. SSC-Junior Engineer examination is conducted every year. MADE EASY team has deeply analyzed the previous exam papers and observed that a good percentage of questions are repetitive in nature, therefore it is advisable to solve previous years papers before a candidate takes the exam.

The SSC JE exam is conducted in three stages as shown in table given below.

<table>
<thead>
<tr>
<th>Papers</th>
<th>Subject</th>
<th>Maximum Marks</th>
<th>Duration</th>
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<tr>
<td><strong>Stage 1:</strong> Paper-I : Objective type (Computer Based Test)</td>
<td>(i) General Intelligence &amp; Reasoning</td>
<td>50 Marks</td>
<td>2 hours</td>
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<td></td>
<td>(ii) General Awareness</td>
<td>50 Marks</td>
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<td>(iii) General Engineering : Technical Stream</td>
<td>100 Marks</td>
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<td><strong>Stage 2:</strong> Paper-II Conventional Type</td>
<td>General Engineering : Technical Stream</td>
<td>300 Marks</td>
<td>2 hours</td>
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In the first edition MADE EASY has taken due care to provide complete solution with accuracy. Apart from Staff Selection Commission-Junior Engineer, this book is also useful for Public Sector Examinations and other competitive examinations for engineering graduates.

I have true desire to serve student community by providing good source of study and quality guidance. I hope this book will prove as an important tool to succeed in SSC-JE and other competitive exams. Any suggestion from the readers for improvement of this book is most welcome.

With Best Wishes

B. Singh
CMD, MADE EASY
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SSC: Junior Engineer

General Intelligence & Reasoning

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General Intelligence & Reasoning

Section A

Comprehensive Theory with Solved Examples
LEARNING Objectives

After completion of this chapter, you should have a thorough understanding of the following:

- Word analogy
- Number analogy
- Methods of solving
- Kinds of questions which are asked in SSC-JE
- Letter analogy
- Mixed analogy

INTRODUCTION to the topic

Questions on analogy test the ability of a candidate to understand the relationship between two given elements and apply the same relationship to find the one asked in the question.

With respect to preparation for the SSC-JE Examination, Analogies has been seen to be one of the most important topics in the General Intelligence and Reasoning part of SSC-JE with a total of 9 questions in the last conducted exam. This chapter will give you a clear understanding of the definitions and the concepts, and help you develop a keen insight about different kinds of analogies asked in the SSC-JE.

TYPE OF QUESTIONS

Question asked from this topic are based on concepts:

- Questions based on related Words
- Questions based on related Set of numbers
- Questions based on related English alphabets
- Miscellaneous Questions
ANALOGIES OR SIMILARITY

If the relationship between one pair of words is similar to another pair of words then we say that both the pair of words are analogous to each other. In simple words, the relationship between two words must be same for other words associated with them too.

NOTE: In this section we have to analyze the relationship between two given pairs and find the relationship between other two pairs among which one is given in the question and other one will be present in the options.

TYPES OF ANALOGY

Analogy can be categorized into following two types:
- Words Analogy
- Number Analogy

Word analogy again can be reclassified into following two sections:
- Meaningful Words
- Non-Meaningful Words

1. Kinds of Word Relationship
First find the relationship between the two given words and once you find that, go for finding the similar relationship word for the asked word from the given options.

2. Opposite Relationship
If two given pairs are opposite in meaning to each other, similar kind of relationship has to be chosen for the question pair from the given options.

3. Synonymous Relationship
The two words of the question pairs are similar in meaning and that relationship has to be found among the words given in the answer choice word pair.

4. Cause and Effect
Here if one word will be the cause then other will be its effect.

5. Worker and Article Relationship
Here the relationship is about the maker or producer with its production.

   For example: Writer : Novel

6. Worker and Tool Relationship
Relationship is among a particular class of people and the tools used by them.

   For example: Student : Pen

7. Tool and Object Relationship
It describes the relationship between the tool and its corresponding object.

   For example: Paint : Wall

8. Number Analogy
There will be certain relationship among the first two numbers. We have to find that and accordingly solve the question.

Ex. 1 4 : 8 : : 16 : ?
(a) 21 (b) 19
(c) 32 (d) 51

Sol. (c)
Here either 4 + 4 = 8 or 4 × 2 = 8. Following the similar fashion, our answer should be either 16 + 4 = 20 or 16 + 16 = 32.
As 20 is not there but 32 is there, hence it is the correct answer.

SOLVED EXAMPLES

Q.1 In the following question, select the related word from the given alternatives.

Square : Four : : ? : ?
(a) Rectangle : Five (b) Hexagon : Seven
(c) Rhombus : Six (d) Triangle : Three

Sol. (d)
Square has four sides.
Similarly, triangle has three sides.

Q.2 In the following question, select the related letter pair from the given alternatives.

TRAP : YWFU : : FROG : ?
(a) KHLG (b) KWTL
(c) WKLH (d) FGHL
Q.3 In the following question, select the related letters from the given alternatives.

**FAN : MZU : : LIP : ?**

(a) FGA  
(b) KRO  
(c) ANP  
(d) TSQ

**Sol. (b)**

F : : 27 - 6 = 21  
K : : 27 - 12 = 15

Q.4 In the following question, select the related number from the given alternatives.

**46 : 24 : : 54 : ?**

(a) 30  
(b) 24  
(c) 20  
(d) 36

**Sol. (c)**

46 : : 4 x 6 = 24  
54 : : 5 x 4 = 20

Q.5 In the following question, select the related number from the given alternatives.

**11 : 24 : : 23 : ?**

(a) 42  
(b) 36  
(c) 54  
(d) 58

**Sol. (b)**

11 + 13 = 24  
23 + 13 = 36

Q.6 Bird : Wing : : Fish : ?

(a) Gill  
(b) Fin  
(c) Tail  
(d) Scale

**Sol. (b)**

Wing is the organ for movement of Bird. Similarly, Fin is the organ for movement of Fish.

Q.7 48 : 122 :: 168 : ?

(a) 215  
(b) 225  
(c) 290  
(d) 292

**Sol. (c)**

As,

48 : : \((7^2 - 1)\)  
122 : : \((7 + 4)^2 + 1\)

Q.8 Touch is related to feel, in the same way Hear is related to

(a) Listen  
(b) Noise  
(c) Loudness  
(d) Vibrate

**Sol. (a)**

As, touch and feel are synonyms, similarly hear and listen are synonyms.

Q.9 Dictionary : Words : : ? : Date

(a) Day  
(b) Girlfriend  
(c) Almanac  
(d) Plam

**Sol. (c)**

As, Dictionary contains words, similarly Almanac contains date.

Q.10 East : North-West : : North : ?

(a) West  
(b) South-East  
(c) North-East  
(d) South-West

**Sol. (d)**

As, we move 135° anticlockwise from East direction we get North-West direction.  
Similarly, when we move 135° anticlockwise from North direction we get South-West direction.

Q.11 27 : 9 :: 125 : ?

(a) 5  
(b) 12  
(c) 25  
(d) 45

**Sol. (c)**

As, 27 : : \(3^3\)  
9 : : \(3^2\)  
125 : : \(5^3\)

Q.12 14 : 49 :: 18 : ?

(a) 56  
(b) 59  
(c) 63  
(d) 85
Analogies or Similarity

Sol.  (c)
As, \((14 + 2) \times 7 = 7 \times 7 = 49\)
Similarly, \((18 + 2) \times 7 = 9 \times 7 = 63\)

Q.13
The numbers in each group are related in a certain way. Choose the correct number from among the alternatives that will replace the question mark.

\[
(3 \ [9] 6) (7 \ [25] 12) (11 \ [?] 15)
\]
(a) 26  (b) 16  (c) 32  (d) 36

Sol.  (b)
As, \(6 - 3 = 3 \Rightarrow 3^2 = 9\) (Middle number)
and \(12 - 7 = 5 \Rightarrow 5^2 = 25\) (Middle number)
Similarly, \(15 - 11 = 4 \Rightarrow 4^2 = 16\) (Middle number).

PRACTICE QUESTIONS

Q.1 In the following question, select the related word pair from the given alternatives.

Rain : Clouds : : ? : ?
(a) Rice : Food  
(b) Grey : Colour  
(c) Heat : Sun  
(d) Snow : Mountains

Q.2 In the following question, select the related word from the given alternatives.

Cactus : Plant : : Rice : ?
(a) Basmati  
(b) Crop  
(c) White  
(d) Rabi

Q.3 In the following question, select the related letters from the given alternatives.

LERI : PJVN : : MONT : ?
(a) WRTY  
(b) QTRY  
(c) RITY  
(d) RQYB

Q.4 In the following question, select the related letters from the given alternatives.

SAT : WEX : : MET : ?
(a) AQI  
(b) IYX  
(c) FHY  
(d) QIX

Q.5 In the following question, select the related number from the given alternatives.

38 : 53 : : 53 : ?
(a) 72  
(b) 68  
(c) 79  
(d) 87

Q.6
In the following question, select the related number from the given alternatives.

9 : 81 : : 11 : ?
(a) 78  
(b) 93  
(c) 121  
(d) 146

Q.7
In the following question, select the related word pair from the given alternatives.

Car : Tyre : : ? : ?
(a) House : Room  
(b) Labour : Salary  
(c) Camera : Photo  
(d) House : People

Q.8
In the following question, select the related letters from the given alternatives.

ROCK : VSGO : : BEL
(a) AKLM  
(b) FIPX  
(c) FCXT  
(d) ERPX

Q.9
In the following question, select the related letters from the given alternatives.

LS : HO : : TQ : ?
(a) FM  
(b) PM  
(c) CL  
(d) TF

Q.10
In the following question, select the related number from the given alternatives.

11 : 121 : : 15 : ?
(a) 289  
(b) 343  
(c) 225  
(d) 217

Q.11 Find the 2nd number of the 2nd pair:

9876 : 7654 : : 4673 : ?
(a) 2637  
(b) 2451  
(c) 235  
(d) None of these

Q.12
Find a pair that is similar to 3 : 15

(a) 1 : 2  
(b) 5 : 45  
(c) 11 : 65  
(d) 2 : 14

Q.13
Rca : aCR : : Rrb : ?
(a) JBr  
(b) bRR  
(c) RRp  
(d) McA

Q.14
3754 : 5976 : : 7563 : ?
(a) 2857  
(b) 9785  
(c) 2367  
(d) None of these

Q.15
Find a pair that is similar to: 11 : 77
(a) 1 : 2  
(b) 13 : 143  
(c) 11 : 65  
(d) 2 : 14
ANSWER KEY

Practice Questions

1. (c)  2. (b)  3. (b)  4. (d)  5. (b)
6. (c)  7. (a)  8. (b)  9. (b)  10. (c)
11. (b) 12. (a) 13. (b) 14. (b) 15. (b)

Solutions of Practice Questions

1. (c)
   Clouds give Rain. Similarly, Sun gives Heat.

2. (b)
   Cactus is a plant. Similarly, Rice is a crop.

3. (b)
   \[ \begin{align*}
   L &: +4 & P \\
   E &: +5 & J \\
   R &: +4 & V \\
   I &: +5 & N
   \end{align*} \]

4. (d)
   \[ \begin{align*}
   S &: +4 & W \\
   A &: +4 & E \\
   T &: +4 & X
   \end{align*} \]

5. (b)
   \[ \begin{align*}
   38 &: 53 \\
   38 + 15 &: 53 + 15
   \end{align*} \]

6. (c)
   \[ \begin{align*}
   9 &: 81 \\
   9^2 &: 11^2
   \end{align*} \]

7. (a)
   Cars have Tyres.
   Similarly, Houses have Rooms.

8. (b)
   \[ \begin{align*}
   R &: +4 & V \\
   O &: +4 & S \\
   C &: +4 & G \\
   K &: +4 & O
   \end{align*} \]

9. (b)
   \[ \begin{align*}
   L &: -4 & H \\
   S &: -4 & O \\
   11 &: 121 \\
   11^2 & : : & 15 &: 225 \\
   15^2
   \end{align*} \]

10. (c)
    The relationship between 1st & 2nd group is \( x : (x - 2222) \). So the correct answer is (b).

11. (b)
    The relationship between 1st & 2nd group is \( x : (x + 2222) \). So the correct answer is (b).

12. (a)
    The 1st number is multiplied by the next prime number to obtain the 2nd number. So the correct answer is 1:2.

13. (b)
    The order of the letters of the 1st group is reversed and the middle small letter is replaced by a capital letter to obtain the 2nd group. So the correct answer is option (b).

14. (b)
    The relationship between 1st & 2nd group is \( x : (x + 2222) \). So the correct answer is (b).

15. (b)
    The 1st number is multiplied by the previous prime number to obtain the 2nd number. So the correct answer is 13: 143.
LEARNING Objectives

After completion of this chapter, you should have a thorough understanding of the following:

- Jumbled up description
- Relation puzzle
- Coded relations
- Kinds of questions which are asked in SSC-JE
- Methods of solving

INTRODUCTION to the topic

In questions based on Relationships, the candidate should be clear of all the relation patterns that can exist between any two individuals. These type of questions are given mainly to test one's relationship ability.

With respect to preparation for the SSC-JE Examination, Relationships has been seen to be one of the important topics in the General Intelligence and Reasoning part of SSC-JE with a total of 2 questions in the last conducted exam. This chapter will give you a clear understanding of the definitions and the concepts, and help you develop a keen insight about different kinds of Relationships asked in the SSC-JE.

TYPE OF QUESTIONS

Question asked from this topic are based on concepts:

- Jumbled up description
- Relation puzzle
- Coded relations
- Question based on English alphabet problem
- Question based on word problem
BLOOD RELATIONS

In the exams, the success of a candidate in the questions on blood relations depends upon his knowledge about various blood relations. The easiest and non-confusing way to solve these problems would be to draw a family tree diagram and increase the levels in the hierarchy as shown below:

1\text{st} stage:
- Grand Parents—Grand father, Grand mother, Grand uncle, Grand aunt.

2\text{nd} stage:
- Parents & in laws—Father, Mother, Uncle, Aunt, Father-in-law, Mother-in-law.

3\text{rd} stage:

4\text{th} stage:

5\text{th} stage:
- Grand children—Grand son, Grand daughter.

STANDARD TABLE LIST

Paternal Relation

<table>
<thead>
<tr>
<th>Father's father</th>
<th>Grandfather</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father's mother</td>
<td>Grandmother</td>
</tr>
<tr>
<td>Father's sister</td>
<td>Aunt</td>
</tr>
<tr>
<td>Father's brother</td>
<td>Uncle</td>
</tr>
<tr>
<td>Children of uncle or aunt</td>
<td>Cousin</td>
</tr>
</tbody>
</table>

Maternal Relation

<table>
<thead>
<tr>
<th>Mother's mother</th>
<th>Maternal grand mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's father</td>
<td>Maternal grand father</td>
</tr>
<tr>
<td>Mother's sister</td>
<td>Aunt</td>
</tr>
<tr>
<td>Mother's brother</td>
<td>Uncle</td>
</tr>
<tr>
<td>Children of uncle /aunt</td>
<td>Cousin</td>
</tr>
</tbody>
</table>

Relation based on Generation

Grandfather, Grandmother

\[\downarrow\]

Mother, Father, Uncle, Aunt

\[\downarrow\]

Sister, sister in law, brother, brother in law

\[\downarrow\]

Son, daughter, nephew, niece

Relation (In laws)

<table>
<thead>
<tr>
<th>Son's wife</th>
<th>Daughter in law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daughter's husband</td>
<td>Son in law</td>
</tr>
<tr>
<td>Sister's husband</td>
<td>Brother in law</td>
</tr>
<tr>
<td>Husband's brother/wife's brother</td>
<td>Brother in law</td>
</tr>
<tr>
<td>Husband's sister</td>
<td>Sister in law</td>
</tr>
<tr>
<td>Husband's father/wife's father</td>
<td>Father in law</td>
</tr>
<tr>
<td>Husband's mother/wife's mother</td>
<td>Mother in law</td>
</tr>
<tr>
<td>Husband's sister/wife's sister</td>
<td>Sister in law</td>
</tr>
</tbody>
</table>

Relation with Younger Generation

<table>
<thead>
<tr>
<th>Brother's son/sister's son</th>
<th>Nephew</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brother's daughter/sister's daughter</td>
<td>Niece</td>
</tr>
</tbody>
</table>

1. Relation between variables are given

In this type relation between some variables is given and we try to decode solution from it.

In this type of questions let’s take help of the symbols for sake of convenience.

Symbol table:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-B</td>
<td>A is sibling of B</td>
</tr>
<tr>
<td>A \rightarrow B</td>
<td>B is next generation of A</td>
</tr>
<tr>
<td>≡</td>
<td>Husband Wife</td>
</tr>
<tr>
<td>A</td>
<td>A is male</td>
</tr>
<tr>
<td>A</td>
<td>A is female</td>
</tr>
</tbody>
</table>

2. Jumbled-up Descriptions

In this type, a round about description is given in the form of certain small relationships and candidate is required to analyse the whole chain of relations and then find out the direct relationship between the concerned persons.

**Ex.1** Pointing to a man in a photograph a man said to a woman “his mother is the only daughter of your father”. How is the woman related to the man in the photograph.

(a) Sister    (b) Mother
(c) Wife      (d) Daughter

**Sol.** (b)

The only daughter of the woman’s father is the woman herself, and hence the man in the photograph is her son. Therefore the woman is the mother of the man in the photograph.
Ex.2 Pointing to a man in photograph a woman said “The father of his brother is the only son of my grand father”. How is the woman related to the man in photograph.

(a) Sister (b) Mother-in-law (c) Mother (d) Stepmother

Sol. (a)

The only son of woman’s grand father is the father of woman and the father of the man’s brother is the father of the man. On combining these two information together single information emerges that the man’s father is the woman’s father. Hence woman is sister of the man in the photograph.

3. Relation Puzzle

In this type, mutual blood relations of more than two persons are mentioned. Candidate has to analyse the information and find the required relation.

Ex.3 B is mother of A and wife of C. D is son of C. How D is related to B?

(a) Father (b) Son (c) Uncle (d) Data inadequate

Sol. (b)

Let’s chart out family tree as per our symbols.

**Step 1:** B is mother of A and wife of C

```
  B  
 /   
A   C
```

**Step 2:** D is son of C

```
  C  
 /   
D
```

And now merge the two diagrams

```
  B  
 /   
A   C
```

Clearly, D is son of B

Ex.4 Laxmi and Meena are Rohan’s wives. Shalini is Meena’s stepdaughter. How is Laxmi related to Shalini?

(a) Sister (b) Mother-in-law (c) Mother (d) Stepmother

Sol. (c)

Shalini is Meena’s stepdaughter Means Shalini is the daughter of other wife of Rohan, so Shalini is a daughter of Laxmi or Laxmi is mother of Shalini.

SOME STANDARD CODING TECHNIQUE

1. **Proper noun should always be denoted by capital letters**

   E.g. John, Merry and Paul can be codes as John – J, Merry – M, Paul – P

2. In questions where the sex of proper noun is crucial to the solving of questions, you can denote the female by under lining the capital letter used

   ex. → Merry is a beautiful girl. Merry – M

   ex. → Sheena is the only girl student in her class

   Sheena – S

3. **Relationship:**

   (a) Is the Son of

   ex. → Ram is the son of Mr. Pratap → P R

   (b) Is the daughter of

   ex. → Sweta is daughter of Mr. Pratap → P S

   (c) Is the Parent of

   ex. → A is the parent of B → A B or B A

   (d) Is the spouse of

   ex. → A is spouse of B → A B or B A

   [Note: Here sex of A & B is not mentioned]

   ex. → Seema is wife of Rahul → R S

   ex. → Priya is wife of Rajesh R P

   [Note: It is better to write male on the left & female on the right hand side to avoid any confusion]

   (e) Is the sibling of

   Ex. → A is sibling of B

   1. A .. B or (A & B are brothers)

   2. A .. B or (A is sister of B)

   3. A .. B or (B is sister of A)

   4. A .. B or (A & B are sisters)

   (f) Grand father, Grand son relation

   Ex. → Ramesh & Param are the two sons of Mr. Shiv Kumar, who is the son of Mr. Sundarlal

   Su

   → Sk

   R .. P

   (Note: Shiv Kumar and Sundarlal are coded as Sk and Su to avoid any confusion)

   (g) Where the sex of a person is not confirmed write it in a box

   like Q is the only son of S

   (Here Q is male but sex of Q S is not mentioned)
SOLVED EXAMPLES / Blood Relationship

TYPE-1 : Direct Questions

Q.1 B is mother of A and wife of C. D is son of C. How D is related to B?
(a) Father (b) Son (c) Uncle (d) Data inadequate

Sol. (b) Let’s chart out family tree as per our symbols.

Step 1: B is mother of A and wife of C

Step 2: D is son of C

And now merge the two diagrams (merge)

Clearly, D is son of B

Q.2 B is daughter of A. D is brother of C, C is daughter of B. How C is related to A?
(a) Grand daughter (b) Daughter (c) Niece (d) Cousin

Sol. (a) Let’s us make symbolic diagram

Step 1:

Step 2:

Merge:

Clearly, C is grand daughter of A.

Q.3 R went on a trip with his wife P. There he met Q, mother-in-law of P. Q had two daughters T and U. How U is related to R?
(a) Sister-in-law (b) Sister (c) Mother (d) None of the above

Sol. (b) Let’s make symbolic diagram using given information.

Information is R is husband of P. Q is mother in law of P and Q has two daughters U and T.

Step 1:

Step 2:

Step 3:

Step 4:

Thus according to diagram it is clear that U is sister of R.

Q.4 P is father of Q and R is son of T. S is brother of P. If Q is sister of R, how is S related to T?
(a) Brother (b) Husband (c) Brother in law (d) Uncle

Sol. (c) Let’s make flowchart as per our symbols.

Step 1:

Step 2:

Step 3:

Note: Q is daughter of P. R is son of T. Q and R are siblings. So, P and T is a couple. S is T’s husband’s brother, i.e., S is Brother in law of T.
Q.5  C’s mother is sister of B and daughter of A. D is daughter of B and sister of E. How is A related to E?
(a) Grand Parent
(b) Grand Father
(c) Grand Mother
(d) Cannot be determined

Sol.  (a)

Step 1:

```
    A
   /|
  /  |
/    |
C    B
```

Step 2:

```
    B
   /|
  /  |
/    |
D    E
```

Merge:

```
    A
   /|
  /  |
/    |
C    B
   \  |
    D--E
```

A is grand parent of E. But gender of A and E cannot be decided.

**TYPE-2 : Round-About Questions**

In this type one or two persons express their relationship through conversation.

Q.6  Pointing on Suresh, Sita said, “His father’s only son is my son.” How Sita is related to Suresh?
(a) Sister
(b) Aunt
(c) Daughter
(d) Mother

Sol.  (d)

Sita said that Suresh’s father’s only son is her son. Here, Suresh father’s only son will be Suresh. If Suresh is also son of Sita, Sita will be mother of Suresh.

Q.7  Rahul introduces Rooma as the daughter of the only son of my father’s wife. How is Rooma related to Rahul?
(a) Niece
(b) Sister
(c) Daughter
(d) Cousin

Sol.  (c)

Break the given sentence from back. In the view of Rahul,
My father’s wife is- mother
Only son of mother is - himself i.e. Rahul
Daughter of Rahul is- daughter.
So, answer is daughter.

**TYPE-3 : Symbolic Questions**

In this type a symbol is used to denote a relationship between two persons. Symbols are decoded and solution can be found. Consider following examples.

Q.8  If X+Y means X is brother of Y; X–Y means X is mother of Y. X%Y means X is sister of Y, then which of the following would mean A is uncle of B?
(a) A – X + B
(b) A + X – B
(c) A – B + X
(d) A%X – B

Sol.  (b)

We have been given relation between A and B.
Note A is uncle of B means A is brother of mother of B. According to this A + X – B is the answer.

Q.9  Given, A + B means A is sister of B; A – B means A is mother of B; A × B means A is wife of B. Then what is meaning of X + Y – Z × U?
(a) X is sister of Y
(b) Y is mother of Z
(c) Z is wife of U
(d) All of the above

Sol.  (d)

X + Y implies, X is sister of Y
Y – Z implies, Y is mother of Z
Z × U implies, Z is wife of U
We can family tree as

```
    X---Y
     |
     Z=U
```

Q.10  If A + B means A is the mother of B; A × B means A is the father of B; A % B means A is the brother of B and A # B means A is the sister of B then which of the following means Z is the son of X?
(a) X + Y # Z # W
(b) X # Y + Z % W
(c) X × Y % Z # W
(d) X × Y % Z % W

Sol.  (d)

X × Y = X is the father of Y
Y % Z = Y is the brother of Z
Z % W = Z is the brother of W.
Therefore Z is the son of X.

Q.11 Four persons A, B, C and D consisting of two married couples are in a group. Both the women are shorter than their respective husbands. A is the tallest among the four. C is taller than B. D is B's brother.

In this context, which one of the following statements is not correct?
(a) All four have family ties.
(b) B is the shortest among the four.
(c) C is taller than D.
(d) A is B's husband.

Sol. (c)

Given, A is tallest among the four. Hence, A is male, D is also male, as D is the brother of B. Then, B and C are females. D is the husband of C. D is shorter than A and is taller than B.
Thus, B is the shortest, from above only (c) is incorrect.

Q.12 Consider the following statements:
1. A man had a wife, two sons and daughters in his family
2. The daughters were invited to a feast and the male members of the family went out to take part in a picnic
3. The man's father did not return from his work.
Which of the following statement is true?
(a) Only the man's wife was left at home.
(b) It is likely that the man's wife was left at home.
(c) None was left at home.
(d) More than one person was left at home.

Sol. (b)

Since, everyone is engaged except wife of man. So, it is likely that Man's wife was left at home. However, one can not be sure therefore option (a) is not appropriate in comparison to (b).

Directions (Qs. 13 to 15): A, B, C, D and E are members of the same family. There are two fathers, two sons, two wives, three males and two females. The teacher was the wife of a lawyer who was the son of a doctor. E is not male, neither a wife of a professional. C is the youngest person in the family and D is the eldest. B is a male.

Q.13 How is D related to E?
(a) Husband (b) Son (c) Father (d) Wife

Sol. (a)

We have

- E is not male, neither wife of professional
- Doctor's husband is not professional and E is doctor
- D is eldest ⇒ D is husband of E and eldest
- C is youngest ⇒ C is grandchild of D
- There are three male and two females in family ⇒ C is male
- B is male ⇒ B is lawyer ⇒ A is teacher

Q.14 Who are the females in the group?
(a) C and E (b) C and D (c) E and A (d) D and E

Sol. (c)

Q.15 Whose wife is the teacher?
(a) C (b) D (c) A (d) B

Sol. (d)

Q.16 Consider the following relationships among members of a family of six persons A, B, C, D, E and F:
(i) The number of males equals that of females.
(ii) A and E are sons of F.
(iii) D is the mother of two, one boy and one girl.
(iv) B is the son of A.
(v) There is only one married couple in the family at present.

Which one of the following inferences can be drawn from the above?
(a) A, B and C are all females.
(b) A is the husband of D.
(c) E and F are children of D.
(d) D is the daughter of F.

Sol. (b)

(i) Number of male = Number of females = 3

(ii) F

(iii)

(iv)

(v)

Only one couple ⇒
Therefore, A is husband of D.

Q.17 Consider the following:
A + B means A is the son of B.
A – B means A is the wife of B.
What does the expression $P + R – Q$ mean?

(a) $Q$ is the son of $P$ (b) $Q$ is the wife of $P$
(c) $Q$ is the father of $P$ (d) None of the above

Sol. (c)

Hence, correct answer is 'Q' is father of 'P'.

Q.18 Pointing to a lady, Shabnam said, “She is the daughter of the mother of my brother's father.” Who is the lady to Shabnam?
(a) Grand daughter
(b) Daughter
(c) Sister
(d) Aunt

Sol. (d)

Clearly, the lady is the aunt of Shabnam.

Q.19 C is married to A, sister of D. B is the father of E, who is the son of D. G is the sister of E. How is G related to C?
(a) Nephew
(b) Niece
(c) Sister-in-law
(d) Sister

Sol. (b)

According to the question,
Clearly, G is the niece of C.
Q. 1 Introducing Asha to guests, Bhasker said, “Her father is the only son of my father”. How is Asha related to Bhasker?
   (a) Daughter (b) Mother (c) Sister (d) Niece

Q. 2 Akash said to Mohit “The boy in blue shirt is younger of the two brothers of the daughter of my father’s wife”. How is the boy in blue shirt related to Akash?
   (a) Father (b) Uncle (c) Brother (d) Nephew

Q. 3 Pointing to a man on the stage, Rita said, “He is the brother of the daughter of my husband”. How is the man on the stage related to Rita?
   (a) Son (b) Husband (c) Cousin (d) Nephew

Q. 4 Pointing to a photograph, Vipul said, “She is the daughter of my grand father is only son”. How is Vipul related to the girl in the photograph?
   (a) Father (b) Brother (c) Cousin (d) Data inadequate

Q. 5 A woman introduce a man as the son of the brother of her mother. How is man related to the woman?
   (a) Nephew (b) Son (c) Cousin (d) Data inadequate

Q. 6 Looking at a picture of a man, Harsh said, “His mother is the wife of my father’s son. Brothers and sisters I have none”. At whose picture was Harsh looking?
   (a) His son (b) His cousin (c) His uncle (d) His nephew

Q. 7 A man said to a lady “your mother’s husband’s sister is my aunt. How is the lady related to the man?
   (a) Daughter (b) Grand daughter (c) Mother (d) Sister

Q. 8 If Meena says, “Anita’s father, Raman is the only son of my father-in-law, Mahipal”, then how is Bindu, who is the sister of Anita, related to Mahipal?
   (a) Grand daughter (b) Daughter (c) Sister (d) Niece

Q. 9 Pointing to a girl in the photograph Amar said, “Her mother’s brother is the only son of my mother’s father”. How is the girl’s mother related to Amar?
   (a) Mother (b) Sister (c) Aunt (d) Grand mother

Q. 10 Daya has a brother Amit. Daya is the son of Chandra, Bimal is Chandra’s father. In terms of relationship what is Amit to Bimal?
   (a) Son (b) Grand son (c) Brother (d) Grand father

Q. 11 Rahul’s mother is the only daughter of Monika’s father, how is Monika’s husband related to Rahul?
   (a) Uncle (b) Father (c) Grand father (d) Brother

Q. 12 If (i) M is brother of N (ii) B is brother of N and (iii) M is brother of D then which of the following statements is definitely true?
   (a) N is brother of B (b) N is brother of D (c) M is brother of B (d) D is brother of M

Q. 13 Deepak is brother of Ravi, Rekha is sister of Atul, Ravi is son of Rekha. How is Deepak related to Rekha?
   (a) Son (b) Brother (c) Nephew (d) Father

Q. 14 A is B’s sister, C is B’s mother, D is C’s father, E is D’s mother. Then, how is A related to D?
   (a) Grand mother (b) Grand father (c) Daughter (d) Grand daughter

Q. 15 Given that (i) A is brother of B (ii) C is father of A (iii) D is brother of E (iv) E is daughter of B, then uncle of D is
   (a) A (b) B (c) C (d) D

Q. 16 E is the son of A, D is the son of B, E is married to C, C is B’s daughter. How is D related to E?
   (a) Brother (b) Uncle (c) Father-in-law (d) Brother-in-law

Direction (Qs. 17 to 22): Read the following information carefully and answer the question below it, All the six members of a family P, Q, R, S, T and U are travelling together. Q is the son of R but R is not the mother of Q. P and R are a married couple. T is the brother of R. S is the daughter of P. U is the brother of Q.

Q. 17 How may male members are there in the family?
   (a) 1 (b) 2 (c) 3 (d) 4
Q.18 Who is the mother of Q?
(a) S  (b) U  (c) T  (d) P

Q.19 How many children does P have?
(a) One  (b) Two  (c) Three  (d) Four

Q.20 Who is the wife of T?
(a) P  (b) U  (c) Q  (d) can’t be determined

Q.21 Which of the following is a pair of females?
(a) PT  (b) QS  (c) SU  (d) PS

Q.22 How is U related to S?
(a) Father  (b) Brother  (c) Uncle  (d) can’t be determined

Direction (Qs. 23 to 28): Read the following information carefully and answer the question below it.
A family consists of six members P, Q, R, X, Y and Z. Q is the son of R but R is not mother of Q. P and R are a married couple. Y is the brother of R. X is the daughter of P. Z is the brother of P.

Q.23 Who is the brother-in-law of R?
(a) P  (b) Z  (c) Y  (d) X

Q.24 Who is the father of Q?
(a) R  (b) P  (c) Z  (d) None of these

Q.25 How many children does P have?
(a) One  (b) Two  (c) Three  (d) Four

Q.26 How many female member are there in the family?
(a) One  (b) Two  (c) Three  (d) Four

Q.27 How is Q related to X?
(a) Husband  (b) Father  (c) Brother  (d) Uncle

Q.28 Which is a pair of brothers?
(a) P and X  (b) P and Z  (c) Q and X  (d) R and Y

Direction (Qs. 29 to 31): Read the following information carefully and answer the questions given below it.
P is the son of Q. R, Q’s sister has a son S and daughter T. U is the maternal uncle of S.

Q.29 How is P related to S?
(a) Cousin  (b) Nephew  (c) Uncle  (d) Brother

Q.30 How is T related to U?
(a) Sister  (b) Daughter  (c) Niece  (d) Wife

Q.31 How many nephew does U have?
(a) Nill  (b) One  (c) Two  (d) Three

Q.32 Ranjan is the brother of Sachin and Manick is the father of Ranjan. Jagat is the brother of Priya and Priya is the daughter of Sachin. Who is the uncle of Jagat?
(a) Ranjan  (b) Sachin  (c) Manick  (d) None of these

Direction (Qs. 33 to 34): Read the following information carefully and answer the questions given below it.
(i) A is the father of C  
(ii) E is the daughter of C  
(iii) B is the brother of C  
(iv) G is the spouse of B. H is the father of G.

Q.33 Who is the grandmother of D?
(a) A  (b) C  (c) F  (d) H

Q.34 Who is the son of F?
(a) B  (b) C  (c) D  (d) E

ANSWER KEY
1. (a) 2. (c) 3. (a) 4. (b) 5. (c) 6. (a) 7. (d) 8. (a) 9. (c) 10. (b) 11. (b) 12. (c) 13. (a) 14. (d) 15. (a) 16. (d) 17. (d) 18. (d) 19. (c) 20. (d) 21. (d) 22. (b) 23. (b) 24. (a) 25. (b) 26. (b) 27. (c) 28. (d) 29. (a) 30. (c) 31. (c) 32. (a) 33. (c) 34. (a)
**Solutions of Practice Questions**

1. (a)
   
   \[
   \text{Bhasker's Father} \\
   \text{Father} = \text{Bhasker} \\
   \text{Asha}
   \]
   
   Hence, Asha is Bhasker's daughter.

2. (c)
   
   \[
   \text{Akash father} \\
   \text{Boy in blue shirt} = \text{brother} \\
   \text{Daughter} \\
   \text{Akash}
   \]
   
   Hence brother.

3. (a)
   
   \[
   \text{Rita's husband} \\
   \text{Wife Rita} \\
   \text{Daughter} \\
   \text{Brother}
   \]
   
   Hence person on stage is Rita's son.

4. (b)
   
   \[
   \text{Grand father} \\
   \text{only son} (\text{Vipul's father}) \\
   \text{Vipul} \\
   \text{Daughter}
   \]
   
   Hence Vipul is brother of girl.

5. (c)
   
   \[
   \text{Woman's mother} \\
   \text{Mother's brother} \\
   \text{Woman} \\
   \text{Son} (\text{Man})
   \]
   
   Hence man is woman's Cousin.

6. (a)
   
   \[
   \text{Harsh's father} \\
   \text{Harsh's wife} \\
   \text{Harsh's son}
   \]
   
   Harsh is looking at his son's picture.

8. (a)
   
   Grand daughter

9. (c)
   
   Aunt

10. (b)
    
    Grand son

11. (b)
    
    Father

12. (c)
    
    M is brother of B

13. (a)
    
    Son

14. (d)
    
    Grand daughter

15. (a)
    
    Uncle of D is A

16. (d)
    
    D is brother in law of E.

17. (d)
    
    \[
    \rightarrow Q \text{ is son of } R \\
    \rightarrow R \text{ is not the mother, then } R \text{ is father of } Q \\
    \rightarrow P \text{ and } R \text{ are married couple } R \rightarrow P \\
    \rightarrow T \text{ is brother of } R \rightarrow T \rightarrow R \\
    \rightarrow S \text{ is daughter of } P \rightarrow S \\
    \rightarrow U \text{ is brother of } Q \rightarrow U \rightarrow Q \\
    \]
    
    Complete Solution

23. (b)
    
    \[
    \rightarrow Y \rightarrow R \rightarrow U \rightarrow Z \\
    Q \rightarrow X
    \]

29. (a)
    
    \[
    Q \rightarrow R \rightarrow U \\
    P \rightarrow S \rightarrow T
    \]

32. (a)
    
    \[
    M \\
    R \rightarrow S \\
    P \rightarrow J
    \]

33. (c)
    
    \[
    A \rightarrow E \rightarrow H \\
    C \rightarrow B \rightarrow G \\
    E \rightarrow D
    \]

34. (a)
    
    Here sex of C is not confirmed