



EDUEgypt Program – Analytical and Logical Reasoning Participant's Guide

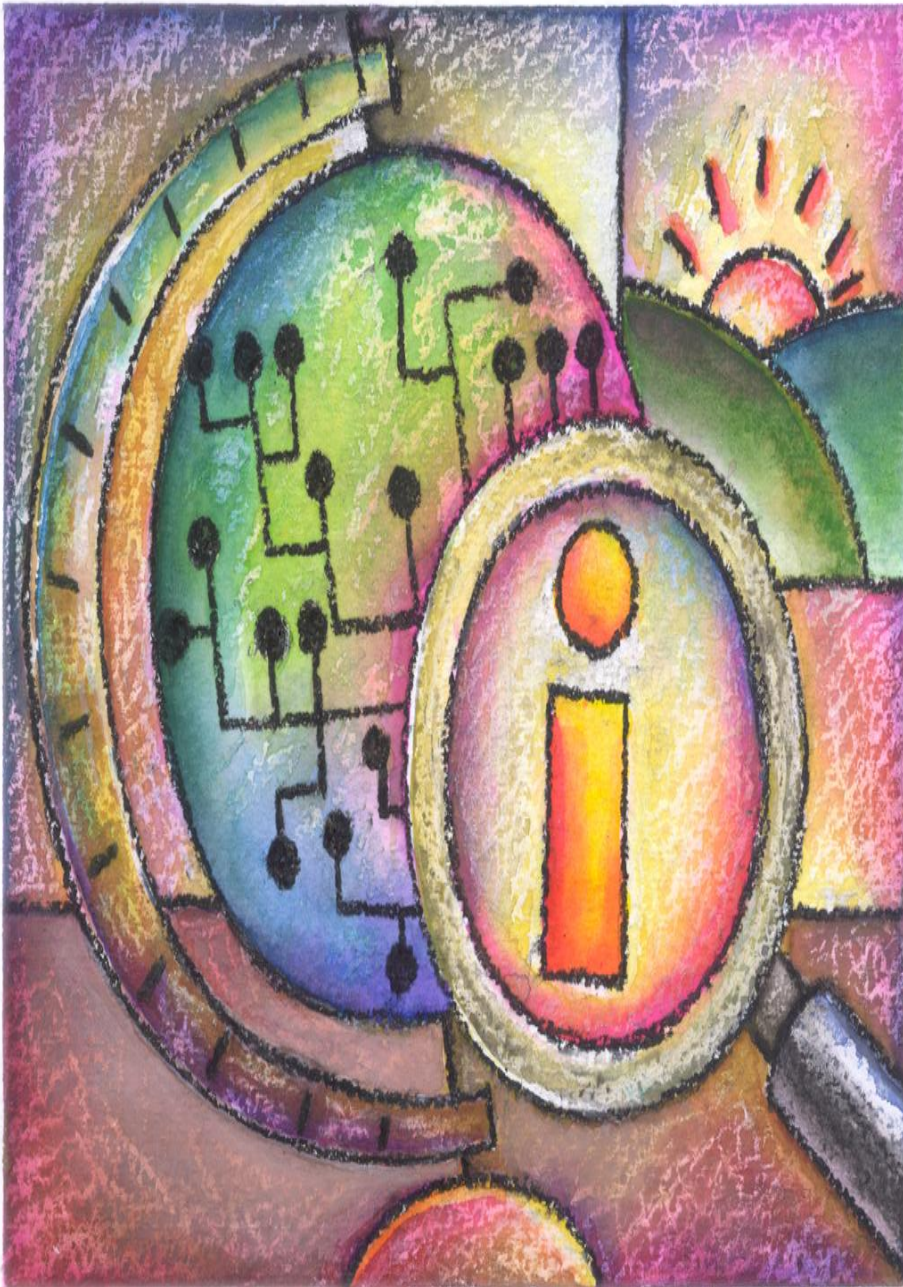


Table of Contents

| | |
|------------------------------|----|
| Module Mind Map | 3 |
| Introduction..... | 4 |
| 1. Verbal Analogy..... | 11 |
| 2. Categorization..... | 24 |
| 3. Arrangements..... | 45 |
| 4. Comparisons | 53 |
| 5. Deductions | 63 |
| 6. Coding – Decoding..... | 80 |
| 7. Blood Relations | 87 |
| 8. Analytical Problems | 95 |

Module Mind Map



Introduction

Aptitude Excellence: Your Guide to the Perfect Score 😊 !

This module has been developed specifically to equip you with the essential knowledge and skills that can help you secure a job at a BPO company.

As a part of the hiring process, many companies require candidates to pass a test to make sure they are qualified enough to carry out the basic responsibilities of the job.

There are three types of tests:

- **Achievement:** what you have accomplished in the past.
- **Ability:** what you are able to demonstrate in the present.
- **Aptitude:** how quickly or easily you will be able to learn in the future.

We are concerned here with the aptitude tests, because these tests can measure how likely you are going to respond to the tasks of your new job. Thus, every job profile has its own aptitude tests that are relevant to the needed skills.

What skills does a BPO-specific aptitude test measure?

BPO-specific aptitude tests cover a range of skills:

- **Numerical ability:** the ability to work with numbers accurately and in a timely fashion
- **Logical reasoning and analytical thinking:** the ability to think clearly, and apply common sense to reach an answer.
- **Attention to details:** the ability to handle large ranges of data accurately

Logical reasoning and analytical thinking are among the most important skills in the arsenal of any job candidate. Mastery of these two skills will make your students very employable. This manual is designed to help you train your students in logical and analytical thinking skills effectively.

Module Objectives

Upon the completion of this module, you will be able to:

- Define analytical and logical reasoning
- List the benefits of analytical and logical reasoning
- Relate analytical and logical reasoning to BPO
- Develop your analytical and logical reasoning skills
- Solve reasoning skills effectively and accurately

Module WIIFM

This module will help you:

- Develop your analytical and logical skills.
- Pass the logical and analytical reasoning section on your aptitude test.
- Secure a job at a BPO company.
- Make better decisions in your personal and professional life.

Relevance to BPO

You need to develop your analytical and logical reasoning skills for two reasons. First, to secure a job at a BPO company, you have to clear an aptitude test. On that test, you will be required to score high in the analytical and logical reasoning section. The other reason is that at a BPO company, you will be expected to help customers to make educated decision about purchasing products and services. Training in analytical and logical skills will help you become more effective in this respect.

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Logical and Analytical Reasoning for Aptitude Tests

Introduction

According to Cambridge Advanced Learner's Dictionary, reasoning is the “process of thinking about something to make a decision”. Since making a decision is the end outcome, we have to think logically and analytically to be sure we are making the right one. In this module, you will acquire knowledge and develop the skills that you will need in everyday situations and in gearing up for an aptitude test.

What are the types of reasoning?

Broadly, reasoning can be classified into various types. However for the course of this study we shall focus on two types of reasoning: (1) Logical Reasoning and (2) Analytical Reasoning.

Logical Reasoning

Definition:

Logical Reasoning refers to the use of a methodical step by step process based on sound mathematical procedures to arrive at a conclusion. It encompasses arriving at conclusions using the given facts and mathematical principles. It is often used as a problem solving strategy.

In summation, Logical Reasoning measures one's ability to:

- Understand
- Analyze
- Evaluate Arguments

Types of Logical Reasoning

Logical reasoning can be distinguished into three types:

- 1.1. Deduction
- 1.2. Induction
- 1.3. Abduction

Deduction means determining the conclusion. It is using the rule and its precondition to make a conclusion. Example: "When it rains, the grass gets wet. It rained today. Therefore, the grass is wet." Mathematicians are commonly associated with this style of reasoning.

Induction means determining the rule. It is learning the rule after numerous examples of the conclusion following the precondition. Example: "The grass has been wet every time it has rained. Therefore, if it rains tomorrow, the grass will get wet." Scientists are commonly associated with this style of reasoning.

Abduction means determining the precondition. It is using the conclusion and the rule to support that the precondition could explain the conclusion. Example: "When it rains, the grass gets wet. The grass is wet; therefore, it may have rained." Diagnosticians and detectives are commonly associated with this style of reasoning.

Analytical Reasoning

Analytical Reasoning is that branch of reasoning where information is given as a set of conditions. We would need to examine the data given to reach the right conclusion. This requires clear thinking and a systematic approach.

Both logical and analytical reasoning can be developed by consistent, systematic practice. The following shows you how these two skills show up on aptitude test and how you can solve them properly.

Types of Questions on Reasoning

Reasoning skills can be measured in many ways. The following is a list of some familiar reasoning questions.

- Verbal analogy
- Categorization
- Arrangement
- Comparison
- Deductions
- Coding – decoding
- Blood relations
- Analytical problems

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Verbal Analogy



1. Verbal Analogy

An analogy essentially reflects something common between things that, on the surface, may not have any connection whatsoever. For instance, on the face of it, the words desert and sea may not seem to have much in common. However, if one includes the words jeep and motor boat, then one has an analogy on one's hands. What is the relationship here? Well, quite simply that just as a jeep can be used as a means of transportation to traverse a desert, so can a motor boat be used on a sea.

There are two ways in which an analogy question can be asked.

Ex1: Cows: Moo: :

- a) Kettles: Whistle
- b) Corpses: Silence
- c) Lions: Roar
- d) Spectators: Cheer

One could be given a set of words where one would have to identify the relationship between the words. Here, it is fairly simple. A cow moos. So, one has to look for a similar relationship in the answer choices. Option (b) can be discarded as corpses are indeed silent and one is looking for a connection between a sound and a living source. Options (a) and (d) are tempting because kettles do make a whistling sound and spectators do cheer. However, spectators do not make a 'cheering sound'. Cheering is their response to what they see in front of them. So, this option can be discarded. Option (a) could still seem correct, but since one of the words in the question is a cow, one would look for an animal in the answer options. Hence, option (c) would be the best answer as a similar relationship can be established between the two words in this set as well. Just as cows moo, lions roar.

Ex2: Cash: Bundle: Cards

- a) Pack
- b) Bunch
- c) Wad
- d) School

One could also be given a question where a set of words and one of the words from the other set is given. One has to find the second word to complete the set. The method of solving this type of question remains the same. After having established the connection between the words in the first set, one has to find a word from the answer options that would establish a similar relationship in the second set.

For instance, in the above example the relationship between the words in the first set is that a collection of cash is called a bundle. Similarly, a collection of cards is called a pack. Hence, option (a) is the correct answer.

The best way to solve analogy questions is to practice a lot. So, one will now look at a few solved examples.

Example 1: Ribbons : Decoration:

- a) Balloons: Gas
- b) Cake: Tasty
- c) Make up: Beauty
- d) Gifts: Birthday

Let' look at the question first.

What relationship could one possibly establish between the words ribbons and decoration?

Well, ribbons **are** used for decoration, aren't they? They are used to enhance or embellish the beauty of an item or an area.

Which of the answer choices has a similar relationship?

Option (a) tells one that balloons are filled with gas, Option (b) states that cakes are tasty. Option (d) tells one that gifts are given on birthdays. Are any of these relationships the same as the one in the question? No! However, option (c) has the words make up and beauty. Could there be a similar relationship here? Yes!

If ribbons are used to embellish items, make up is used to embellish or enhance the beauty of women. Hence, the connection between the two sets is similar. So, the correct answer is (c).

Example 2: Sanatorium: Patients:

- a) School: Fish
- b) Grain: Store
- c) Children: Playground
- d) Apiary: Bees

What is the connection between the words in the question?

Patients or people who are either being treated or recovering from for an illness are housed in a place called a sanatorium.

Which of the words in the other sets have a similar relationship?

Options (a), (b) and (c) can be discarded. A pack of fish is called a school. A store is where grain can be bought from. The place where grain is kept is called a granary or a silo. Children play in a playground. None of these have a similar connection.

Option (d), however, is correct because bees are kept or 'housed' in a place called an apiary. Hence, this is the correct answer.

Example 3: Reading : Knowledge:

- a) Working: Experience
- b) Singing: Voice
- c) Running: Track
- d) Cooking: Utensils

What is the relationship between the words in the question?

Reading can help one gain knowledge.

In which of the other sets do the words reflect a similar relationship?

Working can definitely help one gain experience. Singing doesn't help one gain a voice. In fact, if one does not have a good voice, one would not be able to sing. Running doesn't help one gain a track. Running can be done on a track. And, finally, cooking doesn't help one gain utensils. One needs utensils to be able to cook.

Out of all the options, the first one is the one that reflects the same relationship. So, **option (a)** is the answer.

Example 4: Cough: Tuberculosis : Pick pocket :

- a) Wallet
- b) Murder
- c) Knife
- d) Jail

What is the connection between the three words in the question?

One will first look for a connection between the words in the first set. A cough is a minor ailment. Tuberculosis, on the other hand, is a major ailment.

Which answer choice can form a similar relationship with the word ‘pick pocket’?

One pick pockets a wallet. So, option (a) tells one of the objects that get affected by the action. One may use a knife to threaten the person one is trying to steal from, which means that option (c) tells one of one of the means that can be used to perform the action. Option (d) very clearly states the end result of the action. So, none of the options have the same connection.

Option (b) is the correct answer. Pick pocketing is a minor crime but murder is a major crime. Hence (b) is the correct answer.

Example 5: Responsibility: Onus:: Confiscate :

- a) Impediment
- b) Impound
- c) Grab
- d) Steal

What is the relationship that you notice between the two words?

The second word is a synonym of the first word. Onus means responsibility.

Which answer choice can reflect the same relationship with the word ‘confiscate’?

Option (b) can. Impound means to confiscate.

Option (b) is the correct answer. Impediment means an obstacle. Grab and steal do not have the same meaning as confiscate.

Example 6: Prologue: Book: : Preamble :

- a) Comic
- b) Constitution
- c) Play
- d) Poem

What is the connection between the words in the first set?

A prologue appears at the beginning of the book. It is a type of introduction that gives the reader some information about what is to follow in the book

What is a preamble an introduction to?

It is an introduction to a formal document.

Since a preamble is not an introduction to a comic, play or poem, **option (b)** is the correct answer.

Exercise 1:

1. The Lighthouse of Alexandria: Egypt:

- a) The Great Wall of China: China
- b) Hanging Gardens of Babylon: Nebuchadnezzar II
- c) Taj Mahal : Asia
- d) Machu Picchu: Inca

2. Shoes: Leather:

- a) Slippers: Bathroom
- b) Sandals: Market
- c) Socks: Cotton
- d) Heels: Fashion

3. Museum: Curator:

- a) Horse: Fodder
- b) School: Principal
- c) Chef: Cook
- d) House: Builder

4. Sandpaper: Harsh:

- a) Cotton: Thin

b) Nylon: Stretch

c) Silk: Smooth

d) Wool: Warm

5. Soap: Hands::

a) Water: Drink

b) Broom: Floor

c) Detergent: Dust

d) Mop: Wet

6. Dancer: Auditorium:

a) Politician: Parliament

b) Banker: Money

c) Doctor: Medicine

d) Singer: Microphone

7. Needle: Thread:: Pen :

a) Black

b) Waterman

c) Ink

d) Pen Holder

8. Couch : Furniture:: Ship :

a) Sail

- b) Sea
- c) Cargo
- d) Fleet

9. Joy: Sadness:: North :

- a) Star
- b) South
- c) Pole
- d) America

10. Wince: Pain:: Scream :

- a) Hunger
- b) Excitement
- c) Horror
- d) Sadness

11. Butler: Household: Valet :

- a) Cars
- b) Hotels
- c) Driving
- d) Planes

12. Conscious: Blush::

- a) Angry: Gloat

b) Happy: Smile

c) Sad: Depressed

d) Excited: Sneer

13. Drifter: Travel:

a) Thief: Steal

b) Singer: Audience

c) Alcoholic: Drinks

d) Saint: Holy

14. Stethoscope: Hear:

a) Earphones: Music

b) Magnifying Glass: See

c) Thermometer: Nurse

d) Telescope: Read

15. Bread: Wheat:

a) Cotton: Candy

b) Skyscrapers: buildings

c) Buildings: bricks

d) Cars: Gas

16. Poet : Poem:: Choreographer :

a) Dance



b) Song

c) Movie

d) Book

17. Chic: Fashionable: : Dowdy :

a) Old

b) Dark

c) Not Fashionable

d) Bright

18. Breeze: Gale:: Drizzle :

a) Rain

b) Downpour

c) Snow

d) Umbrella

19. Car: Battery:: Life :

a) Clothes

b) Money

c) Sun

d) Success

20. Scissors: Cloth :: Axe :

a) Tree

- b) Boat
- c) Flowers
- d) Grass

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Categorization



2. Categorization

WIIFM:

Solving problems of categorization helps one practice how to analyze data and break it into smaller packets of information. These skills will prove invaluable in the corporate world, and solving these problems would be the first baby steps that one takes.

Categorization:

In problems of categorization, one is simply supposed to analyze the data and place different things/names/entities in different categories, according to the information that has been given. One of the best ways of solving such problems is to construct a table and insert the data as per the information.

Example 1: Go through the information provided carefully and answer the questions that follow:

There are six rivers- M, N, O, P, Q and R. M is not a long river. N and Q are not large rivers. P is not a deep river. M and P are not large rivers. M and N are not alike.

1. Which two rivers are deep?

- a) M and N
- b) Q and R
- c) O and P
- d) N and R

2. Which are the two large rivers?

- a) M and O
- b) N and R
- c) O and R
- d) N and Q

3. Which two rivers are long?

- a) M and N
- b) O and M
- c) N and P
- d) M and R

4. Which river is long and deep, but not large?

- a) Q
- b) R
- c) M
- d) N

5. Which two rivers are neither large nor deep?

- a) M and N
- b) P and Q
- c) R and O
- d) N and P

Confused? Let's solve these questions by first sorting out the data. At the outset, one can prepare a table like the one given below:

| | M | N | O | P | Q | R |
|--------------|---|---|---|---|---|---|
| Large Rivers | | | | | | |
| Deep Rivers | | | | | | |
| Long Rivers | | | | | | |

Now, let's read the information given. The first and last pieces of information-that the six letters represent rivers and that M and N are not alike-can be used later. First we need to look at the other pieces of data. We understand that:

- M is not a long river
- N and Q are not large rivers
- P is not a deep river
- M and P are not large rivers

For each of these pieces of information, we will make a corresponding note in the table. So now, the table should look something like this:

| | M | N | O | P | Q | R |
|--------------|---|---|---|---|---|---|
| Large Rivers | x | x | x | x | | |
| Deep Rivers | x | | | | | |
| Long Rivers | x | | | | | |

From the table, we can clearly identify what sort of rivers M and P are. If M is not a large or a long river, then it has to be deep river. Similarly, if P is not a large or a deep river, then it has to be a long river.

M is a deep river.

P is a long river.

Let us now look at the other pieces of information. The knowledge that all of them are rivers is not going to help us much. However, the fact that M and N are not alike could help us. We know that:

- M is a deep river. Hence, N cannot be a deep river
- N is not a large river

So, what could N possibly be? It is obviously a long river. Hence, now we know that

N is a long river.

That is all the information that we have and that we can arrive at. Looking at the above table again, we can conclude that:

O is a long, large and deep river.

R is a long, large and deep river.

Q is a deep and long river.

Now that we know everything about the rivers, let's look at the questions again.

1. Which two rivers are deep?

There are four rivers that are deep (M, O, R and Q). But if one were to choose from the answer choices, then the correct answer would be **(b) – R and Q.**

2. Which are the two large rivers?

There are only two rivers that are large (O and R). Hence, the correct answer is **(c) – O and R.**

3. Which two rivers are long?

Looking at the table and the conclusions we arrived at, it is clear that apart from M, all the rivers are long rivers. But if one were to choose from the answer choices, then the correct answer would be **(c) – N and P.**

4. Which river is long and deep, but not large?

The answer very clearly is **(a) – Q.**

5. Which two rivers are neither large nor deep?

This means that we need to find rivers that are only long. From the answer choices, the correct answer would be **(d) – N and P.**

Let's look at another example.

Example 2: Go through the information provided carefully and answer the questions that follow:

There are six items in a shop- U, V, W, X, Y and Z. Three of the items, V, W and Y are made of gold while the rest are made of silver. U, V and X are heavy while the other items are quite light. Three items, U, V and W have been brought to the shop from the mainland whereas the other three have been brought from an island.

1. Which item is heavy, made of silver and from an island?
 - a) V
 - b) X
 - c) W
 - d) Z
2. Which two items are light, made of gold and from an island?
 - a) V and W
 - b) V and Z
 - c) Y and Z
 - d) None of the above
3. Which item is made of gold, quite light and from the mainland?
 - a) U
 - b) V
 - c) W
 - d) X
4. Which item is made of silver, heavy and from the mainland?
 - a) Y
 - b) X
 - c) V
 - d) U

5. Which of the following items is quite light and brought from an island?

- a) W
- b) X
- c) Y
- d) V

The first step would be to identify the important pieces of data. The characteristics of the items that we need to keep in mind are that they are either made of gold or silver, they could be heavy or light and they were brought from either the mainland or an island. First, let's make a table.

| U | V | W | X | Y | Z |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Now, let's start plugging in the information one at a time.

- V, W and Y are made of gold while the rest are made of silver

| U | V | W | X | Y | Z |
|--------|------|------|--------|------|--------|
| Silver | Gold | Gold | Silver | Gold | Silver |
| | | | | | |
| | | | | | |

- U, V and X are heavy while the rest of the items are light

| U | V | W | X | Y | Z |
|--------|-------|-------|--------|-------|--------|
| Silver | Gold | Gold | Silver | Gold | Silver |
| Heavy | Heavy | Light | Heavy | Light | Light |
| | | | | | |

- U, V and W have been brought to the shop from the mainland while the other items have been brought from an island

| U | V | W | X | Y | Z |
|----------|----------|----------|--------|--------|--------|
| Silver | Gold | Gold | Silver | Gold | Silver |
| Heavy | Heavy | Light | Heavy | Light | Light |
| Mainland | Mainland | Mainland | Island | Island | Island |

We have all the information we need laid out in front of us in a very simple manner. Now, let's answer the questions:

1. Which item is heavy, made of silver and from an island?

From the table, one can see that the answer is **X**. Hence, the answer is (b)

2. Which two items are light, made of gold and from an island?

Again, looking at the table, one can observe that there two items which are light and made of gold- W and Y. However, W has been brought from mainland and Y has been brought from an island. So, there is only one item which light, made of gold and from an island. Hence, the answer is (d) – **None of the above**.

3. Which item is made of gold, quite light and from the mainland?

The answer is **W**. So the answer is (c).

4. Which item is made of silver, heavy and from the mainland?

There is only one such item – **U**. So the correct answer is (d).

5. Which of the following items is quite light and brought from an island?

There are two items that are light and which have been brought from an island- Y and Z. So, the answer is (c).

Example (3): Go through the information provided carefully and answer the questions that follow:

At school there was a high jump competition. Who came 1st, 2nd and 3rd, how high did they jump and how old were they? The highest jump won and the lowest was 3rd.

Height: 60cm, 65cm, 80cm

Age: 8,9,10

- The 10 year old did not jump the highest.
- Holly came 3rd.
- Sarah beat Lewis.
- The 9 year old only managed 60cm.

| Name | Holly | Lewis | Sarah |
|----------|-------|-------|-------|
| Position | | | |
| Height | | | |
| Age | | | |

Let's solve these questions by first sorting out the data. At the outset, one can prepare a table like the one given below:

| Name | Holly | Lewis | Sarah |
|----------|-------|-------|-------|
| Position | 3rd | 2nd | 1st |
| Height | 60 cm | 65 cm | 80 cm |
| Age | 9 | 10 | 8 |

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Problem1

J, K, L, M, N and O are members in a club. In this group, there is a doctor, a singer, an actor, a politician and two housewives. There are two married couples in the group. J is married to M, who is a housewife. No woman is either an actor or a singer. O, a doctor, is married to L, who is an actor.

N is not a woman. The politician is married to a housewife.

a) Who is N?

- i) Politician
- ii) Singer
- iii) Doctor
- iv) Actor

b) How many men are there in the group?

- i) Four
- ii) Three
- iii) Two
- iv) Cannot be determined

c) How many women are there in the group?

- i) Three
- ii) Four
- iii) Two
- iv) Cannot be determined

d) Who is J?

- i) Politician
- ii) Doctor
- iii) Singer
- iv) Actor

e) Who is the singer in the group?

- i) J
- ii) N
- iii) M
- iv) O

Problem 2

Sana, Aliya, Negah, Toshi and Saif travel a lot on business. Four of them have visas for China. All, apart from Aliya and Toshi have visas for Russia. Aliya's only visa is for Pakistan, although only Sana and Saif do not a visa for Pakistan.

1. Who only has visas for China and Pakistan?

- A. Sana
- B. Aliya
- C. Negah
- D. Toshi
- E. Saif
- F. Cannot say

2. Who has the most visas?

- A. Sana.
- B. Aliya
- C. Negah
- D. Toshi
- E. Saif
- F. Cannot say

3. Who travels most often?

- A. Sana.
- B. Aliya
- C. Negah
- D. Toshi
- E. Saif
- F. Cannot say

4. Who are the two people who have same visas?

- A. Sana- Saif
- B. Aliya- Sana
- C. Negah- Toshi
- D. Toshi- Sana
- E. Saif- Aliya
- F. Cannot say

5. How many visas does the group have totally?

- A. 10
- B. 15
- C. 6
- D. 12
- E. Cannot say

6. Which is the most frequented country?

- A. Pakistan
- B. Russia
- C. China
- D. Cannot say

Problem 3

Doppler's butterfly can only be found in Asia in countries including India, Japan, Cambodia, Thailand and Malaysia and even in certain areas of non-forested countries of South America such as Argentina, Chile, Brazil and Peru. It is a rarity in Brazil where it has elongated and black wings as opposed to the ones found in Asia that have shorter and orange colored wings. The ones found in Chile have only red wings although they retain the characteristic South American shape.

1. In which country is the butterfly unlikely to have elongated wings?

- A. Mexico
- B. Chile
- C. Argentina
- D. Brazil
- E. India
- F. Cannot say

2. Where is a forest dwelling Doppler butterfly with orange wings most likely to be found?

- A. Chile
- B. Germany
- C. Thailand
- D. Australia
- E. Cannot say

3. Where is a desert dwelling, elongated wings Doppler butterfly most likely to be found?

- A. Thailand
- B. India
- C. Japan
- D. Australia
- E. Argentina
- F. Cannot say

4. Where is a purple Doppler butterfly most likely to be found?

- A. France
- B. India
- C. Japan
- D. Cambodia
- E. Peru
- F. Cannot say

Problem 4

Rana, Toshi, Hajira and Sana are four friends who stay in the same building. Their building has seven floors. Sana's grandmother is very old and cannot climb the stairs, so they stay on the ground floor. Both, Rana and Hajira stay on even number floors but do not stay on the same floor. Only Toshi stays on an odd number floor but it is not the highest or the lowest floor of the building. Rana stays above Toshi and Sana but below Hajira. Nobody stays on the floor just above Sana.

1. On which floor none of the friends stay?

- A. First
- B. Sixth
- C. Third
- D. Fourth

2. Toshi stays on which floor?

- A. First
- B. Third
- C. Fifth
- D. Second

3. Who lives above everyone else?

- A. Hajira
- B. Toshi
- C. Rana
- D. Sana

4. Rana stays on which floor?

- A. First
- B. Second
- C. Fourth
- D. Sixth

5. Who is Sana's best friend?

- A. Rana
- B. Toshi
- C. Hajira
- D. Cannot be determined

Problem 5:

There are five friends who have just joined Cairo University for an extra degree. All of them come from different cities and have varied educational backgrounds. Given below is the information that we have about them:

- The friends are from Assyut, Beni Hasan, Faiyum, Hurghada and Marsa Matruh.
- One of them is in the army, one is a botanist, one is a farmer, one is a hotelier and one is a manager.
- The first letter of their city, their educational background and their names is not the same.
- Bashar and Farid are not managers. They are not from Assyut or Hurghada.

- Ahmed is neither a farmer nor a hotelier.
- Hisham is not from Beni Hasan.
- The farmer is from Hurghada.
- The manager is from Beni Hasan.
- The hotelier is not from Faiyum.
- Mohammad is also one of the friends.

1. Who is from Beni Hasan?

- a) Ahmed
- b) Hisham
- c) Mohammad
- d) Farid

2. Who is the hotelier?

- a) Bashar
- b) Mohammad
- c) Farid
- d) Ahmed

3. Where does the army man live?

- a) Beni Hasan
- b) Hurghada
- c) Faiyum
- d) Marsa Matruh

4. Who is the botanist?

- a) Bashar
- b) Ahmed
- c) Farid
- d) Hisham

5. Who is the farmer?

- a) Ahmed
- b) Bashar
- c) Hisham
- d) Mohammad

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Arrangements



3. Arrangements

Example 1: John, Allan, Mary, Julia and Emma are sitting in one row in a movie hall. We have the following information about their seating arrangement:

- John is sitting next to Allan
- Mary is sitting next to Julia
- Julia is not sitting with Emma
- Emma is on the left end of the row
- Mary is in the second seat from the right
- John is sitting to the right of Allan and Emma
- John and Mary are sitting together

Before we move on to the questions, let's try to first arrange these five people in an order. The information provided to us can be helpful, but we will have to use it sensibly.

The first step is to visualize the seating order and put it down on a sheet. Since there are five people and they are sitting in a row, we can make five blanks in a straight line.

The second step is to separate the independent pieces of information from those that are relative to other pieces of information. From all the points given above, we have two pieces of independent information:

- Emma is on the left end of the row
- Mary is in the second seat from the right

So, let's plug that information in.

__Emma__ _____ __Mary__ _____

Now, let's see how the others are sitting with relation to Mary and Emma. We are told that Julia is not sitting with Emma. This means that someone other than Julia would occupy the seat immediately to the right of Emma.

Let's look at Mary now. Mary is sitting with John and she is sitting next to Julia as well. Both John and Julia could be on either side of Mary. So, this doesn't help us much.

However, John is supposed to be sitting next to Allan and has to be on the right of Allan and Emma. Now, both these conditions are only possible if Allan occupies the seat immediately to the right of Emma and John takes the seat right next to him. So now, we have

__Emma__ __Allan__ __John__ __Mary__ ____

This leaves only one seat for Julia, hence fulfilling the condition that she has to sit next to Mary.

The final order is:

__Emma__ __Allan__ __John__ __Mary__ __Julia__

Problem 1:

An emergency meeting has been convened. Six people have come for it and are sitting around a table. There are two people sitting between Mr. Weatherby and Archie. Reggie is sitting to the left of Archie. Betty is not sitting next to Mr. Weatherby. Jughead and Veronica are also present for the meeting.

Answer the following questions based on the information given above. Each question should be answered independently of the others.

1. Who is sitting between Mr. Weatherby and Reggie?

- a) Jughead
- b) Veronica
- c) Either Jughead or Veronica
- d) Betty

2. Who is sitting to the right of Archie?

- a) Betty
- b) Jughead
- c) Veronica
- d) Either Jughead or Veronica

Problem 2:

Seven friends have been allotted different slots to make a presentation. David has the first slot. Matt does not have the second slot. Lisa's slot is immediately after Jennifer's slot. Mathew

Cannot present before Courtney but has got a slot two slots after Jennifer. Courtney is the second last to present.

Answer the following questions based on the information given above.

Each question is independent of the others.

1. Who is the last one to present?

- a) Matt
- b) Mathew
- c) Bruce
- d) Lisa

2. Which slot does Lisa get?

- a) Fourth
- b) Third
- c) Seventh
- d) Fifth

3. After whom does Bruce present?

- a) David
- b) Matt
- c) Courtney
- d) Lisa

4. Who presents after Matt?

- a) Bruce
- b) Courtney
- c) Jennifer
- d) Mathew

5. Which slot does Matt get?

- a) Third
- b) Fourth
- c) Fifth
- d) Second

Problem 3:

There are six cubicles in one corridor. Cubicle 1 belongs to Johnny. Christian's cubicle is between the cubicles of Johnny and Leonardo. Tom's cubicle is between the cubicles of Johnny and Christian. Denzel's cubicle is between the cubicles of Leonardo and Russell. Whom does cubicle 5 belong to?

- a) Russell
- b) Denzel
- c) Christian
- d) Leonardo

Problem 4:

Julia, Megan, Heather, Carrie, Kate and Marion are sitting around a table enjoying dinner. Megan is sitting diagonally opposite Julia. Carrie is two places to the left of Julia. Heather is directly opposite Kate. Where is Marion sitting?

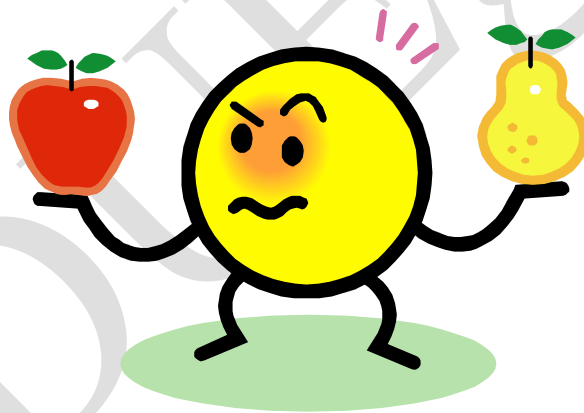
- a) Marion is sitting between Megan and Kate
- b) Marion is sitting next to Carrie
- c) Marion is sitting next to Julia
- d) Marion is sitting diagonally opposite Julia

Problem 5:

Egypt Express has to stop at six stations – Luxor, Aswan, Matruh, Giza, Alexandria and Cairo- every day. The train starts from the first station, stops at stations two, three, four, five and six and comes back to the first station to repeat the journey. The fourth station is Luxor. Luxor is two stations after Giza and Matruh is the station immediately before Luxor. Aswan is the last station. If a man gets on to the train at Giza, crosses three stations and gets off at the very next station, which of the following statements must be true?

- a) The first station is Cairo
- b) The man gets off at Aswan
- c) The man gets off at either Cairo or Alexandria
- d) The second station is Giza

Comparison



4. Comparisons

WIIFM:

Comparison problems help in sharpening one's ability to think quickly and clearly.

Example 1:

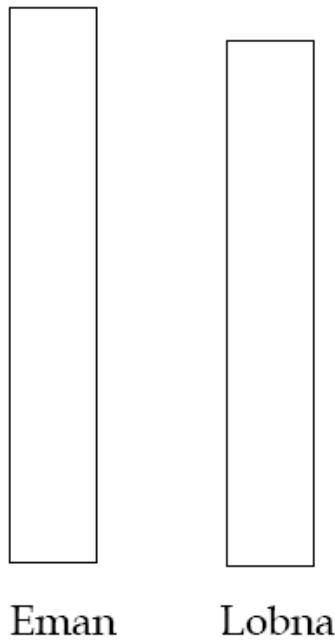
There are five friends: Eman, Yomna, Soha, Lobna and Ranim. Yomna is shorter than Lobna but taller than Soha. Eman is the tallest. Ranim is slightly shorter than Lobna and slightly taller than Yomna. Before we answer the questions, let arrange these friends according to their heights.

Since Eman is the tallest, let us put her on one side.



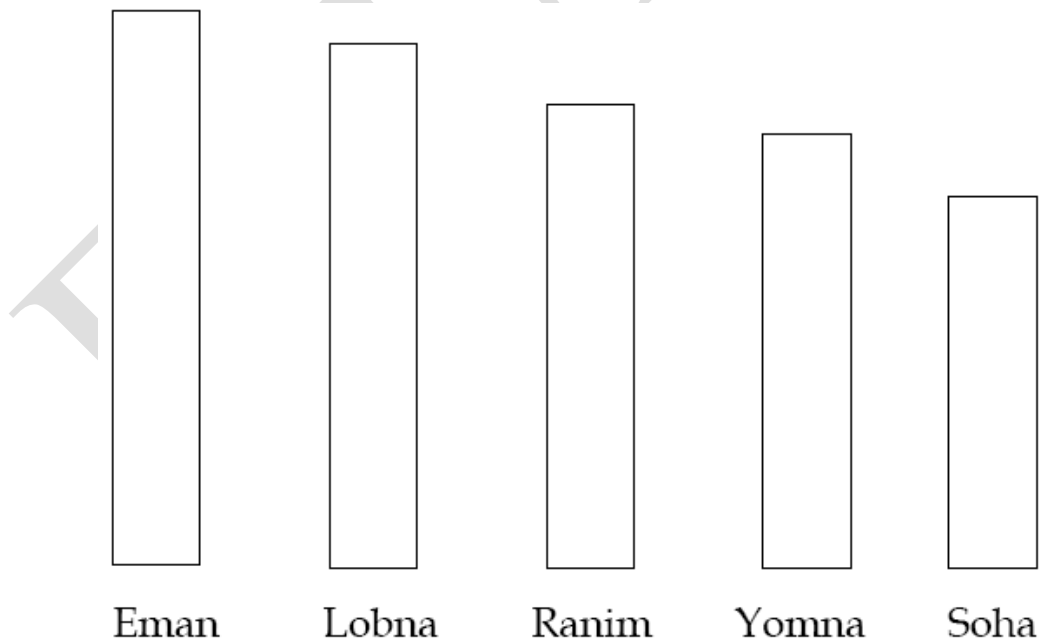
Eman

Please notice that the information tells us that both Ranim and Yomna are shorter than Lobna. Since Soha is shorter than Yomna, it will be safe to say that Lobna is the second tallest out of the lot. So,



We know that Ranim is taller than Yomna and that Soha is shorter than Yomna.

Hence, we get:



Now that we have compared the heights of the five friends, let us look at the questions.

1. Who is the shortest?

- a) Ranim
- b) Yomna
- c) Soha
- d) Lobna

Looking at the way we have compared the heights, it is obvious that Soha is the shortest. So, the answer is **(c) Soha**.

2. If all of them according to their heights, who will be in the middle?

- a) Lobna
- b) Ranim
- c) Eman
- d) Soha

The answer is **(b) Ranim**.

3. If they stand in order of increasing heights, who will be second?

- a) Yomna
- b) Lobna
- c) Soha
- d) Ranim

The answer is **(a) Yomna**.

4. Who is the second tallest?

- a) Eman
- b) Yomna

c) Ranim

d) Lobna

The answer is **(d) Lobna**.

5. Who is taller than Ranim but shorter than Eman?

a) Yomna

b) Lobna

c) Soha

d) None of these

The answer is **(b) Lobna**.

Example 2:

Five brothers James, Zachary, Eliot, Thomas and Jeremy decide to climb Mount Everest. However, before embarking on the climb, they decide to undergo a test to check their fitness levels. The test concludes that:

- Eliot has less stamina than Zachary
- Jeremy has less stamina than James
- Zachary has less stamina than Jeremy
- Eliot has more stamina than Thomas

Let's put these comparisons in order before attempting the questions.

Eliot has less stamina than Zachary, but more stamina than Thomas. Zachary has less stamina than Jeremy who in turn does not have as much as stamina as James. So, if one were to rank them according to the stamina that they have, we'll get:

- James
- Jeremy

- Zachary
- Eliot
- Thomas

Let us answer the questions now.

1. Who has the most stamina?

- a) Jeremy
- b) James
- c) Zachary
- d) Eliot

The answer is **(b) James**.

2. Who has the least stamina?

- a) Jeremy
- b) Eliot
- c) James
- d) Thomas

The answer is **(d) Thomas**.

3. Which brother has got more stamina than Thomas but less stamina than Zachary?

- a) Eliot
- b) Jeremy
- c) James
- d) None of the above

The answer is **(a) Eliot**.

1. Pune is bigger than Jhansi, Sitapur is bigger than Chittor. Raigarh is not as big as Jhansi, but is bigger than Sitapur.

2. **Which is the smallest?**

- a) Pune
- b) Jhansi
- c) Sitapur
- d) Chittor

3. B is twice as old as A but twice younger than F.
C is half the age of A but twice the age of D.

Which two persons from the pair of oldest and youngest?

- a) F and A
- b) F and D
- c) B and F
- d) F and C
- e) None of these

4. Hitesh is richer than Jaya whereas Mohan is richer than Pritam.
Lalit is as rich as Jaya. Amit is richer than Hitesh.

What conclusion can be definitely drawn from the above statement?

- a) Jaya is poorer than Pritam.
- b) Mohan is richer than Amit.
- c) Lalit is poorer than Hitesh.
- d) Pritam is richer than Lalit.

5. Seven students P, Q, R, S, T, U and V take a series of tests.
- No two students get similar marks.
 - V always scores more than P.
 - P always scores more than Q.
 - Each time either R scores the highest and T gets the least, or alternatively S scores the highest and U or Q scores the least.

If S is ranked sixth and Q is ranked fifth, which of the following can be true?

- a) V is ranked first or fourth.
 - b) R is ranked second or third.
 - c) P is ranked second or fifth.
 - d) U is ranked third or fourth.
 - e) T is ranked fourth or fifth.
6. A, B, C, D, E and F are six students in a class.
- B and C are shorter than F
 - D is taller than C.
 - E is shorter than D but taller than F.
 - A is shorter than E but taller than F.

Who among them is the tallest?

- a) A
- b) B
- c) D
- d) E
- e) None of these

7. Six friends P, Q, R, S, T and U are members of a club and play a different game of Football, Cricket, Tennis, Basketball, Badminton and Volleyball.

- T who is taller than P and S plays Tennis.
- The tallest among them plays Basketball.
- The shorter among them play Volleyball.
- Q and S neither play Volleyball nor Basketball.
- R plays Volleyball.
- T is between Q who plays Football and P in order of height.

Who among them is taller than R but shorter than P?

- a) Q
 - b) T
 - c) U
 - d) Data inadequate
 - e) None of these
8. $A * B$ means A and B are of the same age;
 $A - B$ means B is younger than A;
 $A + B$ means A is younger than B;

Sachin * Madan - Reena means

- a) Reena is the youngest.
 - b) Reena is the oldest.
 - c) Madan is younger than Reena.
 - d) None of these.
9. $A * B$ means A and B are of the same age;
 $A - B$ means B is younger than A;
 $A + B$ means A is younger than B;

Deven - Shashi * Hemant is opposite to

- (i). Hemant + Shashi + Deven
- (ii). Hemant - Shashi + Deven
- (iii). Shashi * Hemant + Deven

- a) only
- b) (i) and (ii) only
- c) (ii) and (iii) only
- d) None of these

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Deductions



5. Deductions

Deductions

Typically deduction statements consist of two statements – on the basis of which a deduction has to be made. These questions can be answered by representing the given statements by Venn Diagrams. However, here we will look at arriving at the deductions by using some simple rules. The statements in the question are called ‘premises’ and the answer is the ‘conclusion’.

To explain what a premise and conclusion is, an example to explain mentioned below.

- All dogs are cats. – Premise 1
- All cats are birds – Premise 2

Based on the above two premises, the conclusion is that all dogs are birds.

Ex 1:

- Some apes are chimpanzees.
- No chimpanzee is a lion.

- a) Some apes are not lions.
- b) Some apes are lions.
- c) Some lions are apes
- d) Both a) and b)

And the answer to this question would be (a)

Ex 2:

- All cooks are cages.
- All cages are pages.

- a) All pages are cooks.
- b) All cooks are pages.
- c) No cooks are pages.
- d) Both a) and b)

Answer: B

Exercise 1:

A. Select the alternative that logically follows the two given statements.

- 1) Some pencils are crayons.
All crayons are expensive.
 - a) No pencil is expensive.
 - b) Some pencils are expensive.
 - c) All pencils are expensive.
 - d) Either a) or b)
- 2) All candies are toffees.
Some candies are unhealthy.
 - a) Some toffees are not good for health.
 - b) Some toffees are good for health.
 - c) No toffee is good for health.
 - d) Both a) and b)
- 3) Some books are not novels.
All books have pages.
 - a) Some novels have pages.
 - b) Some novels do not have pages.
 - c) Some things which have pages are not novels.
 - d) Both a) and c)

B. Following are a list of three statements. The first two statements are correct. Based on the first two statements, infer if the third statement is correct or incorrect.

1. Miranda is taller than Mike.

Chris is taller than Miranda.

Mike is taller than Chris.

If the first two statements are correct, the third statement is

- a) Correct
- b) Incorrect
- c) Cannot be determined

2. Craig has visited more places than Julian.

Julian has visited fewer places than Michael.

Michael has visited more places than Craig.

If the first two statements are correct, the third statement is

- a) Correct
- b) Incorrect
- c) Cannot be determined

3. All roses in Monica's garden are red.

All the lilies in Monica's garden are white.

All the flowers in Monica's garden are either red or white.

If the first two statements are true, the third statement is

- a) Correct
 - b) Incorrect
 - c) Cannot be determined
4. Chemistry books are heavier than Physics books.

Chemistry books weigh lesser than Maths books.

Maths books weigh more than both Physics and Chemistry books.

If the first two statements are true, the third statement is

- a) Correct
 - b) Incorrect
 - c) Cannot be determined
5. All the buildings in the colony have security guards.
- None of the security guards wear black uniform.
- None of the security guards in the colony wear black uniform.

If the first two statements are true, the third statement is

- a) Correct
- b) Incorrect
- c) Cannot be determined

C. The logic problems in this set present you with three true statements: Fact 1, Fact 2, and Fact 3. Then, you are given three more statements (labelled I, II, and III), and you must determine which of these, if any, is also a fact. One or two of the statements could be true; all of the statements could be true; or none of the statements could be true. Choose your answer based solely on the information given in the first three facts.

1. Fact 1: Jessica has four dogs

Fact 2: Two of the dogs have blue eyes and two of the dogs have brown eyes.

Fact 3: Half of the dogs are females.

If the first three statements are facts, which of the following statements must also be a fact?

I: At least one female dog has blue eyes.

II: Two of the dogs are males.

III: The males have brown eyes.

a) I only

b) II only

c) II and III only

d) None of the statements is a known fact.

2. Fact 1: All aerated drinks have carbon dioxide.

Fact 2: There are cola and orange flavoured aerated drinks.

Fact 3: PQRS is a brand of aerated drinks.

If the first three statements are facts, which of the following statements must also be a fact?

I: All brands have carbon dioxide.

II: Some PQRS are orange.

III: PQRS have no carbon dioxide.

- a) I only
- b) II only
- c) II and III only

3. Fact 1: Most toys are made of plastic.

Fact 2: There are plastic bats and balls.

Fact 3: Some spoons are made of plastic.

If the first three statements are facts, which of the following statements must also be a fact?

I: Only children's spoons are made of plastic.

II: All bats are made of plastic.

III: Bottles are not made of plastic.

- a) I only
- b) II only
- c) II and III only
- d) None of the statements is a known fact.

Exercise 2:

1. Tanya is older than Eric.

Cliff is older than Tanya.

Eric is older than Cliff.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

2. Blueberries cost more than strawberries.

Blueberries cost less than raspberries.

Raspberries cost more than both strawberries and blueberries.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

3. All the trees in the park are flowering trees.

Some of the trees in the park are dogwoods.

All dogwoods in the park are flowering trees.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

4. Mara runs faster than Gail.

Lily runs faster than Mara.

Gail runs faster than Lily.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

5. Apartments in the Riverdale Manor cost less than apartments in The Gaslight Commons.

Apartments in the Livingston Gate cost more than apartments in the Gaslight Commons.

Of the three apartment buildings, the Livingston Gate costs the most.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

6. The Kingston Mall has more stores than the Galleria.

The Four Corners Mall has fewer stores than the Galleria.

The Kingston Mall has more stores than the Four Corners Mall.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

7. All the tulips in Zoe's garden are white.
All the pansies in Zoe's garden are yellow.
All the flowers in Zoe's garden are either white or yellow
If the first two statements are true, the third statement is
- a) true
 - b) false
 - c) uncertain
8. During the past year, Josh saw more movies than Stephen.
Stephen saw fewer movies than Darren.
Darren saw more movies than Josh.
If the first two statements are true, the third statement is
- a) true
 - b) false
 - c) uncertain
9. Rover weighs less than Fido.
Rover weighs more than Boomer.
Of the three dogs, Boomer weighs the least.

If the first two statements are true, the third statement is
- a) true
 - b) false
 - c) uncertain
10. All the offices on the 9th floor have wall-to-wall carpeting.
No wall-to-wall carpeting is pink.
None of the offices on the 9th floor has pink wall-to-wall carpeting.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

Exercise 3:

1. Oat cereal has more fiber than corn cereal but less fiber than bran cereal.

Corn cereal has more fiber than rice cereal but less fiber than wheat cereal.

Of the three kinds of cereal, rice cereal has the least amount of fiber.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

2. On the day the Barton triplets are born, Jenna weighs more than Jason.

Jason weighs less than Jasmine.

Of the three babies, Jasmine weighs the most.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

3. The temperature on Monday was lower than on Tuesday.

The temperature on Wednesday was lower than on Tuesday.

The temperature on Monday was higher than on Wednesday.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

4. Spot is bigger than King and smaller than Sugar.

Ralph is smaller than Sugar and bigger than Spot.

King is bigger than Ralph.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

5. A fruit basket contains more apples than lemons.

There are more lemons in the basket than there are oranges.

The basket contains more apples than oranges.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

6. The Shop and Save Grocery is south of Greenwood Pharmacy.

Rebecca's house is northeast of Greenwood Pharmacy.

Rebecca's house is west of the Shop and Save Grocery.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

7. Joe is younger than Kathy.

Mark was born after Joe.

Kathy is older than Mark.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

8. All spotted Gangles have long tails.

Short-haired Gangles always have short tails.

Long-tailed Gangles never have short hair.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

9. Battery X lasts longer than Battery Y.

Battery Y doesn't last as long as Battery Z.

Battery Z lasts longer than Battery X.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

10. Martina is sitting in the desk behind Jerome.

Jerome is sitting in the desk behind Bryant.

Bryant is sitting in the desk behind Martina.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

11. Middletown is north of Centerville.

Centerville is east of Penfield.

Penfield is northwest of Middletown.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

12. Taking the train across town is quicker than taking the bus.

Taking the bus across town is slower than driving a car.

Taking the train across town is quicker than driving a car.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

13. All Lamels are Signots with buttons.

No yellow Signots have buttons.

No Lamels are yellow.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

14. The hotel is two blocks east of the drugstore.

The market is one block west of the hotel.

The drugstore is west of the market.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

15. Tom puts on his socks before he puts on his shoes.

He puts on his shirt before he puts on his jacket.

Tom puts on his shoes before he puts on his shirt.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

16. Three pencils cost the same as two erasers.

Four erasers cost the same as one ruler.

Pencils are more expensive than rulers.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

17. A jar of jelly beans contains more red beans than green.

There are more yellow beans than red.

The jar contains fewer yellow jelly beans than green ones.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

18. Cloudy days tend to be windier than sunny days.

Foggy days tend to be less windy than cloudy days.

Sunny days tend to be less windy than foggy days.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

19. The bookstore has a better selection of postcards than the newsstand does.

The selection of postcards at the drugstore is better than at the bookstore.

The drugstore has a better selection of postcards than the bookstore or the newsstand.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

20. At a parking lot, a sedan is parked to the right of a pickup and to the left of a sport utility vehicle.

A minivan is parked to the left of the pickup.

The minivan is parked between the pickup and the sedan.

If the first two statements are true, the third statement is

- a) true
- b) false
- c) uncertain

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Coding –Decoding



6. Coding – Decoding

Coding is a method of transmitting a message between a sender and a receiver which cannot be understood or comprehended by a third person. Decoding is the ability to decipher a certain code.

The coding and decoding test is designed to judge a person's ability of deciphering the rules that have been framed to use a particular word/message and break the code to decipher the message.

An example of a coding question is as follows:

If CAPE is coded as BZOD, then how is SCARE coded?

- a) EQDFY
- b) ESDFY
- c) GQFDY
- d) RBZQD
- e) TDESQ

The answer is d). When each letter is moved one step backward, we get the corresponding letter of the code BZOD.

Exercise 1:

1. If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that code?
 - a) CPNCBX
 - b) CPNCBZ
 - c) CPOCBZ
 - d) CQOCBZ
 - e) None of these
2. In a certain code, TRIPPLE is written as SQHOOKD. How is DISPOSE written in that code?
 - a) CHRONRD
 - b) DSOESPI
 - c) ESJTPTF
 - d) ESOPSID
 - e) None of these
3. If in a code language, COULD is written as BNTKC and MARGIN is written as LZQFHM, how will MOULDING be written in that code ?
 - a) CHMFINTK
 - b) LNKTCMHF
 - c) LNTKCHMF
 - d) NITKHCMF
 - e) None of these
4. In a certain code, MONKEY is written as XDJMNL. How is TIGER written in that code?
 - a) QDFHS
 - b) SDFHS
 - c) SHFDQ
 - d) UJHFS
 - e) None of these

5. In a certain code, COMPUTER is written as RFUVQNPC. How is MEDICINE written in the same code?
- a) EOJDJEFM
 - b) EOJDEJFM
 - c) MFEJDJOE
 - d) MFEDJJOE
 - e) None of these
6. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?
- a) 5279431
 - b) 5978213
 - c) 8251896
 - d) 8543691
7. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?
- a) 318826
 - b) 318286
 - c) 618826
 - d) 338816
8. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?
- a) 246173
 - b) 214673
 - c) 214763
 - d) 216473
9. If in a certain code, TWENTY is written as 863985 and ELEVEN is written as 323039, how is TWELVE written in that code?
- a) 863203
 - b) 863584
 - c) 863903

d) 863063

10. If the letters in PRABA are coded as 27595, and THILAK are coded as 368451, how can BHARATHI be coded?

a) 37536689

b) 57686535

c) 96575368

d) 96855368

Exercise 2:

1. If VICTORY is coded as YLFWRUB, how can SUCCESS be coded ?

a) VXEEIVV

b) VXFFHVV

c) VYEEHVV

d) VYEFIVV

e) None of these

2. In a certain code, TOGETHER is written as RQEGRJCT. In the same code, PAROLE will be written as

a) NCPQJG

b) NCQPJG

c) RCPQJK

d) RCTQNC

e) None of these

3. If BOMBAY is written as MYMYMY, how will TAMIL NADU be written in that code?
- a) TIATITATIA
 - b) MNUMNUMNU
 - c) IATITATAT
 - d) ALDALDALD
 - e) None of these
4. If FRIEND is coded as HUMJTK, how is CANDLE written in that code?
- a) EDRIRL
 - b) DCQHQQ
 - c) ESJFME
 - d) FYBOC
 - e) DEQJQM
5. If in a certain language, COUNSEL is coded as BITIRAK, how is GUIDANCE written in that code?
- a) EOHYZKBB
 - b) FOHYZJBB
 - c) FPHZZKAB
 - d) HOHYBJBA
 - e) None of these
6. If GIVE is coded as 5137 and BAT is coded as 924, how is GATE coded?
- a) 5427
 - b) 5724
 - c) 5247
 - d) 2547

7. If PALE is coded as 2134, EARTH is coded as 41590, how is PEARL coded?
- a) 29530
 - b) 24153
 - c) 25413
 - d) 25430
8. If in a certain language ENTRY is coded as 12345 and STEADY is coded as 931785, then which is the correct code for word below?
- TENANT
- a) 956169
 - b) 196247
 - c) 352123
 - d) 312723
9. If in a certain language if ENTRY is coded as 12345 and STEADY is coded as 931785, then which is the correct code for below word?
- NEATNESS
- a) 25196577
 - b) 21732199
 - c) 21362199
 - d) 21823698
10. If in a certain language if ENTRY is coded as 12345 and STEADY is coded as 931785, then which is the correct code for word below?
- SEDATE
- a) 918731
 - b) 954185
 - c) 814195
 - d) 614781

Blood Relations



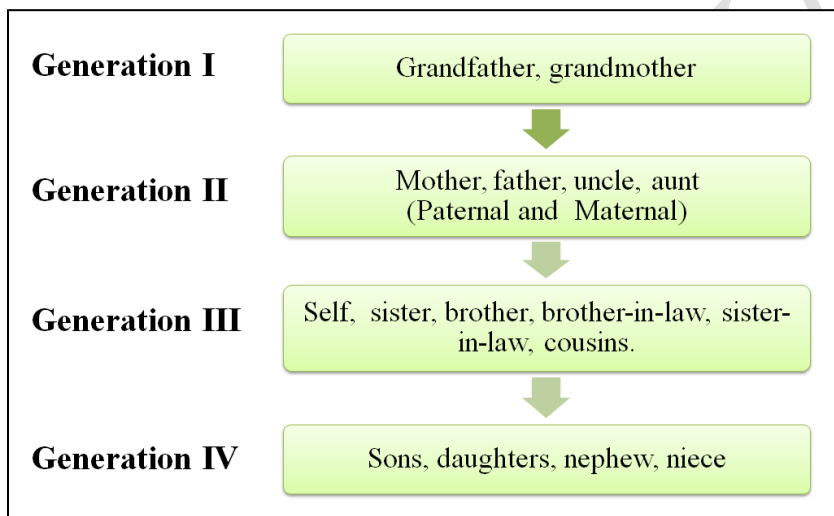
7. Blood Relations

Blood relations questions are based on the family tree concept. Questions are asked based on the variety of relationships in the family.

They can be represented diagrammatically. Broadly, such questions deal with four levels of relationships:

How to solve blood relation problems:

To solve the blood relation questions easily we need to observe the family tree.



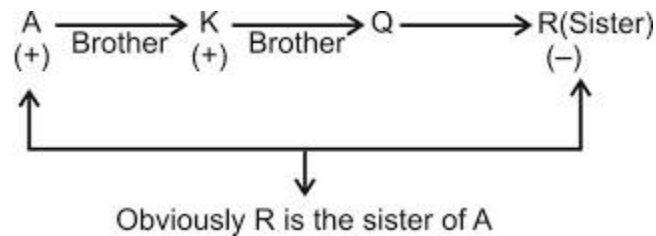
If you assume you are in the middle then in your generation, you have sisters, brothers, cousins, brother-in-law, sister-in-law. You can easily observe in each generation which of the relations you might have.

In solving the blood relation problems we usually assume the speaker is in the position "you" and try to prepare the diagram according to the question.

It is always best practice to denote Males and Females with notation.

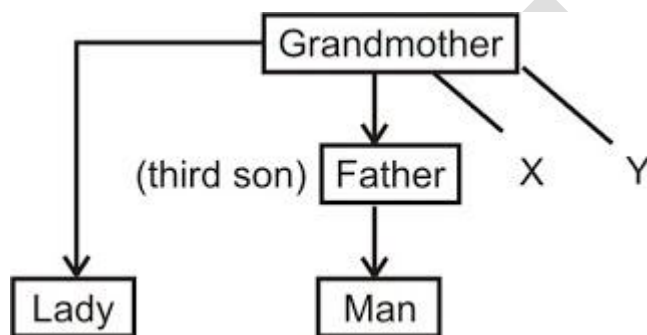
For example:

1. A is the brother of K, K is the brother of Q and R is the sister of Q. How is R related to A?



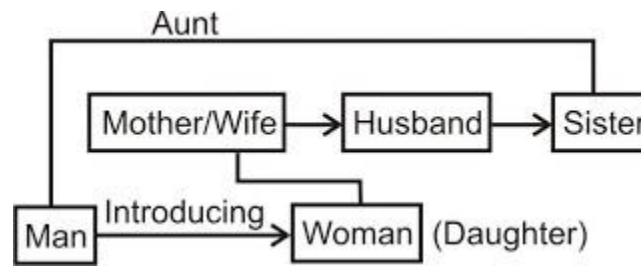
Simple one, from the diagram it is clear that R is sister of A.

2. Pointing to a man, a lady says that his father is the third son of her grandmother. How is the lady related to that man?



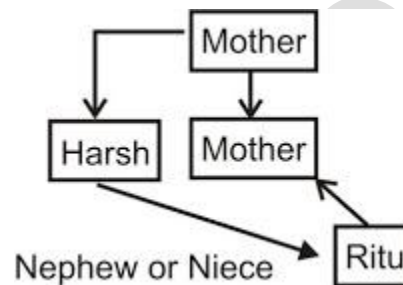
First we must read this question from the back and denote the relationship between the lady and grandmother. Son of her grandmother means, that person is the lady's father or uncle. Now to the man the lady is pointing is son of one of these 3 sons. If the lady and the man has children of two different people then they are cousins, otherwise they are siblings. So the lady is either cousin or sister.

3. Introducing a woman, a man said, "Her mother's husband's sister is my aunt." How is the man related to that woman?



A person's mother's husband means that person father. Now this person's sister is speaker's aunt so the two are cousins.

4. Introducing Harsh, Ritu said, “He is the only son of my mother’s mother.” How is Ritu related to



Now Ritu's mother's mother means her grandmother. Grandmother’s only son is Ritu's uncle. But we don't know Ritu is male or female so Ritu relationship with harsh cannot be determined, it’s either nephew or niece.

Practice the following and use your own diagrams:

Example1

- Susan said ‘his mother’s only daughter is my mother’. How is Susan related to that man.
- a) Sister
 - b) Niece
 - c) Nephew
 - d) Wife

e) Uncle

The answer is b). This can be clearly understood by creating a family tree.

Example 2

▪ A and B are married couple. X and Y are brothers. X is the brother of A. How is Y related to B?

- a) **Brother-in-law**
- b) Brother
- c) Cousin
- d) None of these

A and b are husband and wife, And X and Y are brothers at the same time X is A's brother which means A, X, And Y are siblings so Y is B's Brother-in-law.

1. A person who is the wife of my daughter's brother is my
 - a) Niece
 - b) Daughter-in-law
 - c) Daughter
 - d) Sister
2. P is the daughter of Q's brother's wife's father-in-law. P is Q's _____
 - a) Niece
 - b) Daughter
 - c) Sister
 - d) Sister-in-law
 - e) Mother
3. Showing a photograph Philip said, "She is my mother's mother's son's daughter". How is the person in the photograph related to Philip?
 - a) Sister
 - b) Cousin
 - c) Niece
 - d) Mother
 - e) None of these
4. How is my father's mother's only daughter-in-law's brother related to me?
 - a) Uncle
 - b) Cousin
 - c) Nephew
 - d) Mother

5. How is Mike's grandmother's only child's husband's mother related to Mike?
- a) Mother
 - b) Grandmother
 - c) Aunt
 - d) Sister
 - e) Cousin
6. How is Sean's father-in-law's only daughter's daughter related to Sean?
- a) Nephew
 - b) Brother
 - c) Daughter
 - d) Uncle
 - e) Father
7. How is my daughter's daughter's father's son related to me?
- a) Niece
 - b) Grandson
 - c) Daughter
 - d) Aunt
 - e) Mother
8. How is Kelwin's mother's only daughter-in-law's son's wife related to Kelwin?
- a) Daughter
 - b) Daughter- in-law
 - c) Granddaughter
 - d) Mother

9. How is Timothy's mother's father's son related to Timothy's father?
- a) Cousin
 - b) Uncle
 - c) Brother-in-law
 - d) Son-in-law
10. Shahira's father, pointing towards a person, said, "He is the brother of my father's only sibling". How is the person related to Shahira?
- a) Father
 - b) Uncle
 - c) Brother
 - d) Grandfather
11. Andy is Belle's father, Belle is Catherine's daughter, Eric is Daisy's only sibling. Catherine is Daisy's only daughter. How is Belle related to Eric's niece?
- a) Niece
 - b) Daughter
 - c) Mother
 - d) None of these
12. Zen's father's only brother's wife's only daughter's paternal uncle is Zen's mother's
- a) Father-in-law
 - b) Husband
 - c) Son
 - d) Uncle

Analytical Problems



8. Analytical Problems

Analytical Problems

Analytical problems involve using a given set of information to arrive at a particular solution. It contains loads of information, data or conditions which require a careful selection of critical data points to reach a solution. This requires a systematic and clear thought process.

Example:

Three people live in Hopper St. Can you sort out their names, house numbers and their dog's names?

~~✗~~ **Dogs:** Bob, Patch, Toby

~~✗~~ **Surnames:** Black, Turnip and Spade

~~✗~~ **Numbers:** 1, 2, 3

a) **Dick lives at a higher number than Mr. Spade; neither of these own Bob.**

b) **Toby lives at No. 1**

c) **Jim Black does not live at No. 3**

Answer:

| | | | |
|-----------------|-------|--------|-------|
| Name | Jim | Dick | Mike |
| Surname | Black | Turnip | Spade |
| House No | 2 | 3 | 1 |
| Dogs | Bob | Patch | Toby |

Problem 1:

In a treasure hunt, John is south of the treasure chest. Ruth is behind John. Mozart is north of the treasure running down the path in the opposite direction. Raphael is behind Ruth. As the treasure hunters pass, Mozart turns around and joins the pursuit. He runs in behind Ruth ahead of Raphael. John runs faster and is alongside the treasure chest on the west. Ruth runs faster and is alongside the treasure chest on the east. Who amongst the treasure seekers is south of the treasure?

- a) John
- b) Ruth
- c) Raphael
- d) Mozart

Problem 2:

Kent has worked more years than Ross, who has worked fifteen. Milton has worked twenty five years, more than Kent and Ross combined. Clive has worked eight years which is less than Kent's experience. How many years has Kent worked?

- a) Eight
- b) Nine
- c) Ten
- d) Eleven




Problem 3:

Tonight the teashop in town, Bags with Riches, is having a tea-fest. Along with tasty snacks and pastries, they'll have a number of different teas available for customers to try, free of charge. Determine the full name of each person working at the teashop, the favourite flavoured tea of each worker, and the snack each worker made for the event:

- a) Ms. Croupe didn't like the Russian caravan tea. Travis brought cinnamon rolls.
- b) The worker who brought apple crisp didn't like peppermint tea.
- c) Sara, whose last name wasn't Tanner, didn't bring the chocolate chip cookies. Martin didn't like orange pekoe tea.
- d) Sara's last name is Manor.
- e) The four workers are Sheila, the one who likes green tea, Mr. Walker, and the man who brought peanut butter fudge.
- f) The person who loved peppermint tea brought chocolate chip cookies.

Problem 4:

Three children live at houses with different coloured doors. What colour door do they each have, what Number House do they live at and on what Road?

- | | | |
|---|---------|---|
|  | Door: | Blue, Green, Red |
|  | Number: | 1, 2, 3 |
|  | Road: | Bridge Street, Cherry Close, Sandy Lane |

- a) Sophie's house No. is 1 lower than Jake's.
- b) George does not live at House No. 1, but does have a green door.
- c) One child lives at No. 2 Cherry Close.
- d) House No. 1 has a red door, but is not on Sandy Lane.

Problem 5:

There are six friends A, B, C, D, E and F. Each one is proficient in one of the games, namely Badminton, Volleyball, Cricket, Hockey, Tennis and Polo. Each owns a different coloured car, namely yellow, green, black, white, blue and red.

- D plays Polo and owns a yellow coloured car.
 - C does not play either Tennis or Hockey and owns neither blue nor yellow coloured car.
 - E owns a white car and plays Badminton.
 - B does not play Tennis; he owns a red coloured car.
 - A plays Cricket and owns a black car.
1. Which coloured car F owns?
- a) Green
 - b) Blue
 - c) Either Green or Blue
 - d) Data inadequate
 - e) None of these

2. Who plays Volleyball?

- a) B
- b) C
- c) F
- d) Data inadequate
- e) None of these

3. Which of the following combination of colour of car and game played is not correct ?

- a) Yellow - Polo
- b) Green - Tennis
- c) Black - Cricket
- d) Red – Hockey
- e) None of these

Problem 6:

Jayant, Kamal, Namita, Asha and Tanmay are five members of a family. They have their birth dates from January to May, each member in one of these months. Each one likes one particular item for his/her birthday out of Bengali Sweets, Chocolates, Pastries, Ice Cream and Dry Fruits.

- The one who likes Pastries is born in the month which is exactly middle in the months given.
- Asha does not like Ice cream but brings Chocolates for Jayant in February.
- Tanmay who is fond of Bengali sweets is born in the next month immediately after Namita.
- Namita does not like Dry fruits or Ice Cream.

1. What is the choice of Kamal ?
 - a) Ice cream
 - b) Bengali sweets
 - c) Dry fruits
 - d) Cannot be determined
 - e) None of these

2. Which combination of month and item is true for Jayant ?
 - a) March -- Pastries
 - b) February -- Pastries
 - c) February -- Ice cream
 - d) Cannot be determined
 - e) None of these

3. In which month was Kamal born ?
 - a) January
 - b) May
 - c) January or May
 - d) Data inadequate
 - e) None of these

4. What is the choice of Asha ?
 - a) Pastries
 - b) Dry fruits
 - c) Bengali sweets
 - d) cannot be determined
 - e) None of these