

## 6.0 Logical Reasoning Review

The word 'logic' is derived from the Greek word 'logos', which means a word that expresses a thought or some information. This section, accordingly, measures your ability to comprehend and synthesise the information given in the question, without bothering with the truth or accuracy of that information. You will be asked to draw conclusions from statements, choose between strong and weak arguments, identify assumptions implicit within innocuous-looking statements and even arrive at decisions in light of the given information.

You will also be required to use your lateral thinking skills on questions that require you to decode patterns—both numerical and visual—and series, make sense of relationships and understand directions. The key, while attempting Logical Reasoning questions, is to focus only on the information given to you and not allow any of your own knowledge, experiences or presumptions to cloud your judgment.

**The first section 'Critical Reasoning', includes the following topics:**

1. Conclusion based questions
2. Inference based questions
3. Assumption based questions
4. Questions on strengthening/weakening

**The second section 'Deductions', includes the following topics:**

1. Statement-Conclusion
2. Statement-Assumption
3. Statement-Course of Action
4. Fact analysis
5. Statement-Argument

**The third section 'Analytical Puzzles', includes the following topics:**

1. Analytical Puzzles
2. Input-Output

**The fourth section 'Other Reasoning', includes the following topics:**

1. Missing value in figures
2. Set Theory
3. Decision Making
4. Ranking Test
5. Venn Diagrams
6. Syllogism

## 6.1 Top Tips to Prepare for Logical Reasoning

1. You will get **36 questions** in the Logical Reasoning section on the NMAT by GMAC™ that you will have to attempt in **40 minutes**. You will have about 1 minute for each question.
2. This section will test you on two areas of Reasoning—Verbal Reasoning and Analytical Reasoning.
3. Read every part of the question carefully. Similarly, make sure you have looked at each answer choice before selecting your final answer. Even if you like an option at the first glance, make sure you have taken a look at all the remaining options as well before marking your answer.
4. NEVER assume or use any information that is not provided in the question. This section is not trying to assess your general knowledge. Consider ONLY the information given in each statement and use this to answer the question.
5. Pay special attention to words like ‘all’, ‘some’ or ‘none’ when you read the factual information provided in each question. Other qualifying words such as ‘other than’, ‘only’ or ‘unless’ are also important. These words can play a critical part in precisely specifying the facts that need to be used while reasoning.
6. Try to represent the given information pictorially, especially in arrangement questions, or as a Venn diagram in syllogism questions.
7. Logical Reasoning skills cannot be developed overnight, so make sure you spend a lot of time before the test practising Logical Reasoning questions and analysing your mistakes.

## 6.2 Critical Reasoning

## 6.3 What is Measured?

The critical reasoning section will test you on your ability to analyse arguments logically. It will present you with a small passage in the form of an argument and you will be required to use logic to evaluate the strength of the arguments, identify assumptions and conclusions, provide supporting statements, replicate the reasoning and so on.

This section not only tests your understanding of English; it also tests your logical reasoning ability.

## 6.4 Overall Test Taking Strategies

1. Read the passage carefully. Identify the premises, assumptions and conclusion.
2. Make sure you have identified the conclusion of the passage correctly.
3. Read the question stem to understand what has to be done (strengthen/weaken/find assumption etc.) and then try to formulate a broad idea in your mind.
4. Go through the answer choices and use the process of elimination to arrive at the correct solution.

## Introduction

**Critical reasoning** is a process. It involves conceptualisation, analysis and application of objective, rational reasoning in order to arrive at conclusions.

To be skilled in critical thinking is to be able to deconstruct one's thinking into individual arguments, analyse each one on its merit, assess its validity and improve upon it. The first step in this process is gaining an understanding of the elements of reasoning.

In critical reasoning, we are given an argument (a short paragraph) and asked to answer questions based on it. Let us first define an argument.

Arguments constitute the basis of conversation. They are combinations of facts, data, information and opinion that aim to influence the perspective of the other person.

## Structure of an argument

All arguments follow a structure, which may either be deliberate or discovered through analysis.

At its simplest, an argument is a simple set of three things:



## 1. Facts

Facts are also referred to as **premise** in logic. By now, we can recognise the conclusion in a critical reasoning paragraph. Typically, this conclusion is proven with some information that is provided with the conclusion—this information are the **premises**. A premise (or premises) of an argument is something that is presented as being true. Although it is not proven, its truth is assumed in the given scenario.

**Premises:** *The people in this city are mad.*

*I am 5 feet tall*

*Identifying premises:*

Premise is generally preceded by words like

Because	In view of
Since	Given that

How do we spot these premises? Simple, once you remove the conclusion from the paragraph, the rest of the sentences are the premises. Another way to look at the premises is to see that they provide the 'why' for a conclusion, that is, why has the author come to this conclusion?

## 2. Conclusion

Is the final result which an argument arrives at. It is the statement/claim which you want to convince the other person about. A conclusion is drawn from the premises. These act as the support for the conclusion and reinforce the argument in its favor.

In the statement, 'I can participate in the Beauty pageant because I am 6 feet ', the part 'I can participate in the Beauty pageant' is the conclusion or result.

A useful way of spotting a conclusion is to identify its construction. It can be presented as an advice or strong recommendation, stating a preferable course of action. It may also be persuasive in its construction, highlighting the desirability of a particular decision, as compared to another.

Identifying a conclusion, look for conclusion either at the beginning or at the end of the passage. However, keep in mind that the conclusion can occur anywhere in a paragraph. In fact, in rare cases it may not be explicitly stated anywhere in the paragraph.

So, in order to identify the conclusion, ask yourself:

What is the main point of this paragraph?

What does the author want to prove?

The answer to these questions is the conclusion.

Trigger words that signal a conclusion are:

Therefore	Thus
So	Hence
Implies	Indicates

Look for statements that cannot stand alone or, look for facts that are part of the argument.

**The conclusion is the main reason for the paragraph to be written.**  
It is proven with the help of some premises.

Since the premise is stated by the author to be true, you cannot question the validity of the premise.

Recognizing the conclusion correctly is imperative and any errors in this process will most likely lead you to select an inappropriate answer choice. So spend some time to identify the correct conclusion.

### 3. Assumption

The third part of our argument. An assumption is an unstated premise that supports the conclusion. Both premise and assumption are unquestionable facts but the assumption, unlike the premise, is not explicitly stated and needs to be deciphered.

So where does the assumption come in? Most arguments are not complete logically: the gap in logic is the assumption that the author makes to prove the conclusion.

Another way to spot the assumption is to think: When does this argument not make sense? If you can complete the next sentence then you have your assumption: *The conclusion does not make sense unless \_\_\_\_\_ is true.*

Therefore, an analysis of an argument consists of:

1. Ability to identify the premises and the conclusion which they reiterate.
2. Ability to spot the unstated links in the argument while moving from facts to conclusions or vice-versa. It is these links that identify the underlying assumptions in the argument.

Critical Reasoning questions can be broadly divided into certain categories:

1. Identify the assumption
2. Identify the conclusion (Inference/ conclusion)
3. Strengthen/Weaken the argument
4. Miscellaneous question type

Critical Reasoning is a fairly common verbal question type in various Management Aptitude Tests (in GMAT, it constitutes approximately 30% of the verbal section). One can enhance one's accuracy in this section through extensive practice.

## Structure of a critical reasoning passage

As stated above, Critical Reasoning examines the reasoning skills of the test-taker. In particular, it evaluates the comfort level of the test taker with:

1. Logical argument construction
2. Argument evaluation
3. Ability to list down premises that can strengthen or weaken a stated argument

Critical Reasoning questions come in the form of a paragraph (this usually presents an argument), and a question around the paragraph. Let's look at a typical Critical Reasoning question.

## Example 1

A recent survey on the causes of stress was conducted by ABC Ltd. They worked with a sample of 100 employees of a multinational corporation and found out that people with hair loss suffer from more stress than people without hair loss. Hence, they concluded that hair loss is one of the causes of stress.

Which of the following, if true, would most weaken the argument given above?

- (A) There are other causes like financial instability that may cause more stress than hair loss.
- (B) Employees have been experiencing hair loss in recent times whereas they have been experiencing the same levels of stress for a very long time.
- (C) The study should also consider people who face no stress.
- (D) Stress may have a large number of factors that cause it.
- (E) Recently, there has been a decline in the reported instances of hair loss.

The above example can be broken down into three components:

### 1. The question stem

Which of the following, if true, would most weaken the argument given above?

### 2. The background to solve the question

A recent survey on the causes of stress was conducted by ABC Ltd. They worked with a sample of 100 employees of a multinational corporation and found out that people with hair loss suffer from more stress than people without hair loss. Hence, they concluded that hair loss is one of the causes of stress.

### 3. The answer choices

- (A) There are other causes like financial instability that may cause more stress than hair loss.

- (B) Employees have been experiencing hair loss in recent times whereas they have been experiencing the same levels of stress for a very long time.
- (C) The study should also consider people who face no stress.
- (D) Stress may have a large number of factors that cause it.
- (E) Recently, there has been a decline in the reported instances of hair loss.

## Solving Critical Reasoning questions

Let us try and understand the approach for solving Critical Reasoning questions. The process is simple:

1. Read the question stem.
2. Read the paragraph and analyse it keeping the question in mind.
3. State what a good answer can look like.
4. Now, look at the answer choices and eliminate the incorrect choices.

### **Step 1: Read the question stem.**

‘Which of the following, if true, would most weaken the argument given above?’

### **Step 2: Read the paragraph.**

The question wants us to weaken the argument, that is, the conclusion of the paragraph. Hence while reading, you have to spot the conclusion and be aware of the premises that validate the conclusion. In this case, the conclusion is ‘hair loss is one of the causes of stress’. The reason—because people with hair loss suffer from more stress.

### **Step 3: State what a good answer can look like.**

What is wrong with this argument? Well, just because hair loss and stress occur together does not mean that hair loss leads to stress. It could easily be stress that causes hair loss or they can be two random events that just co-incidentally occur together.

Here is **an interesting fact**: In the USA, it was found that beer and diapers are usually bought together in department stores. Using this fact, if I come to the conclusion that drinking beer leads to loss of bladder control (hence, the diapers) or worse still, wearing diapers leads to a craving for beer, then I am obviously wrong. So, just because two things (beer and diapers) occur together does not imply that one causes the other. This could be one of the answers.

### **Step 4: Eliminate the incorrect answer choices.**



- (A) There are other causes like financial instability that may cause more stress than hair loss.

This just shows that there are other causes; it does not negate hair loss as a cause.

- (B) Employees have been experiencing hair loss in recent times whereas they have been experiencing the same levels of stress for a very long time.

If people are experiencing the same level of stress even before hair loss, then may be hair loss does not cause the stress. Clearly if hair loss causes stress then with the advent of hair loss there would have at least been an increase in stress.

- (C) The study should also consider people who face no stress.

If I want to explore the causes for stress then studying people who have no stress will not be very helpful.

- (D) Stress may have a large number of factors that cause it.

Like the first option, this also just shows that there are other causes; it does not negate hair loss as a cause.

- (E) Recently, there has been a decline in the reported instances of hair loss.

This statement has no bearing on the main argument being discussed.

**The correct answer is option B.**

### **Some observations:**

1. What we thought our answer can look like and what was the actual answer were two different things. That's fine! Forming an approximate answer ensures that you have understood and imbibed the paragraph.
2. The key to solving a Critical Reasoning question lies in the question stem. Hence, it is important to read it first because the question stem will dictate how you will analyse the paragraph. This obviously leads us to the analysis of question stem.

So, what kind of question stems can we come across and what kinds of analyses are possible?

## Types of questions

### 1. Working with Assumption(s):

- a. **Type 1:** Find the **assumption** that the Author makes.  
Identify the gap that will takes us from the premise to the conclusion.
- b. **Type 2: Strengthen the Conclusion** that the Author makes.  
If the **assumption** that the author makes is true, then the conclusion will be strengthened.
- c. **Type 3: Weaken the Conclusion** that the Author makes.  
If the **assumption** that the author makes is false, then the conclusion will be weakened.
- d. **Type 4: Find the flaw** in the Author's reasoning.  
Similar to weaken the conclusion—the **assumption** has to be false.
- e. **Type 5: Evaluate the argument** that the Author presents.  
Information about the **assumption** i.e. whether the assumption is True or False will help us evaluate the argument.
- f. **Type 6:** Explain the discrepancy or paradox in the argument.  
What **assumption** or **new evidence** will help explain the unlikely conclusion?

### 2. Working with the Structure of the Argument

- a. **Type 1:** Describe the role that the phrases in bold play.  
Understand the **structure** of the argument
- b. **Type 2: Identify the reasoning.**  
Understand the **structure** of the argument
- c. **Type 3:** Parallel the reasoning.  
Understand the **structure** of the argument and spot a similar structure in the option choices.

### 3. Working with the conclusion

- a. **Type 1:** Identify inference.

Given the argument, which of the following **conclusions has to be true?**

- b. **Type 2:** Resolve the Paradox.

Which of the following statements **resolves the paradox?**

Let us now look at the different question types in detail:

## Conclusion based questions

Conclusion questions will ask you to conclude something from the information given in the passage. In such questions you have to arrive at a decision or judgement after careful consideration of the information given in the passage.

## Conclusion vs Inference

There is a very subtle difference between an inference and a conclusion. A conclusion in a given statement is very specific to the argument in that it is given in the passage as part of the argument while an inference is more generic and drawn from the given premises and the conclusion given in the passage. Let's take an example:

**Argument:** When children are given the sugar-rich drink 'Fonza' they start showing erratic and overly aggressive behaviour.

**Inference:** Sugar-rich drink 'Fonza' has a negative impact on children's behaviour.

**Conclusion:** The sugar-rich drink 'Fonza' causes children to behave aggressively.

Consider the example given below as well:

### Example 1

Recent advances in cataract surgery indicate that medicines and medical procedures involving superior-technology is enhancing the nation's health care costs. Cataracts are a major cause of blindness, especially in elderly people. Fifteen years ago, cataract surgery was painful and not effective all the time. However, due to rapid advancements in the technology, the success rates of the surgery have gone up drastically and is now not as expensive. These two factors have resulted in a meteoric rise in the number of cataract surgeries performed, which has, in turn, driven up the total amount spent on cataract surgery.

Which one of the following can be concluded from the passage above?

- (A) Fifteen years ago, due to the reasons mentioned in the passage, very few people had successful cataract surgery.
- (B) In the long term, the advantages of advanced medical technology will probably be out-weighed by the disadvantages.
- (C) The total amount spent on cataract surgery has increased because the increased number of people choosing to have the surgery more than offsets the decrease in cost per operation.
- (D) Fifteen years ago, cataract surgery was affordable for more people than it was last year.
- (E) Cataract surgery is not required in today's age as the technological advancements that are taking place have made such minor surgeries redundant.

## Solution

- (A) This is a close option but not the correct one. This is because 'not very effective' does not translate to 'very few successful surgeries'. These are relative expressions that cannot be quantified.
- (B) This is a very generic inference that is vague and makes far-reaching assumptions.
- (C) This is the correct conclusion. We "conclude" from the passage that even though new technology which restores vision is cheaper due to its success rate; it has resulted in more people going for the surgery which has driven up the costs again. Hence, the total amount of money spent on cataract surgery has increased.
- (D) The passage states the opposite of this.
- (E) This is irrelevant and not connected with the main argument at all.

### Inference based questions

Inference questions will ask you to infer or conclude something from the information given in the passage. The literal meaning of *infer* is to conclude something without it being explicitly mentioned. This is exactly what you are required to do on an inference question—arrive at an option that is not explicitly stated in the Passage but that can easily be concluded given the information in it.



## Inference vs Assumption

An inference is similar to a conclusion that can be drawn based on one or more elements of the statement. An inference must be true based on something that you read. An assumption is a hidden but necessary piece of evidence. An assumption is something that must be true in order for the argument to be complete and valid.

Inference questions are diametrically opposite to assumption questions. In inference questions, you have to conclude a statement that has to be true. It is not 'perhaps', 'may be', or 'most likely' true, it has to be true. Usually, these inferences are a small step away from the conclusion and in some rare cases it can be an assumption that has to be true. A good trick in these questions is to be biased towards options that use mild words such as perhaps, likely, and so on instead of all, definitely, and so on.

## Example 2

Last month three automobile manufacturers—companies H, T and S—launched new models of their respective sedans in Japan. The three models that were launched were similarly priced and had similar features. However, the sales of company S's new sedan have been far lower than those of companies H and T's new sedans in the last month.

The statements above best support which of the following as a conclusion?

- (A) The people in Japan prefer cars manufactured by companies T and H to those manufactured by company S.
- (B) The people in Japan do not like cars manufactured by company S.
- (C) Cars manufactured by company S are notorious for their flimsy build quality and poor fuel efficiency.
- (D) In the last month, company S has earned less revenue from the sale of its new sedan than companies H and T.
- (E) Company D manufactures its cars primarily for the export market and not for domestic sale.

## Solution

Do remember that the passage of an Inference question may not necessarily be in the form of an argument. In fact, most often the passage will contain a set of facts like the one above. All that the above passage tells us is that companies H, T and S have each launched a new sedan last month and that the sales of companies H and T's new sedans have been far greater than the sales of company S's new sedan. These are all facts, and the author does not provide any conclusion on the basis of these facts.

With this background, let's go through each of the options in the above question and see if we can arrive at the correct answer:

- (A) This seems very obvious but such inferences must be avoided. For all you know Japanese people might actually prefer company S cars the most but due to some supply constraints company S's new sedan may not be available in the market.
- (B) The earlier explanation applies to this option as well. In fact, this option goes a step further by concluding that Japanese people do not like company S cars at all. Since this may or may not be the case, this cannot be the correct answer.
- (C) This looks very logical because it provides a very convincing reason why the sales of company S's cars have been so low. But is that what we are supposed to do? Absolutely not. So, this option does not even come close to being an Inference. It merely explains why the sales of company S's new sedan may have been low but that is not what we are required to do in the argument.
- (D) The Correct answer. The argument tells us that the three new sedans are similarly priced. Then if company S has sold fewer cars (and by a large margin) than companies H and T, its revenues from the sale of this new sedan have to be lower than those of companies H and T. This option must be true in all cases and hence has to be the correct answer.

- (E) Like option C, this option again provides a logical explanation for company S's low sales in Japan but this may or may not be the case. In any case we are not required to provide an explanation in the first place. So, this cannot be a valid inference.

### Assumption based questions

As the name suggests, you will be given an argument in the question stem and you will need to identify the assumption that is made in this argument from the five options given to you. Let us take a look at an example:

### Example 3

Over the last six years, most of the students in Tupac city have regularly attended colleges in the neighbouring Mekon city to pursue their graduate degrees. However, according to a recent change in the education policies of Mekon city, the colleges in Mekon city are expected to increase their fees to almost the same level as those charged by colleges in Tupac city. Therefore, it can be safely concluded that colleges in Tupac city will see a surge in the number of students enrolling with them to pursue their graduate degrees.

Which of the following is an assumption on which the argument depends?

- (A) The teachers at colleges in Mekon city are generally considered far superior to those at colleges in Tupac city.
- (B) Tupac city does not have good quality colleges.
- (C) The low fees charged by colleges at Mekon city is the primary reason why students from Tupac city move to these colleges.
- (D) Students who study at colleges in Tupac city do not perform better than those who study at colleges in Mekon city.
- (E) Mekon city does not have more colleges than Tupac city.

## Solution

Always start an assumption question by paraphrasing the conclusion and the evidence.

**Conclusion (What is the author saying?)**—that there will be a surge in the enrolments at colleges in Tupac city.

**Evidence (Why is the author saying this?)**—because students in Tupac city who earlier used to move to Mekon city to pursue their graduate degrees will now not do so as the colleges in Mekon city will charge them the same fees as the colleges in Tupac city do.

Note that that conclusion is an opinion of the author but the evidence is a fact because the colleges in Mekon city are definitely looking at increasing their fees.

**Assumption**—The author must be assuming that the low fees charged by colleges in Mekon city is the single most important factor why students from Tupac city have been moving to colleges in Mekon city. If we don't assume this, the argument will fall apart. Thus, C is the correct answer.

## Strengthen and weaken the argument questions

### **Strengthening an Argument**

The key to strengthening an argument is finding the answer choice that reinforces the premises or the central assumption in some way. This can be done in two ways-

1. First, the assumption might be rephrased and presented as an answer choice. In this case, it becomes a strong argument.
2. Second, the correct answer can be a validation of the assumption through the citing of a study, survey or any other relevant piece of additional evidence that makes the assumption more likely to be true.

Essentially, any information that fills the gap present in the logic of the argument with extra information (that supports the conclusion made in the argument) strengthens it.



## Weakening an Argument

Finding a statement that weakens an argument follows the same process, only backwards.

1. First, any statement that rebuts the assumption shall weaken the argument.
2. Second, Data, information, reasoning, facts and so on that disprove or challenge the assumptions or premises used in the argument shall weaken it.

In these questions, an argument will be given to you and you will need to select from five options the one option which strengthens or weakens the argument (depending on what the question asks you to do). Let's take a look at an example of each:

#### Example 4

Of all the laptops available for sale in Ireland, those manufactured by Ivy Infotech must have the fastest processors. Over the last six months, Ivy Infotech has sold three times as many laptops as its closest competitor. Additionally, Ivy Infotech's order books are full for the next 12 months.

Which of the following options, if true, most strengthens the argument?

- (A) Ivy Infotech is the oldest manufacturer of laptops in Ireland.
- (B) Ivy Infotech has the largest market share in laptop sales in Ireland for the past five years.
- (C) Ivy Infotech sources its processors from the company which is the world's biggest manufacturer of laptop processors.
- (D) All the laptops available for sale in Ireland are the same in every aspect, except for their processors.
- (E) Due to production bottlenecks, the production of laptops by Ivy Infotech's rival companies fell by more than 60% in the last six months.

## Solution

Since this is a strengthen question, you know that it will be worded in the form of an argument. So the first step is to identify the conclusion and the evidence of this argument.

- **Conclusion (What is the argument stating?)**—Laptops manufactured by Ivy Infotech have the fastest processors.
- **Evidence (Why is the argument stating this?)**—Because Ivy Infotech has sold the maximum number of laptops in the last six months in Ireland.

But does this make sense? Can't there be some other plausible reason why the people in Ireland are buying Ivy Infotech's laptops?

- Maybe these laptops have a very sleek design, maybe they have a very long battery life, or maybe they are the cheapest laptops in the market. There can be several other reasons (other than fast processors) why the Irish are buying laptops manufactured by Ivy Infotech. This brings us to the assumption. Remember that since the passage is in the form of an argument, it must contain an assumption.
- **Assumption (the unstated evidence)**—So let's try to predict the assumption. It will be something along the lines of 'the only difference among the different laptops available in Ireland is the speed of the processor; the laptops are the same in every other aspect', because then if the people are still buying Ivy Infotech's laptops these laptops must have the fastest processors, else people would be buying some other company's laptops.
- **Strengtheners**—So now that we have identified the conclusion, the evidence, and the assumption, the option that tells us that the assumption is true has to strengthen the argument. (D) does this best and should be the correct answer.
- **Weaker**—Similarly, the option that best tells us that the assumption may NOT be true has to weaken the argument. In essence, this option will provide us with some other reason

(other than faster processors) why the sales of Ivy Infotech's laptops have been very high. (E) does this best as it gives us an alternative reason why people might be buying Ivy Infotech laptops—because the laptops of other brands are in short supply—and not because Ivy Infotech laptops have the fastest processors.

## Miscellaneous question types

### Explain the paradox

#### Example 5

Kamlesh: It is quite surprising that junk food consumption has increased by 20% from last year.

Kavita: What is so surprising about that? As it was last year, junk food is still popular.

Kamlesh: The Government of India has been putting in sustained efforts to publicise the harmful effects of junk food since last year. So I expected junk food consumption to go down.

**Which of the following responses can Kavita make to resolve the paradox?**

- (A) Junk food consumption has steadily increased every year.
- (B) Kamlesh and Kavita rarely eat junk food.
- (C) Currently, the youth in the country are very health conscious and regularly watch what they eat.
- (D) Most people eat junk food because it is served quickly and can be eaten while travelling.
- (E) Junk food consumption is restricted to a particular segment of society.

## Solution

### **Step 1: Read the question stem.**

Which of the following responses can Kavita make to resolve the paradox? Resolving paradoxes are very similar to 'Weakening the Argument' questions. Think about it. The paradox exists because the author has made some conclusion that the premise does not support.

### **Step 2: As usual, we will focus on Conclusion-Premise-Assumption.**

Remember that you now need to state the assumption negatively to weaken the argument.

Conclusion/What?: It is quite surprising that junk food consumption has increased by 20% from last year.

Premise/Why?: The government of India has been putting in sustained efforts to publicize the harmful effects of junk food since last year.

### **Step 3: State what a good answer can look like.**

Assumption: Kamlesh is assuming that just because something has been deemed unhealthy, people will stop eating it. We need to negate this assumption, we can do this by introducing another cause.

### **Step 4: Eliminate the incorrect answer choices.**

(A) Junk food consumption has steadily increased every year.

Increase in junk food do not explain why junk food consumption is rising despite campaigns to discourage junk food consumption.

(B) Kamlesh and Kavita rarely eat junk food.

What Kamlesh and Kavita do in their personal life cannot explain aggregate figures for junk food consumption.

(C) Currently, the youth in the country are very health conscious and regularly watch what they eat.

This actually intensifies the paradox because if people are health conscious then they will reduce their junk food consumption.

- (D) Most people eat junk food because it is served quickly and can be eaten while travelling.

This introduces a new reason as to why people prefer junk food. Hence it negates the assumption that Kamlesh makes and helps in explaining the paradox.

- (E) Junk food consumption is restricted to a particular segment of society.

Just like option (C), this option also strengthens the paradox. If consumption of junk food is restricted to a specific segment of society then its use should remain stable and not increase.

**The correct answer is option D.**

## Parallel the reasoning

### Example 6

The fear of contracting swine flu is very high in Asian countries. If only these people could compare the number of people who actually contract swine flu (very few) with the number of people who actually contract the common cold (high), then this fear would be assuaged.

**Which of the following is most closely similar to the reasoning used in the argument above?**

- (A) I do not understand why people fear cockroaches even if they are numerous; the real danger lies with tigers even though they are few.
- (B) I do not understand why people fear cockroaches even if they are numerous; the real danger lies with tigers because they are too numerous to count.
- (C) I do not understand why people fear cockroaches, they are very few; the real danger lies with tigers because they are too numerous to count.
- (D) I do not understand why people fear cockroaches, they are very few; the real danger lies with tigers because though they are few they can hide in the unlikeliest of places.
- (E) I do not understand why people fear cockroaches even if they are few; the real danger lies with tigers as they are few.



## Solution

### **Step 1: Read the question stem.**

Which of the following is most similar to the reasoning used in the argument above?

Pay close attention to how the original argument is structured, you will have to replicate the same structure in the answer.

### **Step 2: Find the structure of the original argument.**

The original argument states that you should not fear something because it occurs rarely, instead you should fear the things that occur a greater number of times.

### **Step 3: State what a good answer can look like.**

The fear for tigers is very high in Asian countries. If only these people could contrast the number of tigers (very few) with the number of cockroaches (high) then this fear would be assuaged.

Of course, we should not have pre-conceived notions about tigers and cockroaches. Hence the answer can easily look like this:

The fear for cockroaches is very high in Asian countries. If only these people could contrast the number of cockroaches (very few) with the number of tigers (high) then this fear would be assuaged.

### **Step 4: Eliminate the incorrect answer choices.**

From the above step, the answer clearly has to be (C).

**The correct answer is option C.**

## Tips for solving questions on critical reasoning

### **1. Start by reading the question stem.**

Doing this shall allow you to identify the type of question (Assumption, Strengthen, Weaken, Inference, and so on). This shall let you categorise the different elements of the argument structure, for example, the premises, the assumption and the conclusion.

### **2. Try to predict the answer before looking at the options.**

It is not necessary to have a detailed solution, but a generic statement or a broad outline/framework will help point you in the right direction by eliminating choices.

### **3. Analyse the given answer choices.**

Carefully read through all 5 answer choices. While doing so, compare these choices with your prediction. There will be certain choices that can be eliminated upfront – they will either be beyond the scope of the argument, too narrow in their construction or too vague and so on. Once you have eliminated 2–3 options through this process, the remaining 2–3 options can then be evaluated on the basis of their correctness.

### **4. Avoid options that are extreme or exaggerated in their construction.**

For an option to be the correct answer, it must always hold true within the context of the argument. However, one should be cautious of modifiers that amplify one aspect of the premise or make overstatements. They usually signify an incorrect answer. For example, if the argument states that “certain phones made by the company were defective”, then an answer choice that claims that “most of the phones made by the company were defective.” Will be incorrect. Also, beware of extreme words like “always”, “only”, “never”, “none” and so on. Usually, these options will be incorrect.

### **5. Be conscious of a change in the scope of the argument.**

Scope refers to the specific aspects of a topic. For example, the topic of a passage may be “Bollywood” and its scope may be “the changing face of the female lead over the years”. Thus, the scope is a more specific, narrower delineation of the topic. In critical reasoning questions, it is extremely important to identify those answer choices that shift the scope of the argument, albeit slightly.

For example, the passage may present a study that claims that there has been an increase in the natural disasters plaguing the state of Uttarakhand. In this case, an answer choice that talks about the increased number of earthquakes in the state, though tempting, will actually be incorrect. This is because natural calamities are not restricted to earthquakes only. This alters the scope of the initial argument.

## 6.5 Deductions

## 6.6 What is Measured?

This section will test you on your ability to use logic to evaluate the strength of arguments, draw assumptions and inferences from statements, evaluate effective courses of action and so on.

This section focuses on the analysis and interpretation of various statements – with respect to their structure and application.

## 6.7 Overall Test Taking Strategies

1. Logic does not mean common sense. So, do not use common sense or any outside information while answering questions. Only focus on the statement and options given to you.
2. Read the question carefully and watch out for terms such as must, always, could, might and so on, as these could define the difference between a correct and an incorrect answer choice.
3. Avoid extreme options in Inference-based questions.

# 1 Introduction

**Logic**, which derives from the Ancient Greek word, *logike* refers to the systematic study of the various kinds of arguments. A valid argument is one where there is a logical, rational correlation between the assumptions made in the argument and the conclusions derived.

Questions based on reasoning are regularly asked in NMAT by GMAC™ and are quite challenging. Their difficulty level is higher as compared to the other management entrance examinations and comprehensive practice across the various question types is required in order to enhance one's accuracy level.



**Important Learning:** Complete the practice tests to improve your comfort level with the various types of questions. This shall also help ascertain areas that prove challenging with respect to comprehension and analysis. Identify these question stems and practice extensively. Use the method of elimination in order to arrive at the correct solution.

Deductions are an integral part of competitive exams. They aim to measure a candidate's ability to draw logical conclusions based on statements or arguments, and to identify the strengths and weaknesses of those arguments. It is important to keep in mind that the statements and assumptions in logical reasoning might defy your expectations rooted in the real world.

For instance, consider the statement: Eating a lot makes you lose weight. (*This goes against the general knowledge that eating a lot leads to obesity, but within the limits of logical reasoning, this is a valid argument.*)

Now, if we state that Rahul has lost weight, then based on the information provided we can conclude that Rahul eats a lot.

These questions will, in part, test your language or comprehension skills. You will only be able to ascertain the correct answer if you are able to comprehend the argument or question correctly.

**Questions based on reasoning are mostly on the application of the two types of logic:**

1. Deductive logic
2. Inductive logic



## ***Deductive logic***

**Deductive logic**, also known as the “**from the top down**” **approach**, starts with a general idea and works down to the details. It is a basic form of valid reasoning. As stated above, it starts out with a general statement, or hypothesis, and examines the possibilities to reach a specific, logical conclusion.

Deductive reasoning usually follows steps. There is a set of premises followed by a conclusion. Syllogisms constitute a common manifestation of deductive reasoning wherein two statements are given and a conclusion is drawn on the information provided in these statements. For example, the premise “All A is B” could be followed by another premise, “All C is A.” These statements would lead to the conclusion “All C is B.” Syllogisms are considered an effective tool to assess the validity of an argument.

For example, “All women are intelligent. Anna is a woman. Therefore, Anna is beautiful.” For deductive reasoning to be valid, the hypothesis must be correct. The premises are assumed to be true. Hence, the conclusion is logical and true. In deductive reasoning, if something is true of a class of things in general, it is also true for all members of that class. Questions based on necessary and sufficient conditions also use deductive reasoning.

### *Inductive logic*

**Inductive logic**, also known as the “**from the bottom up**” **approach** reasoning, is different from deductive logic in which the reasoning is based on possibilities, not on certainties. Inductive reasoning draws generic conclusions from specific information. Essentially, broad inferences are drawn from a specific piece of data. This is called inductive logic.

Inductive reasoning allows for the possibility of the conclusion to be tentative, even though some other conclusion that is contrapositive may also be true. For example: “Rekha is a teacher. Rekha is tall. All teachers are tall.” This may or may not be correct.

***Common types of Deduction based questions are:***

1. Statement-Conclusion Questions
2. Statement-Assumption Questions
3. Statement-Course of Action Questions
4. Fact-Analysis Questions
5. Statement-Argument Questions

## 2 Statement and Conclusion Questions

A conclusion is something that is not directly stated but can be implied from the given information. An inference, on the other hand, is an extension of an argument, not a necessary part of it.

A conclusion is similar to an inference. For example, if we say that *Raghav is the most intelligent student in his class*, then from this statement we can easily conclude that Vivek, who studies in the same class, is not as intelligent as Raghav. Note that we have arrived at this conclusion even though Vivek is not explicitly mentioned anywhere in the statement.

The difficulty with conclusion questions is that we always have a tendency to over infer by reading too much between the lines or by using our own knowledge to answer questions. You must avoid doing these two things.

### Tips for approaching conclusion questions

Usually in Critical Reasoning questions, the argument comprises both a premise and assumptions. In Conclusion Questions you are required to draw a conclusion based on the information given. Generally, conclusion based questions adopt the following structure:

1. The statements above, if true, best support which of the following as a conclusion?
2. Which of the following inferences is best supported by the statement made above?
3. Which of the following conclusions can most properly be drawn from the information above?
4. If the statements above are true, which of the following must be true?

A key point to be remembered is that the correct answer choice is ***the one that extends the premises a step further***. Moreover, it should be in the same tone (positive, negative, neutral) that comes across in the argument.

### Things to keep in mind for conclusion questions:

1. These questions test your ability to analyse and interpret a set of statements.
2. Answers with extreme wordings should be avoided. Conclusion answers typically do not use *only*, *always*, *never*, *best* or *any strong words* that present extreme scenarios. The right answers on conclusion questions will generally use more qualifiers and less extreme language.
3. Try to fully understand what the passage's point is and the exact reasoning so that if the question asks you to extend that reasoning, you are able to do so accurately.
4. Use the process of elimination. Conclusion questions typically have two or three good answers. The best way to tackle these questions is to gradually eliminate the possible answers until you have one or two and then choose the last one by scope.
5. An option which is not a correct conclusion may seem very close but will challenge the premise/given conclusion in some way or another.

## Types of questions

### Questions with two conclusions

Here is how the answer choices typically look in a conclusion question:

- (A) Only I can be concluded
- (B) Only II can be concluded
- (C) Either I or II can be concluded
- (D) Neither I nor II can be concluded
- (E) Both I and II can be concluded

Let us take a look at an example:

**Statement:** With TV channels and other media broadcasting news, there has been an alarming decline in newspaper reading habits, especially among the younger generation.

**Conclusion I:** Reading of newspapers should be encouraged.

**Conclusion II:** TV news is better than newspaper news.

### Solution

The statement says 'alarming decline', which makes conclusion I a valid conclusion. Conclusion II is not valid.

**The correct answer is A.**



### Questions with more than two conclusions

You can even get questions with more than two conclusions associated with them. Let us take a look at an example:

**Statement:** All those who had passed the eligibility test were jobs as teachers in government schools.

**Conclusion I:** All those who were given jobs as teachers in gov schools had passed the eligibility test.

**Conclusion II:** No government school now is without teachers v not passed the eligibility test.

**Conclusion III:** Some government schools now have teachers w passed the eligibility test.

**Conclusion IV:** No school earlier had teachers who had passed eligibility test.

- (A) Only I can be concluded
- (B) Only II can be concluded
- (C) Only III can be concluded
- (D) Only I and III can be concluded
- (E) Only III and IV can be concluded

### Solution

Although all those who had passed the eligibility test were given jobs, jobs could also have been given to some people who had not passed the eligibility test. We also do not know if the number of people who passed the eligibility test was big enough to fill positions in all schools. Also, we cannot conclude anything about the situation before this particular event about given jobs to people who had passed the test.

**The correct answer is C.**

### 3 Statement and Assumption Questions

An assumption is an unstated premise that supports the conclusion. An assumption provides logical support to the given statement of the question. In other words, we can say that an assumption is a concept, thought or view that is considered to be true and taken for granted. An assumption is the hidden part of a statement that is neither directly explained nor explicit. It is implicit in the flow of the argument.

Both premise and assumption are unquestionable facts but the assumption, unlike the premise, is not explicitly stated and needs to be deciphered. Assumption is something that is taken for granted in the context of a statement. For instance, 'All kids are happy when they get new gadgets. Therefore, Vicky will be happy when he gets the new mobile phone.' In this, the assumption is that Vicky is a kid. Without this assumption, the argument will make no sense. We can also assume that mobile phone is a gadget.

Questions with statements and assumptions are common in the logical reasoning section of entrance examinations. An assumption question asks you to identify an unstated premise of the statement. As you read the statement, try and identify a gap in the underlying argument. The gap can only be closed by stating out aloud what is now being assumed.

## Identifying an assumption

While saying something, a person does not state each and every aspect of his/her views. There are many things, views, thoughts, and so on that remain unsaid. These 'unsaid' things, views, thoughts, and so on are considered as 'assumptions'.

An assumption is an important part of any argument. Almost all arguments are based on some assumption or the other. The most important aspect of assumptions is that they are implicit, that is, they will never be written explicitly in the statement/argument. However, the assumption must be true for the argument's conclusion to be true.

## Testing an assumption

One of the most effective methods to solve questions based on assumptions is the 'negating method'. Any communication, be it written or verbal, makes certain assumptions. These 'certain' assumptions are the very foundation of the argument. This means that if we believe the argument to be valid, the assumptions also have to hold true. Thus, in order to ascertain whether something is, in fact, an assumption, you just have to negate it. If the negation does not impact the central argument being made by the author, the said statement is not an assumption. If however, upon negating the statement, the logic of the argument collapses, then the statement is a central assumption, critical to the author's argument. For example, consider the statements given below:

**Statement:** In the recently held Doctors' conference, the session 'Ethics in medicine' surprisingly attracted a large number of participants and also received extensive media coverage.

**Assumption I:** Media is always very positive towards the issue in medicine.

**Assumption II:** The medical sector in India is known for its ethical practices.

**Assumption III:** Such a large participation was not expected.

Now, the Statement talks about a particular session in the Doctors' conference which got many participants and media coverage. All of this was surprising for the author.

Let's consider the different assumptions:

1. 'Media is always very positive towards the issue of ethics in medicine': it is tempting to select this option as an answer because the media gave extensive coverage to the session so one might think that the media is ALWAYS positive towards it. But that's not true, as the author has expressed

surprise over the extensive media coverage. That means that this behaviour is new as per the author.

2. 'The medical sector in India is known for its ethical practices': we cannot take any decision with respect to this particular assumption. On one hand, it is possible that the session is being organised because these practices are well established, but, on the other hand, it is also likely that the session is being conducted to increase awareness about ethics. As it's not stated anywhere in the sentence so this is, definitely, not the author's assumption.
3. 'Such a large participation was not expected': this assumption is, indeed, true. Since the author is surprised by the response (Public participation plus media coverage) then it is fair to assume that it was not expected. *Note: Use the keyword 'surprisingly' to identify the assumption.*

We have just demonstrated how to attempt questions that ask you to identify the assumption underlying the statement. Please note that it is important to stay within the confines of the argument and not apply external knowledge to the question at hand.

## Types of questions

### Questions with two assumptions

In assumption questions on the NMAT by GMAC™, a statement will be given to you and two possible assumptions will be written below it. The answer choices will look something like this:

- (A) Only I is an assumption
- (B) Only II is an assumption
- (C) Either I or II is an assumption
- (D) Neither I nor II is an assumption
- (E) Both I and II are assumptions

Let us look at an example:

**Statement:** Since the CEO is going on a one-month leave, asked the CFO to take over the operations of the company for that period.

**Assumption I:** The CFO has the necessary skills to run the company effectively.

**Assumption II:** The CFO may not accept the request of the CEO.

### Solution

If the CFO is being asked to take charge of the company, it is definitely implied that he has the skills to do so. Thus, Assumption I is a valid assumption. Whether the CFO accepts the offer or not is in no way implicit in the given statement. Thus, Assumption II is not a valid assumption.

**The correct answer is A.**



## Tips for approaching assumption questions

### Building Proficiency in the Question Type

- (a) **Step I:** Review the theoretical concepts given at the beginning of the chapter. Study the examples and understand the application of principles.
- (b) **Step II:** After reviewing the theory, start practising the questions given in the book. At this point in time, focus on quality and not quantity. This means, attempt a limited number of questions each day, analyse your responses and redefine your strategy. Always try and use the 'negation method' for solving these questions.

You have to work as a detective and find out the hidden premise which is the assumption through a critical analysis of the data provided in the argument. Keep in mind these four rules before you start:

- (a) Use only the data that is provided in the argument. Do not utilise outside knowledge unless specifically mentioned.
- (b) Always consider the statements and assumptions to be true. Do not judge them based on your own conception of absurdity.
- (c) An assumption is not a reiteration of an already stated premise.
- (d) Choose the most appropriate answer based on a valid reasoning keeping in mind the following elements:
  - (i) Assumption must always be true.
  - (ii) Look out for words such as *only*, *best*, *always* and so on. These words reduce the chances of an option being a valid assumption.
  - (iii) Watch out for connecting words as they could show an implicit similarity, such as *similarly*, *likewise*, or a contrast, such as *yet*, *however*, *nonetheless*.
  - (iv) *Most* does not mean *all*.

- (v) *Many* does not mean *most*.
- (vi) The Assumption *must* be implicit in the given statement.  
If it *may* or *may not* be implicit, then it is not a valid assumption.

Let us look at one more example:

**Statement:** Organisations should promote people based on their contribution to the company and not on the duration of their service within the company.

**Assumption I:** The duration of service is not a reflection of the contribution that an employee has made to the company.

**Assumption II:** It is possible to empirically measure the contribution each employee has made to the company.

- (A) Only I is an assumption
- (B) Only II is an assumption
- (C) Either I or II is an assumption
- (D) Neither I nor II is an assumption
- (E) Both I and II are assumptions

### Solution

Since the statement concludes that the length of service should not be the criteria used to determine whether to promote a person or not, it is obviously being assumed that there is no direct correlation between the length of service and the contribution an individual has made to the company. So I is an assumption. Again, when the statement concludes that promotions should be based on the contribution of each person to the organisation, it assumes that such contributions can be empirically measured. Thus, both the assumptions are implied in the argument.

**The correct answer is E.**

## 4 Statement and Course of Action

In questions on Course of Action, you have to read the statement, analyse it, identify its cause and decide on an apt course of action that should be followed in that situation. A suggested course of action should be practical, pragmatic and connect with the realistic aspect of life.

## Structure of the questions

### **Part 1: Statement**

As the name suggests, there will be a statement that will define the problem. You have to read the statement and identify the underlying problem.

### **Part 2: Course of Action**

This part shall contain possible solutions or decisions that can be taken with respect to the problem. The candidate has to decide which course of action logically follows the situation and can be adopted.

Sometimes, it might be difficult to figure out the right course of action but these can be solved quite easily with the help of a logical mind frame.

### Pattern of questions

There are two types of question patterns. The first one is based on a problem and suggested course of action which can help in the resolution of the problem. The second one includes a fact or situation and suggested courses of action which could improve the situation. So, while attempting this segment, first decide whether the given statement is based on a problem or is describing a fact/situation.

In **Problem and Solution based pattern**, the given statement presents a problem and the suggested course of action presents solutions which can be accepted as appropriate, if they solve or minimise the problem and are practically possible. We have to keep in mind that a prescribed course of action that solves the problem, but is not practically possible is of no use and must definitely be rejected.

## Statement

There is a widespread waterlogging in the city after the recent heavy rains and large parts of the city are inundated.

**Courses of Action:**

- I. Pumping out water from affected areas must be started immediately.
- II. The municipal corporation should invite suggestions to prevent recurrence of the situation.

**Mark your answer as follows:**

- (A) If only I follows.
- (B) If only II follows.
- (C) If either I or II follows.
- (D) If neither I nor II follows.
- (E) If both I and II follow.



## Solution

The statement mentions two problems – waterlogging and inundation caused by rains. Since nothing can be done about the rains, we need to have solutions to get relief from waterlogging. Also, the *problem is urgent*, and hence requires a solution that will work and get results immediately. Action I is a valid course of action while action II is a long-term suggestion that will not get any solution to the *present problem*. Hence, the best choice is option (A).

**The correct answer is A.**

**In Fact and Improvement based pattern**, the given statement provides a simple fact and the suggested course of action suggests ways to improve the condition.

## Types of questions

### Questions with two courses of actions to choose from

In this question type, you will be given a statement followed by two courses of action or decisions. You will be required to analyse the situation and then decide which of the two decisions to take. The choices will typically read as follows:

- (A) Only I should be pursued
- (B) Only II should be pursued
- (C) Either I or II should be pursued
- (D) Neither I nor II should be pursued
- (E) Both I and II should be pursued

Let us take a look at an example:

**Statement:** Researchers are feeling agitated as libraries are equipped to provide the right information to the right users at the right time in the required format. Even though users are not aware about the various services available for them.

**Courses of Action I** All the information available to the libraries should be computerised to provide faster services to the users.

**Courses of Action II** Library staff should be trained in computer operation.

### Solution

Clearly, the library needs to be provided with the essential facilities and trained personnel for better services. So, both the courses follow.

**The correct answer is E.**

Questions with three courses of actions to choose from

You can sometimes also get three courses of actions to choose from. Let us take a look at an example:

**Statement:** Workers shifting from villages to cities in large numbers as has been observed recently, is an unhealthy trend.

**Course of Action I** Firms in cities should be barred from hiring rural workers.

**Course of Action II** It should be compulsory for workers in cities to also work in rural areas for some duration.

**Course of Action III** New schemes that can help generate employment in rural areas should be launched.

- (A) Only I should be pursued
- (B) Only II should be pursued
- (C) Only I and III should be pursued
- (D) Only III should be pursued
- (E) All should be pursued

## Solution

Forcing someone to work in rural areas or barring rural workers from working in cities is definitely not a solution to the problem at hand. The solution is to try to understand why this migration is taking place in the first place—most likely because of better employment opportunities in the cities. So, the ideal solution should be to address this problem, which only III does.

**The correct answer is D.**

Let us take a look at another example:

**Statement:** There has been a continuous increase in the number of dropout students of government-run primary schools in the state.

**Courses of Action I** Government should immediately set up a committee to review the situation and suggest measures to reverse the trend.

**Courses of Action II** Government should conduct orientation program for parents of the students, emphasising the need for educating their children.

**Courses of Action III** Government should close down such state-run primary schools, where dropout rates are more than fifty percent.

- (A) Only I follows
- (B) Only II follows
- (C) Only III follows
- (D) I and II follow
- (E) None of these

### Solution

The government should set up a committee to review the case and suggest measures to resolve the issue. So, the first action follows. Also, orientation programmes should be conducted for parents of the students to emphasise the need of education for their children. Closing such state-run primary schools, where dropout rates are more than fifty percent is not the correct option as it will not solve the problem and will not help the government in fulfilling its motive.

**The correct answer is D.**

### Tips for solving questions on Course of Action

1. Make sure you arrive at an objective course of action using only the facts given to you in the statement. Do not let your own knowledge or preconceived notions about the subject matter affect your decision making.
2. In such questions, one must opt for the ideal solution. Therefore, if the choice is between practical and ideal, choose ideal.
3. The correct answers always exhibit one, many or all of the following characteristics:
  - a. They are ethical even if they involve a cost.
  - b. They are also practical and not merely idealistic or 'feel good'.
  - c. They do NOT favour a particular side in a disputed situation.
  - d. They are balanced and seek to provide solutions where required.
  - e. Avoid an extreme choice at all costs.
4. These questions always work on the premise of the greater good for the greatest number involved. This is true especially when one has to choose between the benefits to organisations/institutions over individuals. An action benefitting a larger population is a desirable action even though it may put an extra burden on the organisation/institutions or government.
5. Make decisions in sync with the way the system and public departments function.
6. Existing practices are not considered an effective course of action.
7. Our decisions and views should be unbiased and neutral.
8. Try to select the course of action that addresses the central cause of the problem.
9. Extreme or strict action is not a valid course of action.
10. The actions should always be a positive.
11. The selected course of action should not aggravate the problem or create a new set of problems.

- 12.** If in any situation, more than one course of actions is possible (but are dependent on each other), then your answer should always be “both follow” and not “either of them follows”.
- 13.** The course of action can be said to solve/reduce the problem when it is an established fact, when it is logically possible and when it is known from experience.
- 14.** Lastly, if there are dates or figures involved, those will certainly have a bearing on the answers.



## 5 Fact Analysis

Fact Analysis questions on the NMAT by GMAC™ involve the application of the principles of statement-conclusion on a set of factual data. Fact-based conclusion questions are those that test your ability to draw sound and logical conclusions based on a set of data/ facts provided. Essentially, you are given a set of facts on the basis of which certain assertions are made. The candidate is required to identify the set of assertions that can be proven conclusively by the given facts.

One thing to be kept in mind while solving these questions is that all conclusions and decisions should be drawn purely from the given set of facts. A statement will be said to follow the given facts if it can be inferred conclusively from them.

We can make use of the following in assessing the facts:

## Keywords

Any word that helps to delineate the meaning of a sentence acts as a keyword. These words help evaluate the given statements with respect to:

1. Scope – Universal/Specific
2. Charge
3. Main Idea
4. Tone

In a statement pay special attention to words like – all, no, few, most, must, had to, will be, always, never, should be, may, may not, only and so on. These will help you assess the facts and arrive at the correct conclusion. Let us consider an example:

## Example 1

### Facts:

- Fact 1:** Graphics can tell news.
- Fact 2:** All newspapers have graphics.
- Fact 3:** Some newspapers have text.

Statements:

- I. Some newspapers have both text and graphics.
  - II. Graphics can tell news better than text can.
  - III. The news in newspapers is very interesting.
- (A) Only I can be concluded.
  - (B) Only II can be concluded.
  - (C) Only III can be concluded.
  - (D) Both II and III can be concluded.
  - (E) None of the statements can be concluded.

### **Solution**

Statement I can be concluded from Fact 2 and 3. Those newspapers which have text will have both text and graphics. Statements II and III cannot be concluded as there is no information about the efficacy of text in telling news.

**The correct answer is A.**

### Application of logic

The conclusion may not follow the given statement directly, but by application of logic we can evaluate the conclusion. Let us consider the following examples.

## Example 2

### Facts:

- Fact 1:** World Bank has proposed a loan of 1000 million dollars for South Africa.
- Fact 2:** Apprehensions about erosion in the agriculturists' vote bank prevented the ruling party from accepting the World Bank proposal.
- Fact 3:** The opposition has criticised the decision of the government.

**Statements:**

- I.** The proposal is pro-industrialists.
- II.** The proposal is anti-agriculturists.
- III.** The opposition party is anti-agriculturist.
- A.** Only I can be concluded.
- B.** Only II can be concluded.
- C.** Only III can be concluded.
- D.** Both I and III can be concluded.
- E.** None of the statements can be concluded.



## Solution

From the facts it is clear that the South African government rejected the proposal to appease agriculturists. But we can't draw any conclusions about whom the proposal favors. Hence, we cannot conclude that the proposal is in favor of industrialists. Thus, statement I does not follow. But it can be inferred that the proposal is not in favor of agriculturists. Hence, statement II follows. However, the fact that the main opposition party has criticised the government's decision does not mean that the party is anti-agriculturists. It is possible that they have a different perspective or believe that the proposal actually benefits the farmers. It is also possible that they might be opposing the ruling party out of spite. Hence, statement III does not follow.

Let us consider a final example:

### Example 3

The new CEO of a Research facility met with its Security In-charge to assess the security protocols in place. During the meeting, the following facts were gathered:

- Fact 1:** The research facility must have at least one supervisor on duty 24 hours a day, seven days a week, to satisfy Central and State labour regulations.
- Fact 2:** To maximise operational efficiency, there must be exactly 10 security guards manning the facility.
- Fact 3:** The facility operates from 8am until 5pm, Monday to Sunday. The security guards are required for this duration only.
- Fact 4:** The facility employs 4 supervisors and 16 security guards making the total strength of the security team 20.
- Fact 5:** Total weekly employee cost for the security team is \$16,000.

Statements:

- I. One fifth of the total cost of the security team is for supervisors.
  - II. At least one supervisor must work more than 40 hours per week.
  - III. The security guards do not work more than 40 hours per week.
  - IV. The majority of the security team's employee cost is due to the guards.
- (A) Only I can be concluded.
  - (B) Only II can be concluded.
  - (C) Only III can be concluded.
  - (D) Both I and III can be concluded.
  - (E) None of the statements can be concluded.

Let us analyse the different options:

- (A) There are 4 supervisors out of 20 security guards so it seems likely that the cost of a supervisor will be  $\frac{1}{5}$  of the total cost. But such an analysis assumes a very important piece of information – that every person gets the same salary. Since we don't know this for a fact, this conclusion can't be drawn.
- (B) This can be concluded based on the provided facts. As per the facts, the research facility must have at least one supervisor on duty 24 hours a day, seven days a week to satisfy Central and State labour regulations. Thus, a total of  $24 \times 7 = 168$  supervisor hours are needed in a week, which equals 42 hours per week per supervisor. So, there has to be one supervisor who works more than 40 hours.
- (C) The facility opens for 9 hours every day, 7 days per week, and there must be exactly 10 guards working at a time: this translates to 630-man hours per week. There are 16 guards, so on an average each guard must work only 39 hours per week. This seems to fit very well with the proposed conclusion: security guards do not work more than 40 hours

per week. But we don't know whether every security guard works the same amount of time (It is possible that some guards work for more than 40 hours while others work for lesser number of hours).

- (D)** As explained in A, there are more security guards, so it is easy to conclude that the total cost for security guards is more than the total cost for supervisors. But such a conclusion makes the same assumption- that every person earns the same amount. Hence, this is also incorrect.

Thus, only option B can be concluded.

## 6 Statement and Argument Questions

A statement that is used to support a proposition or statement in favour or against is called an argument. It is irrelevant whether an argument is favourable or adverse to a proposition. Both favourable & adverse arguments are considered as strong enough in their own ways.

Strong arguments are those that are directly connected to the subject matter in the given statement and that help you strengthen or support that statement. Weak arguments, on the other hand, are either not connected to the subject matter at all or they are connected to it in a very indirect and far-fetched manner. Let us understand these concepts in detail.

## Structure of an argument

Let us understand the structure of an argument with the help of an example:

*People don't like to visit the Evergreen wildlife park in the rainy season. This year the park authorities have reconstructed all the roads inside the park, so people will like to visit the Evergreen Park in the rainy season this year.*

**Conclusion**—This is the point of the argument and answers the question *What*, that is, what the argument is basically stating—*that people would like to visit the Evergreen Wildlife park in the rainy season this year.*

Conclusions usually follow signalling words such as *thus*, *so*, *hence*, *therefore*, and so on. In case there are no such words in the argument, try to paraphrase the entire argument in one line. This line would almost always be the conclusion of the argument.

**Evidence**—While the Conclusion tells you *What* the argument is saying, the Evidence tells you *Why* the argument is concluding what it is concluding. So in the above argument, why does the author conclude that people will like to visit the Evergreen Park this year? Because the park authorities have reconstructed all the roads inside the park, so this becomes your evidence.

Evidence usually follows signalling words such as *because*, *since*, *as a result of*, and so on.

So the conclusion tells you the *what* of the argument and the evidence tells you the *why* of the argument. Another way of looking at conclusion and evidence is that a conclusion will almost always be *an opinion* whereas the evidence will almost always be a fact. In the above argument it is a fact that the roads have been reconstructed but it is the author's opinion that people will like to visit the Evergreen Park this year.

**Assumption**—Now, going back to the above argument, notice that from the given evidence we cannot necessarily arrive at the

stated conclusion. The argument only states that people don't want to visit the Evergreen Park during the rainy season; it never states why people don't like to do so. So the author *assumes* that the only reason people don't like to visit the park is because of the poor road conditions within the park. If this is not assumed then the argument will fall apart.

For example, if the real reason why people do not visit the Evergreen Park was the fact that there are hardly any animals in the park, then even if the roads were of best quality, people will not visit the park because bad roads was not the reason for people not visiting the park in the first place. So, for the author to conclude that people will want to visit the park this year, he has to assume that the only reason people did not visit the park earlier was the poor road conditions inside the park.

## Identifying an argument

### *How to identify an argument as strong or weak?*

**Strong Argument:** Statements that reinforce/build on the idea discussed through the use of reasons, facts, and examples.

Strong argument provides a valid and directly related reason either in favour of or against the proposal made.

- A strong argument provides a sensible and acceptable argument that either supports or opposes the proposition.
- It is supported by the given facts or established notions.
- An argument based on Universal Truth is always strong.

**Weak Argument:** Statements that present data, facts, reasoning that either contradicts or dilutes the argument presented are known as weak arguments. They can be personal or judgmental in nature.

- A weak argument is not directly related to the given statement.
- A weak argument does not discuss the key aspects of the statement.
- It includes limited explanations.
- Weak arguments are personal or judgmental in nature.

Strong Arguments	Weak Arguments
1. Present opinions that relate to the central idea being argued.	1. Present opinions that are unrelated or vaguely connected to the subject.
2. Provide facts, data, information that are relevant and supportive of the subject.	2. They are not supported by facts or reason. They might also present facts or data in relation to a minor/marginal aspect of the argument.
3. Are logical and coherent in	3. Are not logical or coherent in



their construction and presentation	their construction.
-------------------------------------	---------------------

For example, if you are writing a persuasive note to your mother to try to convince her to give you more pocket money, which of these two arguments do you think will be more effective?

1. If you gave me more pocket money, I will be able to buy more clothes.
2. If you gave me more pocket money, I will be able to purchase more reference books for the upcoming examinations

The second argument is definitely the stronger one as the reasoning used to support it is likely to garner greater support from your mother.



### **Important Learning:**

1. An argument that addresses the given issue even by providing a partial solution should be considered a strong argument provided the solution is relevant to the issue and does not create a new set of problems.
2. An argument that presents a positive outcome for large number of people is considered a strong argument. For example, even if a government or an organisation's action puts some burden on the public but is justified on the basis that it would improve the quality of the services provided or increase the number of new services, then the argument is strong.
3. An argument that presents an unethical, unrealistic or extreme solution is considered weak.

4. Any argument that supports added burden on the general population, either in terms of money or hardship, is usually considered a weak argument. For example, if an action is supported on the ground that it would increase the revenue or profitability for an organisation/government but add to the burden of the general public using the service, it is not a strong argument.
5. Again, if an action is opposed on the ground that it would increase the expenditure of the government, even if the general public would have gained by the said action, it is considered a weak argument.

Let us elucidate the above points with the help of some examples:

## Example

**Statement:** Should the government invest in female education to improve the sex ratio in the country?

**Argument I:** Yes. Higher levels of female education will help reduce female infanticide.

**Argument II:** No. The government does not have the resources to invest in such schemes.

**Argument III:** No. There is a simple solution to the problem: the boys should be killed.

## **Solution**

In the case discussed above, argument I will be considered a strong argument, because, even though it may not solve the whole problem, it addresses an important aspect of the problem. This is because it presents a positive and relevant solution to the issue being discussed. Argument II will not be considered a strong argument. As mentioned above, in statements involving government/public bodies or people in authority, the cost of undertaking an activity that impacts public life is never a strong argument for not doing it. The third argument, though presenting a direct solution to the core problem of sex ratio imbalance, will be considered weak because it is unethical and extreme. At the same time, it will create larger problems.

## Types of questions

### Questions with two arguments

**Statement:** Should the censor board also judge the quality of movies so people do not waste money and time on movies that are boring?

**Argument I:** Yes. This will encourage producers to make only quality movies.

**Argument II:** No. People differ in their choice and tastes and it is impossible to ascertain quality of movies.

- (A) If only argument I is strong.
- (B) If only argument II is strong.
- (C) If either argument I or II is strong.
- (D) If neither argument I nor II is strong.
- (E) If both arguments I and II are strong.

## Solution

The term *good movies* in argument I is not well defined and is therefore not strong. The second argument describes ascertaining the quality of movies as *impossible* which is not correct and thus the argument is weak. Had the argument used the term *difficult* instead of *impossible*, the argument would have been strong. The best answer is option (D).

**The correct answer is D.**

## Questions with more than two arguments

It is not necessary that you will always get only two arguments in the question to choose from. You may even get four or five arguments with the question stem asking you to identify which of these are strong and which are weak.

Let us take a look at an example:

**Statement:** Indian students who have completed their education in premium public institutions in India should be barred from taking up jobs abroad as India gains nothing from their expertise.

**Argument I:** Yes. This is the only way to sustain the high quality of teaching in Indian educational institutions.

**Argument II:** No. Eventually most of these students come back to India and their experience of working abroad makes them more effective workers.

**Argument III:** No. Students should be free to decide where they work.

- (A) Only argument I is strong
- (B) Only argument II is strong
- (C) Only arguments I and II are strong
- (D) Only arguments I and III are strong
- (E) All the arguments are weak

## **Solution**

There is no real connection between the quality of teaching at Indian educational institutions and which country a student chooses to work in. Thus, Argument I is weak.

Argument II gives a strong and logical point against the view given in the statement by showing that the country may benefit in the long run. Thus, Argument II is strong.

Argument III does not address the point raised in the statement that the country gains nothing from the expertise of these students. Thus, Argument III is weak.

**The correct answer is B.**



## Tips for approaching argument-based questions

While attempting Argument questions, make sure you arrive at the answer based only on the information that is given to you in the statement and in the arguments. Do not allow your preconceived notions and biases on the subject matter in the statement come in the way of arriving at the logically correct answer.

Do not use your own presumptions while answering Argument questions. Go only by the facts given to you in the statement.

If the argument relies on some assumption, it is a weak argument. For example,

**Statement:** Should doctors be banned from carrying out private practice?

**Argument:** Yes. This will improve the quality of service in public hospitals.

**Solution:** The above argument relies on the assumption that the cause of the poor quality of service in public hospitals present is the fact that doctors are carrying out private practice. However, this assumption may or may not be true. Thus, this argument is a weak one.

If the argument gives someone's opinion, it is a weak argument. For example,

**Statement:** Should there be reservation for women in the Parliament?

**Argument:** No. The home minister does not think so.

**Solution:** Just because the home minister does not believe something does not mean that it is not the right thing to do. Thus, this argument is a weak one.

A word or phrase should be used to connote the same meaning in the statement and in the argument.

For example,

**Statement:** Should there be a divorce between the judiciary and the legislature?

**Argument I:** No. The judiciary and the legislature are not a married couple.

**Solution:** The word 'divorce' is used in a different sense in the statement, whereas the argument is using the literal meaning of the word. Thus, this argument is a weak argument.

Let us now take a look at another example:

**Statement:** Should people below the age of 18 be allowed to drive a vehicle?

**Argument I:** No. People below the age of 18 do not have enough mental and physical maturity to drive a vehicle.

**Argument II:** Yes. People of any age should be free to do what they want.

**Solution:**

The first argument provides a valid reason why people below the age of 18 should not be allowed to drive. So, it is a strong argument. Argument II on the other hand just provides a random opinion without backing it up with any facts. Thus, it is a weak argument.

**The correct answer is A.**

## 6.8 Analytical Puzzles

## 6.9 What is Measured?

The analytical puzzles section will include linear and circular arrangement questions, data arrangement questions with three or more variables, input-output questions etc., and will test you more on your lateral thinking and visualisation skills.

This section is, to a large extent, testing your ability to make sense of incomplete or abstract text and images.

## 6.10 Overall Test Taking Strategies

1. While attempting arrangement questions, focus on the overall arrangement and not on individual questions because once you get the arrangement right, the individual questions can be easily answered.
2. Try to represent the given information pictorially or in the form of a Venn diagram.
3. In decision making, make sure you arrive at an objective decision using only the facts given to you in the statement. Do not let your own knowledge or preconceived notions about the subject matter affect your decision making.
4. In symbols-based problems, try to focus on what is within each shape and not just on the shape.

The next few sections will provide you with in-depth strategies for approaching each topic.

## Introduction

Analytical Puzzles questions will test you more on your logical and lateral thinking skills. To understand the question better, you need to represent the given information pictorially or in tabular form or in Venn diagram.

Analytical Puzzles will include the following question types.

## 1 Analytical Puzzles

Arrangement questions will require you to arrange a given set of people or objects in straight lines or in a circular manner. There will be a list of requirements or constraints given to you and you will need to make this arrangement keeping in mind these requirements.



## Commonly tested analytical puzzles question types

### Linear arrangement questions

Any arrangement which has a well-defined beginning and end is a linear arrangement. It may be of three types:

1. To arrange people or objects in a straight line (row arrangement)
2. To arrange events etc. on basis of time (chronological)
3. To arrange people in other ways (like on basis of age, position, height, etc.)

Let us take a look at an example:

**Directions for Examples 1–4:** Read the following information and answer the questions that follow.

Ajay's work requires him to travel to cities C, R, G, J and B (each city for one day and not necessarily in this order) from Monday to Saturday, with a one-day break in the middle.

1. He visits G neither on the first nor on the last day but he visits it earlier than R.
2. He visits J the day after he visits R.
3. He visits C immediately before the rest day.
4. J and B had a two day gap between their visits.
5. He visited B immediately after the rest day.

### Example 1

Which of these is the rest day?

- (A) Monday
- (B) Tuesday
- (C) Wednesday
- (D) Thursday
- (E) Friday

### Example 2

Between Monday and Saturday, the visits to J and C have how long a gap between them?

- (A) One day
- (B) Two days
- (C) Three days
- (D) Four days
- (E) Five days

### Example 3

On which day does Ajay visit B?

- (A) Monday
- (B) Tuesday
- (C) Wednesday
- (D) Thursday
- (E) Friday

#### Example 4

Which of the following is a correct statement?

- (A) Ajay visits B on Thursday
- (B) Ajay visits J the day after he visits R
- (C) Ajay visits C and B on consecutive days
- (D) R is the last city that Ajay visits in the week
- (E) The rest day is right in the middle of the week

### General Solution for Examples 1–4:

We first need to decipher the days on which Ajay visits each of the five cities, as after doing so all the questions can be answered easily.

Start by looking at which cities Ajay can visit on Monday.

1. G is out as it cannot be the first or the last city Ajay visits.
2. Since R has to come before J, J cannot be the first city.
3. B cannot be the first city since it comes after the rest day.
4. J is out since Ajay visits J after he visits R.
5. Thus, C has to be the city that Ajay visits on Monday.

As per the instructions in the question, C has to be followed by a rest day, which is in turn followed by B. So, we get:

Monday—C

Tuesday—Rest day

Wednesday—B

Thursday—?

Friday—?

Saturday—?

Since J and B have a two-day gap between their visits, we get:

Monday—C

Tuesday—Rest day

Wednesday—B

Thursday—?

Friday—?

Saturday—J

Since G has to come before R, the final order we get is:

Monday—C

Tuesday—Rest day

Wednesday—B

Thursday—G

Friday—R

Saturday—J

Using the above arrangement, the questions can now be easily answered.

1. (B)

2. (D)

3. (C)

4. (B)



**Important Learning:** The first step in Arrangement questions is always to figure out the correct placement of all the entities. The individual questions can be easily answered after that.

### Circular arrangement questions

Unlike Linear Arrangement, wherein every position is unique by itself, in Circular Arrangement questions, all the positions are identical. Therefore, in Circular Arrangement questions, the position of an individual depends on the neighbours to the left and right.

Let us now look at an example of a circular arrangement question:

**Directions for Examples 5–8:** Read the following information and answer the questions that follow.

P, Q, R, S, T, U, V and W are sitting around a circular table.

- (i) P is second to the right of T who is the neighbour of R and V.
- (ii) S is not the neighbour of P.
- (iii) V is the neighbour of U.
- (iv) Q is not between S and W. W is not between U and S. S is not between W and Q.



### Example 5

Who is sitting to the right of U?

- (A) P
- (B) U
- (C) R
- (D) V
- (E) Q

### Example 6

How many people are sitting between R and Q in a clockwise direction?

- (A) 0
- (B) 1
- (C) 2
- (D) 4
- (E) 5

### Example 7

Who is sitting to the left of S?

- (A) P
- (B) Q
- (C) W
- (D) R
- (E) T

### Example 8

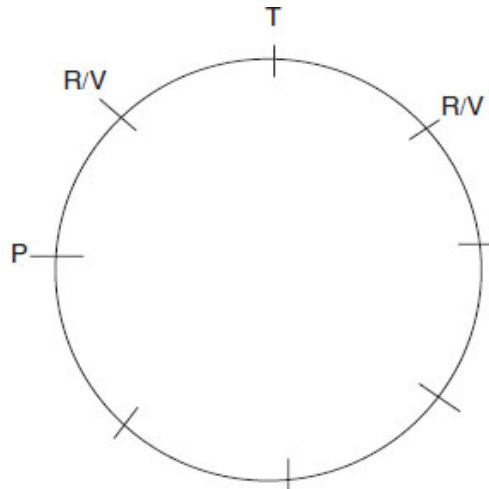
Which of the following is the correct sentence?

- (A) T and S are neighbours
- (B) W and T have exactly three people between them
- (C) T and S have exactly two people between them
- (D) P and S are neighbours
- (E) W and S are not neighbours

### General Solution for Examples 5–8:

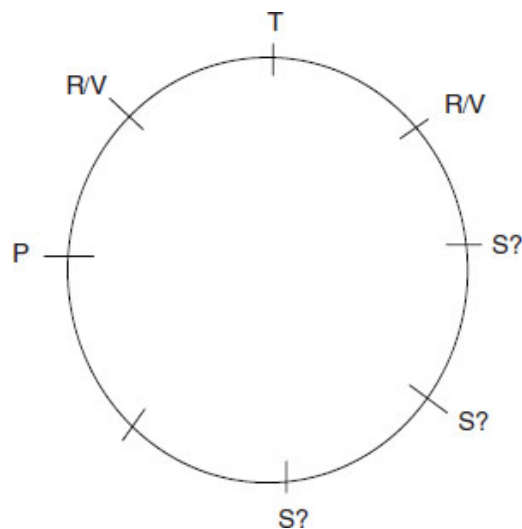
Let us first try to put all the eight people around a circular table based on the given instructions.

Using the information in Statement (i), we get

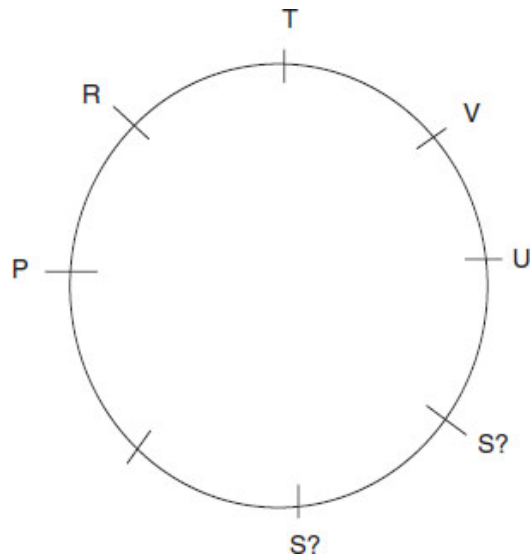


**Note:** Do not get confused with the lefts and rights. The right of T will be your left because all the people are sitting facing the table.

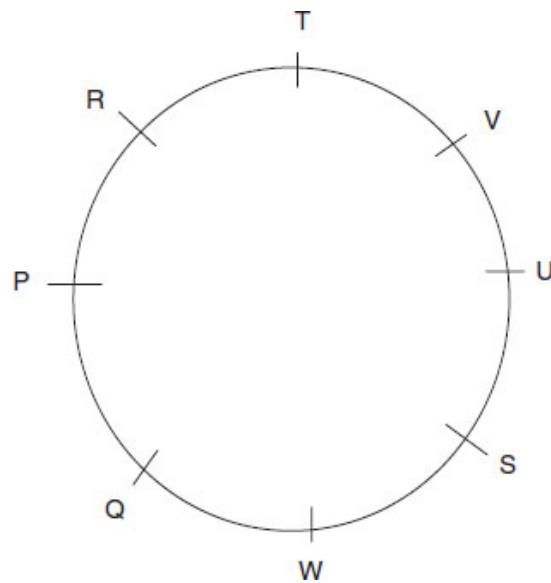
Using the information in Statement (ii) we get



Using the information in Statement (iii) we get



Using the information in Statement (iv), we finally get



Using the above arrangement, we can now easily answer the questions.

5. (D)
6. (E)
7. (C)
8. (B) Note that irrespective of whether you go in the clockwise direction or in the anti-clockwise direction, the answer remains 3. However, the answer changes in the case of

option (C), which is why (C) is incorrect as we do not know which direction to move in.

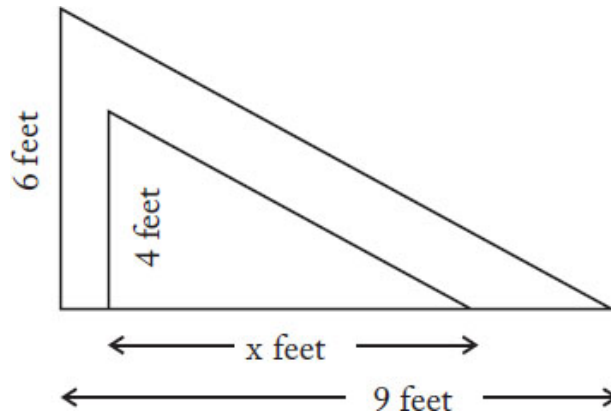
## Mathematical puzzle questions

### Example 9

The head of an institution was standing behind a 4 feet high rostrum in an afternoon on a sunny day to address his students. He is 6 feet tall and cast a shadow in his front 9 m long. If he completes his lectures in next 30 seconds and leaves the place, what will be the length of the shadow cast by the rostrum after his departure.



### Solution



Given that the shadow of a 6 feet person is 9 feet. The same ratio will be applied by the rostrum while casting its shadow.

$$\text{Therefore, } \frac{6}{9} = \frac{4}{x}$$

So,  $x = 6$  feet

### Example 10

There is a circular park in a city locality. Rathin walks from any point of the park and goes across the park everyday covering a distance of 200 metres. Now the city authority has decided to widen the park such that the distance covered by him would be 250 metre. What is the increase in the area of the park after the widening of the park?

## Solution

### Case 1:

Diameter,  $d = 200$  m

So, radius,  $r = 100$  m

Area,  $A = \pi (100)^2 \text{ m}^2$

### Case 2:

Diameter,  $d = 250$  m

So, radius,  $r = 125$  m

Area,  $A = \pi (125)^2 \text{ m}^2$

Therefore, increase in the area of the park =  $\pi(125)^2 - \pi(100)^2 = 17,678.57 \text{ m}^2$

### Tips for approaching analytical puzzles questions

1. The trick to solving these questions is to identify the reference point is given in the question (e.g. J in the question we explained above), and use this information to proceed. The information given can then be utilised using this as a reference point.
2. It helps if you can visualise the correct arrangement or pattern in your head. In fact, it is even better if you can draw this pattern on paper to avoid confusion later.
3. Move to the answer choices only after you have read and understood the problem completely.
4. The problem has to be solved only on the basis of the given information. Do not assume any information which does not follow from the instructions in the question.
5. Watch out for words such as *all*, *some*, *none*, *only*, *unless* and so on, since questions will be based on the meaning conveyed by these words.

## 2 Input-Output Questions

Input-Output is a question type in which you are given a word and number arrangement. With each subsequent operation, the arrangement of the words and numbers changes. These operations are performed until a final arrangement is reached or is performed in a loop. You are required to identify the hidden pattern in the rearrangement and apply it to the questions asked.

Let's take a look at an example

**Directions:** A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input:**     *go now 53 39 18 for again 66*

**Step 1 :**   66 go now 53 39 18 for again

**Step 2 :**   66 again go now 53 39 18 for

**Step 3 :**   66 again 53 go now 39 18 for

**Step 4 :**   66 again 53 for go now 39 18

**Step 5 :**   66 again 53 for 39 go now 18

**Step 6 :**   66 again 53 for 39 go now 18

**Step 7 :**   66 again 53 for 39 go 18 now

As per the rule followed in the above arrangement, attempt the following question.

**Input:**     *chicken wand 24 44 57 Hexa bleach 71*

### Example 1

How many steps will be required to complete the rearrangement of the above input?

- (A) Three
- (B) Four
- (C) Five
- (D) Six
- (E) Seven

## Solution

The trick to solving Input-Output questions is to first try and identify the structure in the original input-output table given to you. In this question, you will notice that the numbers in the input get arranged in descending order whereas the words get arranged as per their order in the English dictionary. Also note that each step is moving one number or one word such that they alternate with each other, starting with the number. Now, we can apply this same logic to the input given to us in the above question. Here are the steps accordingly:

**Step 1 :** 71 C W 24 44 57 H B

**Step 2 :** 71 B C W 24 44 57 H

**Step 3 :** 71 B 57 C W 24 44 H

**Step 4 :** 71 B 57 C W 24 44 H

**Step 5 :** 71 B 57 C 44 W 24 H

**Step 6 :** 71 B 57 C 44 H W 24

**Step 7 :** 71 B 57 C 44 H 24 W

Thus the correct answer is 7 steps, that is, Option E.

**The correct answer is E.**

### Tips for Input-Output questions

1. Usually the first, second and final steps of the arrangement are enough to identify the pattern
2. If there are 'n' words/digits in the input then at most 'n – 1' steps are required to rearrange it completely



## 6.11 Other Reasoning

## 6.12 What is Measured?

This section will include ranking test questions, set theory, decision making, syllogisms, Venn diagrams, series, etc., and will test you more on your lateral thinking and visualisation skills.

This section is, to a large extent, testing your ability to make sense of incomplete or abstract text and images.

## 6.13 Overall Test Taking Strategies

1. While attempting ranking questions, focus on the overall ranking and not on individual questions because once you get the order right, the individual questions can be easily answered.
2. Try to represent the given information pictorially or in the form of a Venn diagram.
3. While attempting direction questions, remember the rules with regards to the direction in which a shadow falls at different times of the day.
4. In symbols-based problems, try to focus on what is within each shape and not just on the shape.

The next few sections will provide you with in-depth strategies for approaching each topic.

## 1 Missing Value in Figures

These questions will be similar to the series-based questions. Here, a set of numbers or letters are given in different figures such as triangles, rectangles, circles, etc. These numbers or letters follow some pattern. You will need to identify this connection in the series of numbers or letters to find the next item in the series.

### Some commonly tested series

1. Addition series—5, 8, 11, 14, 17, \_\_
2. Subtraction series—50, 45, 40, 35, 30, 25, \_\_
3. Product series—2, 4, 8, 16, 32, 64, \_\_
4. Square series—1, 4, 9, 16, 25, 36, 49, \_\_
5. Cube series—1, 8, 27, 64, 125, \_\_
6. Fibonacci series—0, 1, 1, 2, 3, 5, 8, \_\_

### Tips for approaching questions

1. If the series is increasing gradually, that is, the gap between successive terms is not very large, you are most likely looking at an addition-based series.
2. If the series is increasing rapidly, that is, the gap between successive terms is very large, you are most likely looking at a multiplication-based series.
3. If the gap between successive terms keeps on increasing as you move ahead in the series, you are most likely looking at a series involving squared or cubed numbers.
4. If the series looks very haphazard or random, there may actually be two series within one. For example, the odd integers might be following one pattern and the even integers might be following a different pattern.

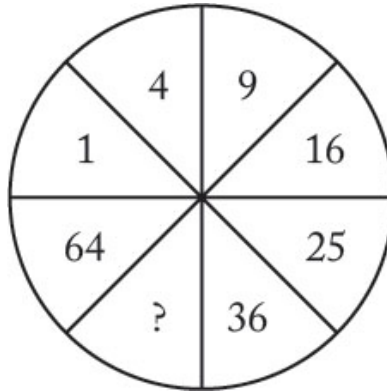


**Important Learning:** If a series increases gradually, it is most likely addition-based, and if it rises rapidly, it is most likely multiplication-based.

Let us take a look at an example:

### Example 1

What number should come in place of the question mark?



- (A) 43
- (B) 49
- (C) 56
- (D) 243
- (E) 343

### Solution

The numbers are squares of consecutive numbers— $1^2$ ,  $2^2$ ,  $3^2$ ,  $4^2$  and so on.

Thus,  $? = 7^2 = 49$

**The correct answer is B.**



## 2 Set Theory

### Introduction

A set is defined as a group or collection of objects having similar properties. The objects are called elements of the set and are represented by small alphabets while the set itself is represented by capital letters. Also, the number of distinct elements of the set is called the cardinal number of the set.

## Representation of a set

There are two basic ways to represent a set:

1. **Tabular or Roster method:** In this method, all the elements of the set are shown or represented within a curly bracket and separated by a comma.

For example,  $\{a, e, i, o, u\}$  is the set of all vowels in the English language.

Similarly,  $\{1, 3, 5, 7, 9\}$  is the set of all odd natural numbers less than 10.

2. **Set-builder method:** In this method, the elements of the set are not shown. Instead, the rule or criteria to form or build the set are provided.

For example,  $B = \{b: b \text{ is a vowel of the English language}\}.$

## Types of sets

1. **Empty set or Null set:** A set having zero element or no element is called a null set or empty set or void set represented by  $\{\}$  or  $\Phi$ .
2. **Singleton set:** A set having a single element is called a singleton set.
3. **Universal set:** A set which is the combination of all possible sets under consideration is called the universal set.
4. **Equivalent sets:** Any two sets having the same number of elements, that is, the same cardinal number, are called Equivalent sets.

For example, Set A is the set of all the vowels in the English language while Set B is the set of all the odd numbers less than 10. Then

$$\text{Set A} = \{a, e, i, o, u\}$$

$$\text{Set B} = \{1, 3, 5, 7, 9\}$$

Set A and Set B are called equivalent sets.

5. **Equal sets:** Two sets A and B are said to be equal sets if every element of A is also an element of B and vice versa.

For example, if Set A = {a, c, b} and Set B = {c, b, a}, A and B will be known as equal sets.

## Subset of a set

Set A is said to be a subset of Set B if every element of A belongs to B. Also, If A is a subset of B, then B is called the superset of A.

Subsets are of two types, listed as follows:

1. **Proper subset:** If every element of A belongs to B but there is at least one element in B which does not belong to A, then A is called a proper subset of B. This is represented by  $A \subset B$ .
2. **Improper subset:** If A is a subset of B and A is also equal to B, then A and B are called improper subsets of each other. This is represented by  $A \subseteq B$ .

### Some important properties of subsets:

1. Every set is a subset of itself.
2. Null set is a subset of all sets.
3. Universal set is a superset of all sets.
4. If the cardinal number of a set is n, then the number of subsets =  $2^n$ . Out of these, one subset is an improper subset while the remaining  $(2^n - 1)$  subsets are proper subsets.

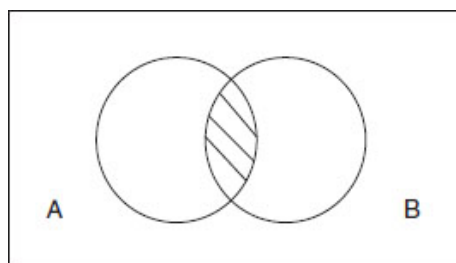
## Operations on sets

The following operations have been defined on sets:

1. **Union of sets:** Denoted by  $A \cup B$ , it is the set of all those elements that belong to Set A or to Set B.

For example, if Set A = {2, 3, 5, 7, 9} and Set B = {1, 3, 5, 6, 8}, then  $A \cup B = \{1, 2, 3, 5, 6, 7, 8, 9\}$

2. **Intersection of sets:** Denoted by  $A \cap B$ , it is the set of all those elements that belong to set A and also to set B.

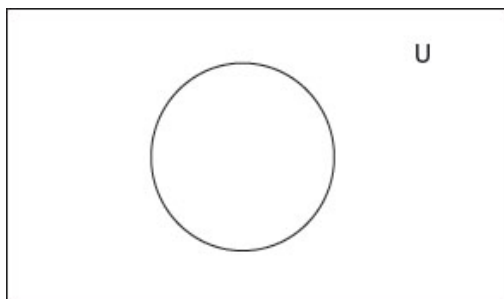


The shaded region in the above figure denotes the intersection of Sets A and B. In the example above,  $A \cap B = \{3, 5\}$

If  $A \cap B$  is a null set, then A and B are said to be disjoint sets.

3. **Complement of a set:** Denoted by  $\sim A$ , it is the set of all those elements that belong to the universal set (U) but are not present in set A.

As an example, let Set A be the set of all the single digit natural numbers and let Set B = {2, 3, 5, 7}, then the complement of Set B denoted by  $\sim B = \{1, 4, 6, 8, 9\}$



- 4. Difference of two sets:** Denoted by  $A - B$ , it is the set of all those elements that belong to  $A$  but not to  $B$ .

Let Set  $A$  be defined as  $A = \{2, 7, 9, 11, 13, 14, 17, 19\}$  and Set  $B = \{2, 5, 8, 11, 12, 15, 17\}$ , then,  $A - B = \{7, 9, 13, 14, 19\}$  and  $B - A = \{5, 8, 12, 15\}$ .

Important results on set operations:

1.  $n(A \cup B) = n(A) + n(B)$  if  $A$  and  $B$  are disjoint sets
2.  $n(A \cup B) = n(A) + n(B) - n(A \cap B)$
3.  $n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(B \cap C) - n(A \cap C) + n(A \cap B \cap C)$

Let us take a look at an example:

### Example 1

If set  $P$  is the set of all the prime numbers less than 50, find the cardinal number of  $P$ .

- (A) 11
- (B) 12
- (C) 13
- (D) 14
- (E) 15

### Solution

Prime numbers less than 50 are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47.

The cardinal number of the set P is 15.



The correct answer is E.



**Important Learning:** If the cardinal number of a set is  $n$ , the number of subsets is  $2^n$ . Out of this,  $(2^n - 1)$  subsets are proper subsets and the remaining one is an improper subset.

### Example 2

In an exam where 175 students appeared, 140 passed in physics, 150 in biology while 10 failed in both the subjects. Find the percentage of people who passed in both the subjects.

- (A) 68.71%
- (B) 71.42%
- (C) 74.56 %
- (D) 78.54%
- (E) 81.76%

### Solution

Let  $x$  be the number of students who passed in both the subjects.

As 10 students failed in both the subjects, the number of students who passed in at least one of the two subjects =  $175 - 10 = 165$ . Then

$$140 + 150 - x = 165$$

$$x = 290 - 165 = 125 \text{ students}$$

Percentage of students who passed in both the subjects

$$\frac{125}{175} \times 100 = 71.42\%$$

The correct answer is B.

### 3 Decision Making

**Decision Making is essentially a test of a candidate's ability to apply logical and reasoning abilities to a given issue and arrive at a plausible course of action. The decision-making questions in NMAT by GMAC™ present students with scenarios which need to be resolved effectively. In a nutshell, they are conditions that require a logical and rational decision to be made. These questions involve elements of critical and logical reasoning.**

They involve taking steps to address a problem or a circumstance to improve the situation. In such type of questions, a situation is presented within a statement and some actions are suggested in the same context.

These questions are a bit different from conventional reasoning type questions. The main feature of these types of questions is that they are designed in such a way that the decision-making ability of the candidates can be scrutinised. In simple words, these questions test your ability to judge a problem and thus find a suitable course of action for it.

## Decision making concepts

Decision making questions challenge a student with respect to his/her eye for detail, ability to adopt a nuanced approach and judgement. To effectively solve and score in this section, you must do the following –

1. Understand the context of the problem
2. Carefully analyse the given information
3. Understand the scope of the problem
4. Choose best possible option

### Understand the context of the problem

The first important thing to understand in a question is the context of the problem. In most cases, the problem context can be categorised into one of the following three –

- (A) Context that draws attention to global issues, decision processes of different countries, laws and cultures within nations.
- (B) Context that draws attention to organisational cultures and structure.
- (C) Context that draws attention to a particular employee or decision factor.

Usually, the questions that you will see in NMAT by GMAC™ will not be from context A as this kind of problem solving requires data and information way beyond the scope of an aptitude question. You are most likely to find questions from context B and C. Placing the scenario into a particular context helps define the problem question.

### Example 1

Ethan was a team leader for a team of 6 employees at City Infotech. He was popular among employees with a reputation of always delivering results on time. Ethan and his team members usually followed their own office timings and were quite often seen on coffee breaks. The management had ignored these deviations as the team was performing well. Ethan reports in to Julia, who managed 5 team leaders including Ethan. Julia is worried that not addressing these deviations may impact City Infotech's culture negatively in the long run.

Which of the following is the basis of Julia's apprehension?

- (A) The flexibility given to Ethan and his team may be perceived as preferential treatment by others.
- (B) The working style of Ethan's team may affect the working style of other teams
- (C) Ethan and his team's behavior shows a Rohit's blatant disregard for office policies
- (D) Productivity of Ethan's team will go down in the long run.
- (E) Ethan and his teams conduct may affect the other employees negatively.

Who is the problem factor here? Is it Ethan?

## Solution

In this question, the management has allowed Ethan the liberty to define the work culture of his team as long as he is delivering results. Julia is worried that this will harm the company. Ethan's behavior speaks of a more liberal work environment than what is probably prevalent at City Infotech. This does not mean that he has disregard for company policies. Also, nothing in the case indicates that his behavior will reduce his team's productivity in the long run. There is also a possibility that his team delivers good results, making Ethan a popular leader, because of his working style.

Julia's apprehension stems from the fact that other employees may start to copy Ethan's behavior. This may lead to disorganisation in the office. Hence, Julia's apprehension is not about Ethan per se but about how culture will be affected in the long run.

Therefore, understanding the context of the problem and identifying the elements to be addressed is extremely important in decision making scenarios.



### Carefully analyse the given information

Once a problem has been identified, information is needed about the exact nature of the problem and potential actions that can be taken to rectify it.

Problem solving can be divided into two parts—**process and decision**.

Most of the students, while attempting decision making questions tend to jump straight to the decision. Often, the decisions made are influenced by biases and personal experiences.

While solving these questions it is important that you focus on the process of solving the problem. If we do that, we would realise that in some cases, the information required to reach a decision is missing and the only possible answer to the question can be finding that missing piece of information. This information can be about the priority of solution preferences or about determining the possible impact that the decision might have.

## Example 2

Hashim is a brilliant student from a small town in South Africa. He has always been academically bright and went on to obtain an engineering degree from IIT Delhi. As he was finishing his studies, he received two offers from highly coveted companies. Hashim went back to his parents to discuss his future path. Hashim's father runs a small but successful business of exporting gems. He wants Hashim to come home and handle the family business. He tells Hashim that he is getting old and needs Hashim by his side. Also, if Hashim joins the family business, he can earn almost double of what he would make working outside.

What should Hashim do? Should he take up the job offer he has earned with his hard work or should he come back to handle the family business?

## Solution

In this scenario, the most important piece of information that is missing is about Hashim's aspirations and goals. The fact that Hashim went on to do an MBA does not necessarily mean that he aspires to a corporate job outside of the family business. Also, Hashim being the only son does not make him the ideal candidate to handle the family business.

Though Hashim's father presents a compelling argument, Hashim may not be able to apply the skills that have been learned by him. Therefore, what Hashim wants is critical in deciding a future course of action. Obtaining this pertinent piece of information is the next crucial step in the decision-making process.

## Understand the scope of the problem

Attention must be paid to the scope of the problem. While taking decisions you may have to deal with various aspects of the issue-market analysis, product development, cost-benefit analysis, pricing, compliance with the law of the land and so on. Therefore, one should check the information given against the various aspects to identify the domain in which the problem lies. So, if the issue is related to product development and nothing has been said about compliance, then talking about compliance in any of the answer choices will be out of scope. Let us elucidate this with the help of an example.

### Example 3

A leading soap manufacturing company has recently launched a new product that targets the teenage segment. In order to boost its sales, the company has come up with a set of advertisements-both in the electronic and print media. These advertisements have drawn flak from a lot of people for being offensive. There have been lash backs on various social media platforms as well. The CEO of the organisation has called an emergency meeting of the directors to resolve the problem. What should he do?

- (A) Offer his resignation as he is responsible for the product-line and customer satisfaction.
- (B) Fire the head of the legal team as he should have foreseen the legal implications of the new advertisements.
- (C) Recall the product from the market and send it for testing.
- (D) Stop the advertisements with immediate effect and ask the marketing team to work on re-branding the product.
- (E) Do nothing. In today's times, any publicity is good publicity

## Solution

In this scenario, it is critical to identify the scope of the problem. *Is it the soap or the advertisement around it that has led to the present crisis?*

Clearly, it is the advertisement campaign that is at the receiving end of the brickbats. Therefore, any answer option that suggests modifications in the product itself will be incorrect. Similarly, maintaining the status quo is also not a desirable course of action. This indicates a passive approach which is not the hallmark of good decision making.

The first two options are also beyond the scope of the problem. Resignation of the CEO or the legal head is not going help in resolving the problem. Also, such decisions are defeatist in nature and bent on identifying scapegoats.

In this scenario, one has to address the primary issue – that of the advertisements. Hence, stopping the campaign and designing a new strategy for marketing the product is the correct course of action to be adopted.

“A Garbage Can Model of Organisational Choice” by Cohen, March and Olsen argues that organisations have four roles or vectors within them: problem knowers, solution providers, resource controllers and decision makers. For effective decision making, all these elements must be in the same room at the same time.

### Choose best possible option

Selecting the correct answer involves identifying all the stakeholders in the situation and analyzing the situation from each stakeholder's perspective. The best decision is the one which is pragmatic and addresses the central problem/concern.

#### Example 4

Rehan is a manager who keeps solving his employees' technical problems. He has been given effective training on key management skills such as delegation and coaching and has the skills to set appropriate boundaries with his or her employees. Yet he continues to spend his time solving technical problems faced by the employees rather than empowering them to figure it out themselves.

Rehan's boss has spoken to him about this a few times and has now called in the human resources manager to help him address the issue. It seems that Rehan is one of those technical managers who seem to want to be back in the technical trenches than lead the team.

What should human resources do? What solution can they propose to this situation?

- (A) Ask Rehan's team members to help by not allowing Rehan to solve their technical problems.
- (B) Work with Rehan and set clear benchmarks to measure his management performance.
- (C) Support Rehan if he wants to be rid of his managerial responsibilities and transfer him to a different department for a subordinate's role.
- (D) Send the team members for a technical training so that Rehan does not have to solve the problems in the future.
- (E) Speak with Rehan and tell him that he can revert to his previous position.



## Solution

The first course of action should be to salvage the current situation. Finding a new position for Rehan will not solve this problem. Also, we cannot rely on the subordinates to guide their manager in his role. This eliminates option (A). Option (C) is incorrect as instead of allowing Rehan some more time to better his managerial capabilities, it offers a hasty and piecemeal solution. Option (D) is incorrect as sending the team for training will not help address Rehan's conduct. Option (E) is subtle coercion that will only demotivate Rehan; it is also not a very ethical way to deal with the situation. Thus, the best decision in this scenario is option (B) as it defines the behavior that is expected from Rehan and sets clear benchmarks that will prove helpful to Rehan as well as his superiors.

### In a nutshell

1. Make sure you arrive at an objective decision using only the facts given to you in the statement. Do not let your own knowledge or preconceived notions about the subject matter affect your decision making.
2. In such questions, one must opt for the ideal solution. Therefore, if the choice is between practical and ideal, choose ideal.
3. Always employ impartial and objective thinking- our decisions and views should be unbiased and neutral.
4. Make decisions in sync with the way the system and public departments function.

## 4 Ranking Test

Ranking is the process of determining the position or place of a person or a thing with respect to other persons or things. In ranking questions, relative position or ranking of different group of persons or objects are given and one has to determine position or rank of a person from left to right or from top to bottom of a row or a class or total number of persons is to be calculated. You may also be asked to determine, using data given, which floor which person lives on.



**Important Learning:** Position can be from either side of the row and rank is always from top or bottom of the row.

## Commonly tested ranking question types

### Ordering and ranking questions

In ordering and ranking arrangement questions, rank or position of a person from left, right, top or bottom of a row or class is to be determined. Sometimes the positions of two or more persons are given and total number of persons is to be calculated. You also need to determine that which person is living on which floor.

### **Commonly Tested Ordering and Ranking Question Types**

1. If the positions or ranks of a person from both the sides of a row are known, then the total number of persons in the row can be calculated as below:

Total number of persons = Sum of positions of same person from both the sides – 1

### Example 1

In a row the position of Salim from the left side of the row is 30th and from the right side of the row is 25th. Find total number of students in the row.

### Solution

Total number of students =  $(30 + 25) - 1 = 55 - 1 = 54$

2. If the positions of two persons are given from opposite ends and we know the total number of persons, then the number of persons between these two persons can be calculated as below:

Case I: If the sum of positions of the two persons from opposite ends is less than the total number of persons, then the number of persons between these two persons can be calculated as below:

Number of students between two persons

= Total number of students – Sum of positions of two different persons from opposite sides

### Example 2

In a row of 65 persons, Radha is sitting 26th from the left end of the row and Krishna is sitting 31st from the right end of the row. Find the number of persons sitting between Radha and Krishna?

### Solution

Here Sum of positions of Radha and Krishna from opposite ends =  $26 + 31 = 57 < \text{Total number of persons}$

Therefore, number of persons between Radha and Krishna  
 $= 65 - (26 + 31) = 65 - 57 = 8$

Case II: If the sum of positions of the two persons from opposite ends is greater than the total number of persons, then the number of persons between these two persons can be calculated as below:

Number of persons between two persons

$= \text{Sum of positions of two different persons from opposite sides} - \text{Total number of students} - 2$



### Example 3

In a row of 65 persons, Radha is 31st from the left side of the row and Krishna is 39th from the right side of the row. Find the number of persons sitting between Radha and Krishna?

### Solution

Here, sum of positions of Radha and Krishna from opposite ends =  $31 + 39 = 70 >$  Total number of persons

Therefore, number of persons between Radha and Krishna =  $(31 + 39) - 65 - 2 = 70 - 65 - 2 = 3$

Case III: If positions of different persons from any side are given and total number of students is to be calculated then it is always a case of 'cannot be determined' or 'data inadequate' or 'can't say'. As in this case we do not know if there is overlapping or not.

#### Example 4

In a row, the position of Radha from the left side of the row is 11th and the position of Krishna from the left side of the row is 35th. Find the total number of students in the row?

### Solution

Cannot be determined as position of different persons is given from the same side.

3. In some questions, we need to calculate the minimum number of persons in a row. Such questions are always a case of overlapping, that is, given positions of persons from either sides overlap each other. Then, the minimum number of persons can be calculated as below:

Minimum number of persons = Sum of positions of persons from both sides – Persons between them – 2

### Example 5

If position of Puja from the left side of a row is 12th and the position of Sanjeev from the right side of the row is 15th and only 3 persons are sitting in middle of Puja and Sanjeev. Find the minimum number of persons that can be seated in this row?

### Solution

$$\text{Total number of persons} = 12 + 15 - 3 - 2 = 22$$

### Alphabet test questions

As the name suggests, Alphabet test questions will test you on the English alphabet series. Before we look at the various types of questions you can get in this topic, let's review a few alphabet related concepts.

(i) There are 26 letters – A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(ii) Ranking of letters in the English alphabet series

*From left to right*

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

*From right to left*

A	B	C	D	E	F	G	H	I	J	K	L	M
26	25	24	23	22	21	20	19	18	17	16	15	14
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
13	12	11	10	9	8	7	6	5	4	3	2	1

(iii) Opposite of each letter in the English alphabet series

A	B	C	D	E	F	G	H	I	J	K	L	M
↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Z	Y	X	W	V	U	T	S	R	Q	P	O	N

(iv) There are 5 vowels – A E I O U

(v) There are 21 consonants – B C D F G H J K L M N P Q R S T V W X Y Z

(vi) When the question stem says *to the right*, you have to move from left to right, that is, from A to Z

(vii) When the question stem says *to the left*, you have to move from right to left, that is, from Z to A

(viii) When the question stem says *from the right*, you have to move from right to left, that is, from Z to A

- (ix) When the question stem says *from the left*, you have to move from left to right, that is, from A to Z

### Commonly Tested Alphabet Test Question Types

One important thing to keep in mind while attempting Alphabet test questions is that these are primarily observation-based questions, that is, most of the time you will not really have to solve anything. You will need to observe the letter arrangement that is given to you and answer questions from this. Let's look at some question types that usually appear in the Alphabet test:

1. **Position based questions:** These questions will test you on the position of different letters within the English alphabet system or within a letter arrangement that is given in the question stem.



### Example 6

Which letter will come exactly between the tenth letter from the left and the seventh letter from the right in the English alphabet series?

- (A) N
- (B) O
- (C) P
- (D) Q
- (E) R

### Solution

In the English alphabet series, the 10th letter from the left is J and the 7th letter from the right is T. The letter midway between J and T is O, which is the answer.

**The correct answer is C.**

- 2. Vowel-Consonant type questions:** In these questions, you will be given an arrangement of letters containing a mix of vowels and consonants. The questions will be based on certain arrangements or patterns of these vowels and consonants.

### Example 7

In the letter arrangement given below, how many vowels are preceded by a consonant and followed by a vowel?

DTUHKIUGNRFEBK LZ OANFTGDERO  
PLUJHYG

- (A) 1
- (B) 2
- (C) 3
- (D) 4
- (E) More than 4

## Solution

In such questions, starting from one end of the arrangement (ideally the left end because we read from left to right), look for the vowels. The first vowel you will encounter is U (DTUH....)

Now, check whether it satisfies the criteria given in the questions. While U is preceded by a consonant (T), it is not followed by a vowel. Thus, it cannot be part of the answer. Similarly moving right, come to the next vowel – I (K/UG). I is preceded by a consonant (K) and also followed by a vowel (U). Thus, I is part of the answer. Once again, remember not to underline these terms in your book. What you should do instead is write the entire group of three terms (the vowel, the consonant preceding it and the vowel succeeding it) in your rough sheet (KIU) so that, in case you want to double check your work, you don't have to waste time finding the vowels once again in the given arrangement. Keep moving till the end of the arrangement in the same manner. Your final answer set should look like this: KIU ZOA.

Thus, there are two vowels that satisfy the criteria given in the question.

**The correct answer is B.**

- 3. Make-a-meaningful-word questions:** In these questions, you will be asked to make one or more meaningful word(s) from a given set of letters. These letters could be given to you in isolation or as part of a bigger arrangement.

### Example 8

If it is possible to form just one meaningful word using the letters A F E C, the third letter of that word is your answer. If more than one such word can be made, your answer is 'M' and if no such word can be made, your answer is 'X'.

- (A) F
- (B) C
- (C) E
- (D) M
- (E) X

## Solution

In such questions, you need to draw upon your knowledge of English words, though the words given to you are usually short, containing only four or five letters. Using the alphabets A F E and C we can actually make two meaningful words – FACE and CAFE. Thus, as per the instructions in the question, the answer has to be M.

**Note:** *The use of the term ‘meaningful’ in the question stem is very important because the words that you make need to have some meaning. For example, a choice such as FEAC does not work in the above question because it has no meaning.*

**The correct answer is D.**

- 4. Rule-based questions:** In these questions, you will be given a meaningful English word and you will be asked to base your answer on specific conditions or rules given in the questions.

### Example 9

How many such pairs of letters are there in the word BAROMETER each of which has as many letters between them, (in both forward and backward directions) in the word as they have in the English alphabetical series?

- (A) None
- (B) 1
- (C) 2
- (D) 3
- (E) More than 3

## Solution

In these questions, you need to check various combinations of letters (with reference to the gap between them) as they appear in the given word as against their positions in the English alphabet series. Let's start from the two most left letters: BA. The gap between them is zero (since they come right next to each other). If you look at the position of BA in the English alphabet series, it is still zero because even in the alphabet series they come together.

Thus, BA is one possible answer so jot it down on your rough sheet. Here note that the order of the two letters (that is which comes first in the given word) does not matter since the question stem clearly says that you can move forward or backward.

Now, look for the next combination – BR. In the given word, there is a gap of one letter between B and R whereas in the English alphabet there is a much bigger gap (don't bother calculating this gap because it is obvious that this gap is more than 1 letter). Thus, BR cannot be the answer.

Similarly, now try BO, BM and so on. Once you reach the last combination with B that is BR, you need to start making combinations with A, that is, AR, AO and so on.

Your final answer set will look like this: BA, AROME (gap of 3 letters between A and E, same as in the English alphabet series), TER (gap of 1 letter between T and R, same as in the English alphabet series). Thus, the answer is three.

**The correct answer is D.**



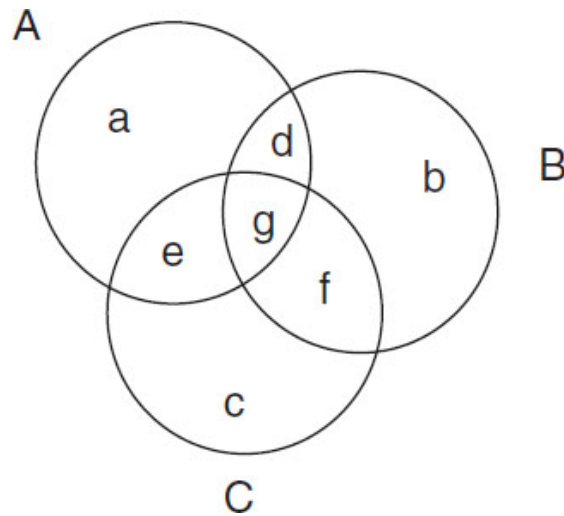
## 5 Venn Diagrams

The idea of representing a set and solving set-based questions on the basis of a diagram was first suggested by Swiss mathematician Euler and was later developed by British mathematician Venn. So, the diagram representing a set is known as Euler–Venn diagram or simply Venn diagram. A Venn diagram uses a closed curve, generally an oval or a circle, to represent a set.

### Important results on set operations:

1.  $n(A \cup B) = n(A) + n(B)$  if A and B are disjoint sets
2.  $n(A \cup B) = n(A) + n(B) - n(A \cap B)$
3.  $n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - (B \cap C) - n(A \cap C) + n(A \cap B \cap C)$

Venn diagram for three sets A, B, and C can be represented as below:



Here, the regions a, b, c, d, e, f and g are identified as below:

a = Only A

b = Only B

c = Only C

d = Both A and B but not C

e = Both A and C but not B

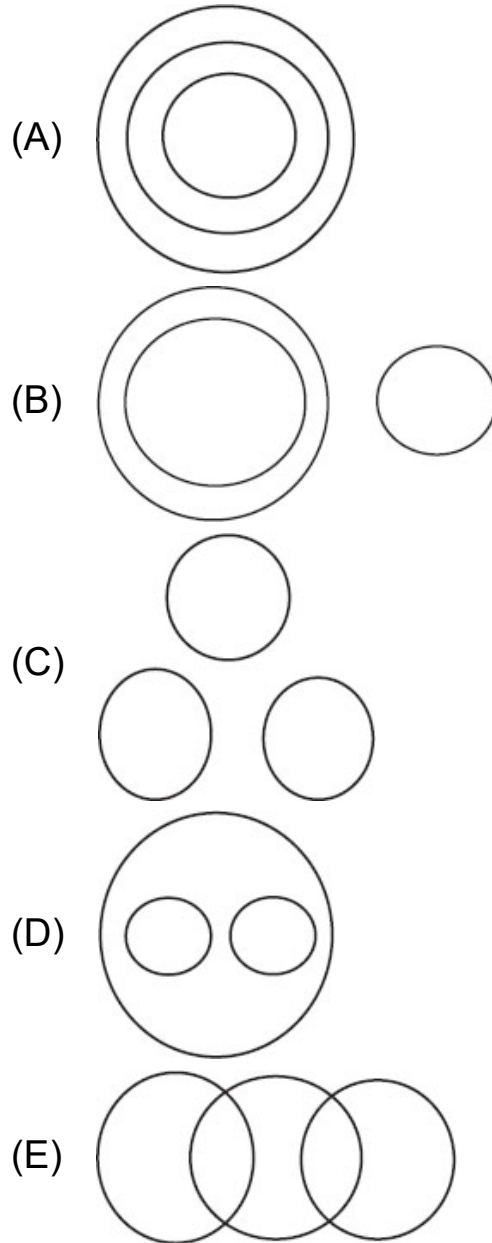
f = Both B and C not A

g = All A, B and C (that is,  $A \cap B \cap C$ )

Let us take a look at an example:

### Example 1

Which of the following diagrams indicates the best relation between tea, coffee and beverages?



### Solution

All tea and coffee are beverages but all beverages are not tea and coffee. Option D expresses this relation correctly.

**The correct answer is D.**

## 6 Syllogisms

A Syllogism is a logical proposition wherein a conclusion is arrived at using two or more quantified statements. You will typically be asked to determine whether this conclusion can logically be arrived at from the given statements or not. The primary difference between Syllogism questions and, say, Inference questions is that Syllogism questions will always use quantifiable terms such as 'all', 'none' and 'some'.

**In Syllogism questions on the NMAT by GMAC™, you will be given two or more statements that will be followed by two or more conclusions.**

Your answer choices will be as follows:

- (A) Only conclusion I follows
- (B) Only conclusion II follows
- (C) Either conclusion I or II follows
- (D) Neither I nor II follows
- (E) Both I and II follow

Let's look at certain concepts of Syllogism before approaching an actual Syllogism question:

1. **Proposition:** Every syllogism question will contain two or more propositions. A proposition is nothing but a statement providing a relation between two terms. For example, *All men are mortals* is a proposition as it provides the relation between the terms *men* and *mortal*.
2. **Use of terms such as Some and All:** Almost every proposition will involve the use of words such as *some*, *all* and *no/none*. If a proposition says *All pens are pencils*, one can conclude that there will not be a single pen that is not a pencil. If a proposition says *Some pens are pencils*, then there could be some pens that are not pencils though it is

not necessary. If a proposition says *No pen is a pencil* then there is not a single pen that is a pencil.

3. **Use of the term *possibility*:** Sometimes, on Syllogism questions, you will come across the term *possibility* in one or more of the given conclusions. Possibility is an interesting term because it may or may not be true. For example, if the two propositions say *Some roses are violets* and *Some violets are jasmine*, then some roses could be jasmine. However, we cannot say this for sure because it is also possible that no rose is jasmine. In such cases, the conclusion *Some roses being jasmine is a possibility* is true because possibility does not mean certainty and there is definitely a possibility that some roses could be jasmine. You will typically see *possibility* being used in the answer choices when one or more of the propositions contain the word *some*.
4. **Answer choices on a Syllogism question:** In a typical Syllogism question, you will be given two statements (propositions), which will be followed by two conclusions. You will need to determine which of these two conclusions logically follows from the given statements. The answer choices will look like this:
  - (A) Only I follows
  - (B) Only II follows
  - (C) Only I and III follow
  - (D) All follow
  - (E) Only III follows

Note that the order of these answer choices might change but the wording of the five options will remain the same. While the remaining answer choices are self-explanatory, answer choice (C) *Only I and III follow* can be confusing at times. Usually, the correct answer will be from one of the other four answer choices. However, there is one situation in which (C) can be correct—*Complementary pairs*. Complementary pairs are two conclusions one of which must be true. For example, the conclusions *Some*

*dogs are cats* and *No dog is a cat* are a complementary pair because one of the conclusions has to be true—either some dogs will be cats or no dog will be a cat. In such cases, the correct answer will be option (C).

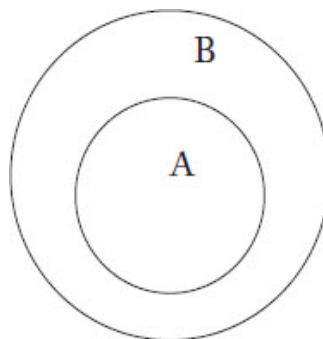
### 5. Use of Venn diagrams to solve Syllogism questions

You can actually make use of Venn diagrams to answer Syllogism questions because representing the information given in the statements pictorially makes it less confusing.

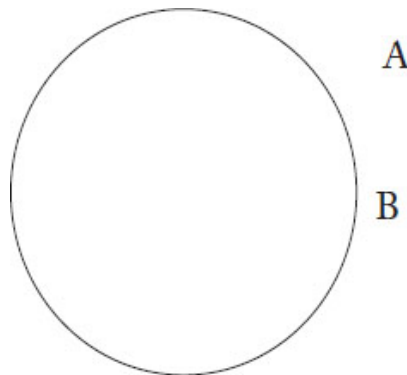
There are four major propositions in Syllogisms that can be represented using Venn diagrams. In all these propositions we will be referring to two entities—A and B—representing each by a circle.

(a) **All A are B** – There are two ways of representing this:

(i) The circle for A is completely within B.



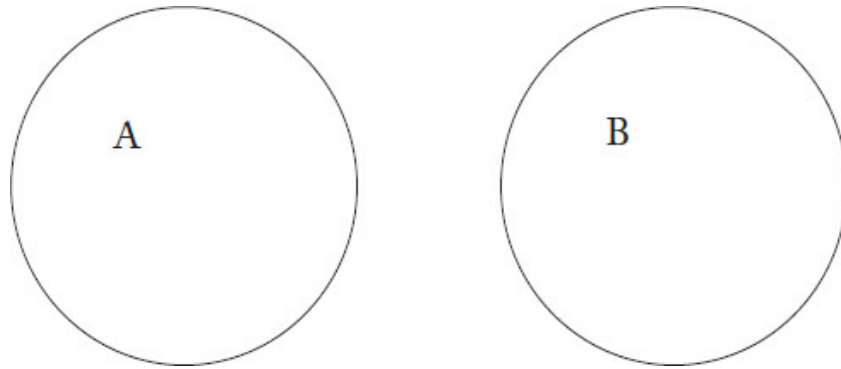
(ii) The circle for A and B is the same, that is, all B are also equal to A.



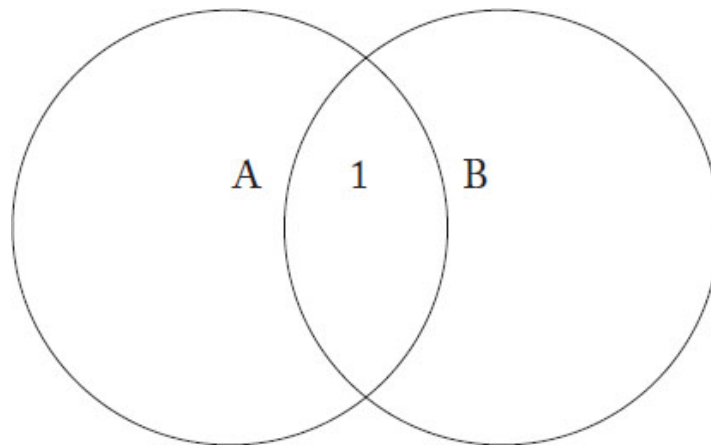
As you can see from the above diagrams, there could be some B that are not A as shown in the first figure. So, *all A*

are *B* does not necessarily mean that *All B are A*.

- (b) **No *A* is *B*** – This is pretty simple. You simply draw two circles representing *A* and *B* with no overlap between them as shown below.

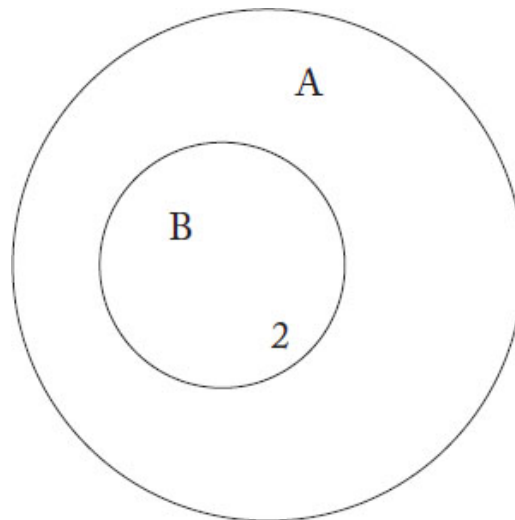


- (c) **Some *A* are *B*** – In this case we draw two circles with some intersecting part that represents the *A* which are also *B*. In the below figure, Number 1 represents the part where Some *A* are *B*.

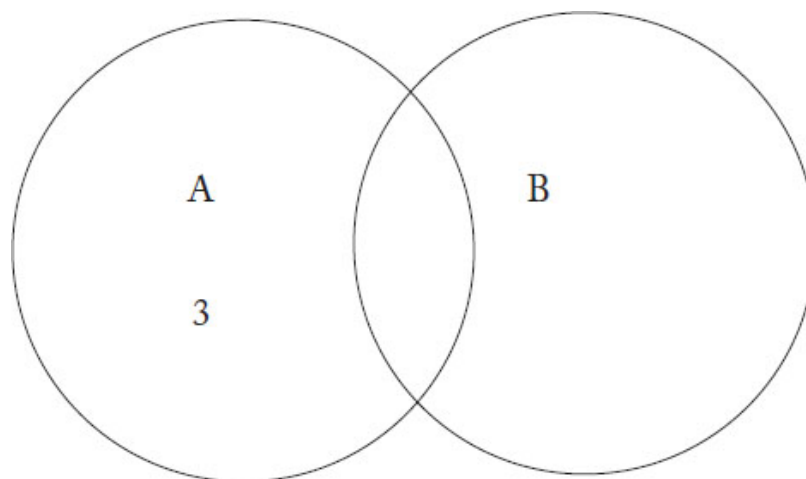


The information can also be represented in the below manner, with Number 2 representing the part where Some *A* are *B*.

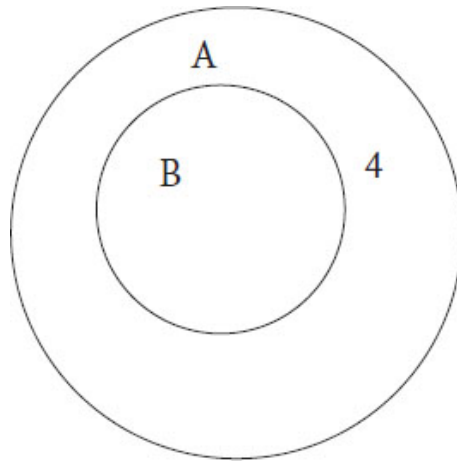




- (d) ***Some A are not B*** – The Venn diagram for this proposition will look exactly the same as for the previous proposition—*Some A are B*. Just the region representing the proposition changes. In the below figure, Number 3 represents the A that are not B.



The information can also be represented in the below manner, with Number 4 representing the part where Some A are not B.



The above four Venn diagrams give you all possible ways of depicting propositions tested on Syllogism questions. However, note that on an actual Syllogism question, you will have two or more propositions (statements) given to you involving three or more entities. Thus, you will always end up making at least three circles.

Let us take a look at an example:

### Example 1

**Statement:** All dogs are animals. All animals are mortal.

**Conclusion** All animals are dogs.

**I:**

**Conclusion** All dogs are mortal.

**II:**

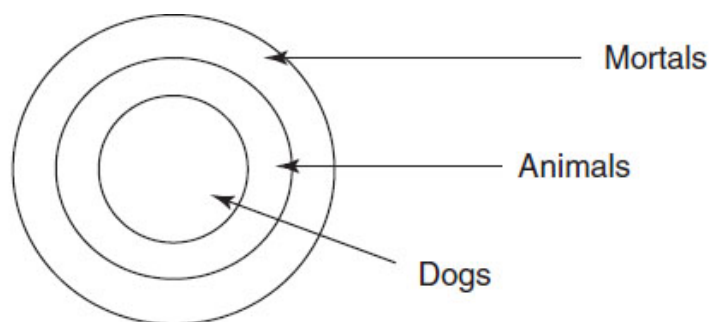
- (A) Only I follows
- (B) Only II follows
- (C) Only I and III follow
- (D) All follow
- (E) Only III follows

## Solution

All dogs are animals, but this does not mean that all animals are dogs. There can also be other animals such as cats, horses and so on. Thus, Conclusion I is invalid. Conclusion II, on the other hand, is perfectly valid because if all dogs are animals and all animals are mortals, then all dogs must be mortals.

**The correct answer is B.**

It may be useful to draw Venn diagrams while answering syllogism questions. For example, in the above question, the answer becomes immediately obvious as soon as you make a Venn diagram, using the information given in the two statements, as shown in the following figure.



Representation of the above question in the form of a Venn diagram



**Important Learning:** If you come across a confusing syllogism question, try to represent the given information in the form of a Venn diagram and you will easily be able to arrive at the answer.

Let us take a look at another example:

## Example 2

**Statements** All capitalists are rich. No Indians are capitalists

**I:**

**Conclusion** No Indians are rich.

**I**

**Conclusion** Some capitalists are Indian.

**II**

- (A) Only conclusion I follows
- (B) Only conclusion II follows
- (C) Either conclusion I or II follows
- (D) Neither I nor II follows
- (E) Both I and II follow

### Solution

The given statements never say that only the capitalists are rich. So, it is possible for Indians to be rich and yet not be capitalists. Thus, Conclusion I is invalid. Conclusion II clearly contradicts the fact given in the second statement. If no Indians are capitalists, then there is no way some capitalists can be Indians. Thus, Conclusion II is also invalid.

**The correct answer is D.**

You can also be tested on Syllogism questions with more than two statements and more than two conclusions.

Let us take a look at an example:

### Example 3

#### **Statements:**

- (1) All the wires are cords.
- (2) All the cords are cables.
- (3) Some threads are cables.

**Conclusion** Some cables are wires.

**I**

**Conclusion** Some threads are cords.

**II**

**Conclusion** All cords are wires.

**III**

- (A) Only I and II follow
- (B) Only I follows
- (C) Only II and III follow
- (D) All the conclusions follow
- (E) None of the conclusions follow

### Solution

If all wires are cords and all cords are cables, then all wires are cables. So, some cables must be wires. Thus Conclusion I is correct.

All cords are cables does not mean that all cables are cords. Thus, there may be cables that are not cords and it could be these cables that the threads overlap with. So we cannot say for sure that some threads are cords. Thus, Conclusion II is not correct.

Similarly, all wires are cords does not mean that all cords are wires. Thus, Conclusion III is also not correct.

**The correct answer is B.**



## 7.0 Logical Reasoning Practice

## 7.1 Practice Questions

**Solve the following questions and indicate the best of the answer choices given.**

# 1 Critical Reasoning

1. A multispeciality clinic was situated in the centre of a small town X, next to a leading software development company. The clinic was attending to and treating numerous patients and was earning a good profit. The software development company, which employed more than 10,000 people was abruptly shut down due to some litigation issues. After a year, the multispeciality clinic also started running into losses and ultimately closed down. The HOD stated that the reason for the losses was the closure of the software company. **(Real NMAT Question)**

Which of the following can be concluded from the passage above?

- (A) All the doctors of the multispeciality clinic left the town once the software company closed down.
  - (B) After the closure of the software company, the multispeciality clinic was the only big employer in the town.
  - (C) The people in the town, even if unemployed, continued to be treated at the multispeciality clinic and were also paying for the treatment.
  - (D) The closure of the software company led to the loss of patients at the multispeciality clinic as most of the diseases originated in the software company.
  - (E) The chief reason for the closure of the multispeciality clinic was the unemployment of the majority of the population in the town as they were not able to afford expensive treatments.
2. If we throw ethics to the wind and dance with the powerful, we must remember that we may step on the devil's tail. So, let's dance with caution. **(Real NMAT Question)**

Which of the following is a conclusion that can be drawn from the above statement?

- (A) The powerful are devils.
- (B) The powerless are not devils.
- (C) Dancing with the powerful is necessary.

- (D) One has to be careful and wise while dealing with power.
- (E) One has to throw ethics to the wind if one wants to dance with the devil.

3. St. Kilda, a tiny cluster of islands and sea stacks perched in the North Atlantic 40 miles west of North Uist, was occupied for more than 4,000 years. A small community once huddled around the curve of Village Bay on Hirta, the largest island. Sheep grazed steep slopes all around. Modest crops of barley, oats, and potatoes were grown in raised beds, where thin soil was carefully augmented with applications of mineral-rich seaweed. Winter storms, rolling unchecked across thousands of miles of open ocean, struck the islands with almost unimaginable ferocity. In 1852, 36 islanders—roughly a third of the population at that time—chose a long and arduous journey to Australia over remaining on St. Kilda. Many perished at sea.

The most logical conclusion to be drawn from the above paragraph would be:

- (A) St. Kilda is not suitable for human inhabitation.
  - (B) A lot of effort is required to make St. Kilda a habitable place, which is why it is no longer inhabited.
  - (C) Even though St. Kilda is not able to support human inhabitation, people persist in trying to eke out a living there.
  - (D) St. Kilda is just barely able to support human inhabitation, but the challenges involved may be too much for some of its inhabitants.
  - (E) The 36 islanders who undertook the arduous journey to Australia were unsuccessful in their attempts.
4. According to the observations, the self-motivated lot set their own targets and were content with their own achievements, whether or not their contributions were externally acknowledged by their supervisors or colleagues. On the other hand, there was the shirker lot, who always looked at ways to shirk their work, whatever be the external motivation. For the most part though, the workers' contributions were in direct proportion to external motivation. **(Real NMAT Question)**

Which of the following can be best concluded from the above statements?

- (A) One should try and keep the shirkers away from the motivated lot.
- (B) Every organisation would gain by having more of the motivated lot.
- (C) Organisations should identify the various kinds of workers working with them.
- (D) The majority of the workers in an organisation work for rewards and compensation.
- (E) Identify the shirkers to try and immediately eliminate them from the system, lest they corrupt the others.

5. Over the last few years e-mail services have become very good at spotting spam. It catches just about every junk message before it hits the inbox; the messages are rerouted to the spam folder, which I myself almost never open (and when I do open it, I never notice legitimate messages marked as spam). In other words, spam—which was once the great boogeyman of the Internet, a scourge that was often predicted to bring down e-mail entirely—is no longer a problem. We have won the War on Spam.

Which of the following, if true, would significantly strengthen the conclusion in this paragraph?

- (A) A number of e-mail services have promised to get better at catching spam in the near future.
- (B) While spam is no longer a problem, the number of e-mails—even legitimate ones—that people get keeps increasing constantly.
- (C) Statistics show that the amount of spam being sent is also going down, as the senders realise that their messages are never read.
- (D) The senders of spam keep coming up with a variety of tricks to bypass spam filters, but so far, the spam filters have kept up with those tricks.
- (E) Yahoo users receive a lot of spam every year.

6. Scientists have discovered that manganese containing Element Z is stronger and more flexible than ordinary manganese because Element Z reduces the problem of small breakages. The level of Element Z in much of the manganese produced in Australia is naturally high because of the natural topography of the region.

Which of the following can be correctly inferred from the statements above?

- (A) Manganese produced from Australian ore deposits contains the highest levels of Element Z found in any manganese.
- (B) Manganese from Australia is stronger and more flexible than manganese from any other country.
- (C) Manganese that is not from Australia is very likely to encounter the problem of small breakages.
- (D) Producing manganese from ore deposits containing Element Z is the best way to make manganese that is strong.
- (E) Some manganese produced in Australia is less likely to develop small breakages than other manganese.

7. A company sells two types of mobile phones – A and B. The total sales of these two phones increased by 24% between 2010 and 2015. In the same period, however, the sales of ‘B’ type mobile phones, most of which were sold from the company’s exclusive outlets, grew by just 6%.

Which of the following conclusions about the company’s sales from 2010–15 is best supported by the statements above?

- (A) Buyers were more likely to buy type ‘A’ mobile phones when they went to multi-brand phone sellers.
- (B) The prices of mobile phones purchased at the company’s exclusive stores were higher than those phones that were purchased elsewhere.
- (C) The sales of type ‘A’ mobile phones increased by more than 24% during this period.
- (D) A majority of type ‘B’ mobile phones were purchased by corporate buyers who tend to make bulk purchases.

(E) The number of people who bought mobile phones from multi-brand sellers increased during this period.

8. Mr. K said that the changed atmosphere in Country A augured well for both, his own country B and country A, and asked both sides to keep their sights on the future. He said, "... let us walk the talk together. Let us not look back...As you have rightly said, let us not be held hostage to whatever has happened earlier. I think we will have to keep our sight on the future." **(Real NMAT Question)**

What do you conclude from the above argument?

- (A) Mr. K doesn't want to look back.
- (B) Mr. K has signed a peace treaty with Country A.
- (C) Mr. K wants to eradicate terrorism from Country B and Country A.
- (D) Mr. K is a futuristic person and thus wants to let bygones be bygones.
- (E) Mr. K believes that rather than looking at the past, Country B and Country A should together move ahead.

9. "Why were you curbing his freedom? Be dignified."

Which of the following is implied in the above? **(Real NMAT Question)**

- (A) Dignity and freedom may co-exist at will.
- (B) Someone was curbing somebody's freedom.
- (C) Dignity and freedom are completely disparate events.
- (D) It's impossible to retain dignity without stepping on someone's freedom.
- (E) It's possible to retain one's self-respect without encroaching on someone else's freedom.

10. The Chairman, Hamid Ansari, tried to restore order in the House and called for the first listed question of the day but BJP members were unrelenting. He then adjourned the House till noon. **(Real NMAT Question)**

What can be inferred from the above argument?

- (A) BJP members like creating nuisance.
- (B) No one cares what the chairman wants.
- (C) Questions that are asked in the House are listed.
- (D) The Chairman has the authority to adjourn the House.
- (E) Adjourning of the House becomes essential when some members are unrelenting.

- 11.** In the National Park, the white tigers hardly moved around, they always looked for opportunities to lie around. **(Real NMAT Question)**

From which of the following can the above statement be most properly inferred?

- (A) White tigers are usually known to be lazy.
- (B) The National Park makes the tigers active.
- (C) Only white tigers are known to hunt their food aggressively.
- (D) If an active tiger is seen at the National Park, it must not be the white tiger.
- (E) Due to their appearance, white tigers attract a lot of attention, which in turn makes them aggressive.

- 12.** A new technology in laser printing is set to improve the quality of images considerably for the same cost. However, a survey revealed that a lot of companies did not plan to switch over to the new technology in the immediate future. **(Real NMAT Question)**

Which of the following is implied in the above statement?

- (A) Some companies think that the new technology might not be successful.
- (B) The quality of the images is not the only thing that the companies look for when deciding on printing solutions.
- (C) The images produced by the new technology require a longer time to dry and this can become a deterrent to its adoption.
- (D) The companies had to consider the cost of switching from existing technology to a new one and that cost was considerable.



- (E) The people handling the purchase decisions are not aware of technological developments and hence take erroneous decisions.

- 13.** Use of credit has both advantages and disadvantages. While one can buy goods through credit option, many consumers may buy things they do not really require or can even afford. But it also allows them to take advantage of bargains when they are short of cash. Anyone who takes advantage of this latter possibility saves money by buying on credit.

Which of the following is an assumption made in the passage above?

- (A) Anyone who wants can buy goods through credit option at no extra cost for which there is no point in using such a facility.
- (B) It is difficult for anyone to show restraint while buying goods through the credit option. However, these goods are usually available on a bargain as well.
- (C) The cost of credit does not exceed the saving on purchases that credit makes possible.
- (D) All purchases made on credit are unnecessary purchases for which using such a facility is a waste of money.
- (E) A buyer who buys goods through the credit option will make use of this facility to even buy goods which have absolutely no utility for him or her.

- 14.** Economists have discovered that, at comparable income levels, people living in rural areas generally have more purchasing power than people living in cities. This is because some of the income that city dwellers use for food and housing can be used by rural dwellers for other needs.

Which of the following assertions is implied the most in the above statements?

- (A) People in both rural and urban areas tend to spend a large proportion of their income on food and housing.
- (B) The actual income of city dwellers is more as compared to rural dwellers.

- (C) People living in rural areas have lower food and housing costs than people living in cities.
- (D) While city dwellers earn more, they also spend more because of higher food and housing costs.
- (E) City dwellers save a larger proportion of their income than rural dwellers.

**15.** A notice in a cinema hall read: "If viewers with a Gold ticket are found sitting in Platinum category seats, they will be fined". (**Real NMAT Question**)

Which of the following statements can be inferred from the given statement?

- (A) There are only two categories of tickets in the cinema hall.
- (B) Gold and Platinum tickets cost the same.
- (C) Viewers with Gold tickets cannot sit in the front seats.
- (D) Viewers with Platinum tickets can sit in the Gold category seats.
- (E) Inspections are carried out in the cinema hall to check the tickets.

**16.** Ramesh whose results were yet to be announced, was seeking information about the college's admission procedure. The college is known to admit only those students who score above 95% in PCM. (**Real NMAT Question**)

What can be inferred from the above statements?

- (A) Ramesh had scored above 95% in PCM.
- (B) Ramesh was confident of scoring above 95% in PCM.
- (C) Like all kids, Ramesh was coming under parental pressure to apply to all colleges.
- (D) The college had announced a possible increase in the cut-off score for admissions into their science stream that year.
- (E) The college had announced a possible reduction in the cut-off score for admissions into their science stream that year.

17. Statement: A very reputed non-banking finance company has launched a loan scheme for buying new agricultural tools. The farmers have responded well to the scheme and it has become successful as it has brought prosperity among the farmers.

Which of the following assumptions is implicit in the above statements?

- (A) The prosperity of farmers is the only measure of the success of a loan scheme.
- (B) Only tools are important for farmers to enhance farm activities.
- (C) Earlier there was no such loan scheme available for farmers.
- (D) Farmers do not prefer taking loans for buying agricultural tools on their own.
- (E) The prosperity of farmers is an important indicator for the success of a loan scheme.

18. Statement: According to a recent survey, innumerable diseases ranging from cancer to AIDS, among others, have plagued mankind due to unhealthy habits.

Which of the following, if true, may be the most plausible cause for the spread of the above mentioned diseases?

- (A) The lifestyle and food habits of people, if not healthy, cause many diseases.
- (B) People themselves are responsible for the environment they live in.
- (C) People are aware of factors that can contribute to lifestyle related diseases.
- (D) Fast pace technological advancement is rampant these days contributing to the spread of diseases.
- (E) Cancer and AIDS are not avoidable by changing lifestyle and food habits.

19. Prateek is not going to get good marks as he continued to play sports in the evening and attend weekend theatre classes during the exam period. (**Real NMAT Question**)

The argument above assumes that:

- (A) Prateek is a bad student and will not fare well in his exams.
- (B) Prateek will do exceedingly well in his sports and theatre classes.
- (C) Prateek was a good student apart from his leanings towards sports and theatre.
- (D) good marks cannot be achieved without giving up on sports and theatre activities during exams.
- (E) one should only study during exams, or do one activity such as sports or theatre, to score good marks.

- 20.** I think that evil begets stupidity. An organisation that wins by exercising power starts to lose the ability to win by doing better work. And it's not fun for a smart person to work in a place where the best ideas aren't the ones that win, and so evil organisations start losing their smartest employees. I think the reason Google embraced the motto 'Don't be evil' so eagerly was not so much to impress the outside world as to inoculate themselves against arrogance.

Which of the following is a basic assumption made in this argument?

- (A) Google is not an evil organisation.
- (B) An organisation that abuses its power is an evil one.
- (C) Smart employees prefer not to work in evil organisations.
- (D) Stupid employees do not mind working in evil organisations.
- (E) Adopting mottos helps an organisation avoid being evil.

- 21.** A Bishop is awarded a punishment of 20 years imprisonment by a court order but after 14 years, he is released on the basis of his good conduct in jail. However, the church refuses to take him back because of his imprisonment. (**Real NMAT Question**)

Which of the following, if true, most severely weakens the argument?

- (A) It depends on the Bishop's inner conscience, which should be the only deciding factor.
- (B) A church is a place of God, so it is right to refuse to take back the Bishop on the grounds of serving a prison sentence.

- (C) A release from prison on the grounds of good conduct cannot be the deciding factor for the church to take back the bishop.
- (D) The Bishop's imprisonment proves that the Bishop has committed a crime, so he does not deserve to serve as a religious head.
- (E) The Bishop has already atoned for his sins and is released on the grounds of good conduct - the church must reinstate him to prove that God is all-forgiving.

- 22.** The Black Spider Monkey of Brazil has become endangered because of human activities such as, deforestation and logging, which causes destruction of the monkey's natural habitat. **(Real NMAT Question)**

Which of the following if true would weaken the above argument?

- (A) Costa Rican government is constantly trying to preserve the natural habitat of the squirrel monkeys in order to save them from extinction.
- (B) A certain allele (alternate gene) discovered in a black spider monkey pointed to micro-evolutionary extinction setting in.
- (C) Habitat loss in the Congo basin has seen no remarkable change in the count of Dryas monkeys in this region.
- (D) Habitat loss in the Congo basin has seen a decrease in the count of Dryas monkeys in this region.
- (E) WWF-funded protected areas have seen a slight revival in the number of the black spider monkey.

- 23.** To increase aircraft occupancy, it is necessary to stop offering food on the airplane so that the prices of tickets can be reduced without reducing the per ticket profit.

Which of the following, if true, will support/strengthen the claim made in the argument above?

- (A) The price of food served on the airplane is almost equal to the price of food in cities.
- (B) Most passengers like to eat to pass their time during flight hours.

- (C) Flight journeys are generally short and it is not inconvenient to avoid eating during the journey.
- (D) Ticket price is not the only issue for people who do not prefer air travel.
- (E) Most passengers regard in-flight food as an integral part of the travel experience.

- 24.** With an active mass media people have now become aware of their rights and are willing to fight for them.

Which of the following, if true, will support/strengthen the claim made in the argument above?

- (A) According to recent data collated by the Consumer forum there is a 150% rise in complaints against poor services.
- (B) Most discussions in mass media are celebrity-centric.
- (C) People got to know about the existence of the Citizen charter for each department only through the websites of those departments.
- (D) Both (A) and (C)
- (E) People have always been very aware of their civil rights.

- 25.** To reduce losses of the fuel marketing companies, the government has decided to deregulate the diesel and petrol prices.

Which of the following, if true, will support/strengthen the claim made in the argument above?

- (A) If prices of petrol and diesel are increased, the demand for them will fall sharply.
- (B) Fuel consumption patterns rarely show any changes in the amount consumed with fluctuation in price.
- (C) Automobile sales have dipped rapidly.
- (D) Farmers use diesel to run machines for agriculture.
- (E) The government has decided to invest in oil refineries.

- 26.** Annual recruitment in public sector banks has increased in the recent years. This will lead to scarcity of talented candidates for private

banks.

Which of the following, if true, will support/strengthen the claim made in the argument above?

- (A) As compared to public sector banks, private banks pay higher salaries.
- (B) There is a limited number of people who have the specialised skill set required for banking jobs.
- (C) Many people do not consider jobs in public sector banks challenging.
- (D) The services of an employee of Public Sector banks cannot be terminated.
- (E) Many people apply for private sector bank jobs.

- 27.** I have no doubt that the Government of India should make Hindi the official language of the country. How can we justify that the government spends so much money to print documents in different languages because of those who cannot read and/or write Hindi. The government should spend tax payers' money for better causes. The Government of India should enable people to learn Hindi at the earliest.

Which of the following, if true, would weaken the speaker's argument the most?

- (A) The government translates official documents into more than eighteen languages to reach people who cannot read or write Hindi.
- (B) Hindi is already the most spoken language in India.
- (C) People who do not know Hindi also pay taxes to the Government of India.
- (D) Many people who travel across the country do learn Hindi within a year.
- (E) Hindi is already the official language of India and other languages are equally important for the country.

- 28.** Most often Scientific journals published in Commonwealth countries refer to articles written in English only. However, there are many

interesting scientific developments reported in other languages. So because of a basic linguistic ignorance on the part of scientists in these countries, articles written in other languages do not get referred. This inevitably results in a failure to benefit from scientific progress made in other non-english speaking areas.

Which of the following, if true, tends to confirm the conclusion given above?

- (A) The linguistic ignorance of a scientist in these countries is an indication of a more general indifference towards foreign languages among the scientific community.
- (B) Many scientific findings reported in scientific journals published in these countries inadvertently repeat studies done in non-english speaking countries.
- (C) All important scientific findings are translated and also published in english-language journals making them available to the scientists of these countries.
- (D) Reporting a scientific progress is a universal phenomenon and is never limited to any single language of a single country.
- (E) Reporting of scientific development is a process that is compulsorily to be published in journals in different languages.

29. 'When women stop reading, the novel will be dead,' declared Ian McEwan in the **Guardian** last year. He reached this rather dire conclusion after venturing into a nearby park in an attempt to give away free novels. The result? Only one 'sensitive male soul' took up his offer, while every woman he approached was 'eager and grateful' to do the same. Unscientific as McEwan's experiment may be, its thesis is borne out by a number of surveys conducted in Britain, the United States and Canada, where men account for a paltry 20 percent of the market for fiction. Unlike the gods of the literary establishment who remain predominantly male—both as writers and critics—their humble readers are overwhelmingly female.

Which of the following most weakens the argument made in this paragraph?

- (A) The people in one park are not a good representative of the entire readership of novels.



- (B) The number of men reading novels may be fewer than the number of women, but men read more novels per capita.
- (C) Men read a variety of books, including plenty of non-fiction, while women read more fiction than non-fiction.
- (D) The male readership of novels is significantly higher than the female readership in places other than Britain, the United States and Canada.
- (E) Men like reading books-the world has always had more male writers than female writers.

**30.** To anthropologists of the future, the gym boom of the past few decades may look more like a sinister cult than a fitness movement. Gym-going, after all, has all the basic lineaments of a religion. Its adherents are motivated by feelings of guilt, and the urge to atone for fleshly sins. Many visit their places of worship with a fanatical regularity: a third of LA Fitness members, for instance, go virtually every day. Once there, believers are led by sacerdotal instructors, who either goad them into mass ecstasy during aerobics classes, or preside over the confessional tête-à-tête of personal training. Each devotee has his own rituals, though most rely on the principles of self-mortification and delayed gratification.

Assuming the following are true, which of them casts most doubt on the argument in this paragraph?

- (A) Not all people turn gym-going into a ritual, or even go regularly.
- (B) Unlike the workings of a cult, those of a gym are above-board and meant to help people, not brainwash them.
- (C) People go to the gym for many reasons, including socializing or just feeling good about themselves, and not for any fanatical reasons.
- (D) There is at least a genuine scientific basis for going to the gym—i.e. getting more exercise and becoming fitter and healthier—unlike joining a cult.
- (E) Cults promote fanatical devotion and commitment, not unlike gyms.

- 31.** Hosting a high-profile sporting event like the Olympic Games or the World Cup can generate significant intangible benefits for the host city or region, whose residents are likely to derive appreciable pride and sense of community from hosting the event. Their homes are the focus of the world's attention for a brief but intense period. The planning and work required to host the event take significant time and effort—much of which is done by volunteers—and engender a considerable local and national sense of accomplishment. These factors are both important and valuable, even though researchers find it difficult to place a dollar value on them.

Which of the following, if true, does NOT weaken the argument made in this paragraph?

- (A) Research shows that cities in which such events are hosted have fewer instances of communal or societal tensions as compared to cities that have never hosted such events.
  - (B) The sense of community and accomplishment last only as long as the event itself lasts, which may be just a few days, and have no long-term effects.
  - (C) The kind of attention garnered by the host city or region may be more negative than positive, i.e. the rest of the world may feel itself licenced to criticise the local politics and culture.
  - (D) There are several cheaper ways in which a sense of community and camaraderie can be promoted.
  - (E) People already have a sense of community by virtue of living in a particular place for a long time.
- 32.** Evolutionary behaviourists are trying to understand why it is that the emotional connection between siblings can last a lifetime. The prevailing theory is that it all comes down to maths. With our nearest relatives—each parent, our full-siblings, and our children, we share 50 percent of our novel genes. This overlap helps explain the continual cycle of family love. The shared 50 percent is the basis for our instinctive willingness to make all sorts of investments and sacrifices—even perhaps the ultimate sacrifice—for those with whom we are closest. On the level of the gene, it's a good idea to ensure those most like us will spread part of our uniqueness. It's a banal truism that what we feel towards our closest relatives is generally

different from our feelings for people with whom we don't share this connection. But why? The researchers say that the emotions of love and fidelity are nature's way of doing the maths on behalf of our genes.

Which of the following facts, if true, would strengthen the argument in this paragraph?

- (A) Research shows that identical twins, who share 100 percent of their genes, are emotionally closer to each other than fraternal twins, who share only 50 percent of their genes.
- (B) Research shows that identical twins, who share 100 percent of their genes, are much more alike than fraternal twins, who share only 50 percent of their genes.
- (C) Research shows that half-siblings, who share only 25 percent of their genes, are not as alike as full-siblings, who share 50 percent of their genes.
- (D) Research shows that half-siblings, who share only 25 percent of their genes, are just as emotionally close as full-siblings, who share 50 percent of their genes.
- (E) Research shows that full-siblings, who share 50 percent of their genes are just as emotionally close as identical twins, who share 100 percent of their genes.

- 33.** Ensuring equal opportunity has long been a prominent goal in many countries, particularly Western Europe and America. These countries have more equality of income - what a person gets for his efforts and the yield of his property after taxes are deducted. Many economists in India believe this concept of equality should be implemented in developing countries in order to speed up economic development.

Which of the following, if true, will bring out the flaw in the argument above?

- (A) In developing countries, equality of opportunity ensures equality of income but a person doesn't get paid for his efforts.
- (B) The excess income in the hands of people with higher incomes provides less utility than extra income in the hands of those with lower incomes.

- (C) High achievement in many societies is due to equality of incomes that comes from the fact that equality of opportunity ensures equality of income.
- (D) In developing countries, gross income of most of the people is so low that if it were distributed equally, no one would save enough to provide resources for investment.
- (E) In developing countries, gross income of most of the people is very low because of rampant corruption and high illiteracy.

- 34.** A popular talk show host has been regularly making fun of a new movie on his programme for the past few days. The director of the movie attributes the poor performance of the movie to this fact.

Which of the following options most seriously weakens the above argument?

- (A) Several other film makers have also accused the talk show host of talking poorly about their movies.
- (B) There has been no change in the ticket prices at movie theatres in the past few months.
- (C) The talk show host has also made fun of several other movies and TV programmes on his talk show during this period.
- (D) The talk show host makes fun of only those movies that perform poorly at the box office.
- (E) The movie has been criticised by some sections of the media too for being overly long and having a clichéd storyline.

- 35.** In a recently conducted survey on the quality of life among the citizens of a city, surveyors spoke to 980 citizens, a majority of whom said that they were satisfied with their quality of life. Thus, it can be concluded that the citizens of this city are satisfied with their quality of life.

Which of the following options most seriously weakens the above argument?

- (A) The surveyors spoke to people from only a particular economic strata.

- (B) Some of the respondents said that they were extremely dissatisfied with their quality of life.
- (C) The survey results are different from what have been reported from other neighbouring cities.
- (D) The survey sample was representative of the entire population of the city.
- (E) The governing body of the city is not very different from the governing bodies of other neighbouring cities.

**36.** There are two ways of successfully completing a marathon—practise running for 4 hours every day or make changes to your diet so that you are consuming more high energy foods. Research has clearly proved that practising running is far more effective than making changes to your diet, as far as competing in a marathon is concerned. Thus, if a person consistently runs for at least 4 hours every day, he is doing the most that can be done to perform well in the marathon.

Which of the following options, if true, most seriously weakens the above argument?

- (A) Some experienced marathon runners believe that diet plays a more important role in their performance than exercise or running.
- (B) The performance in the marathon can be improved further by employing both the strategies together.
- (C) Everyone who competes in a marathon does not necessarily do so for the purpose of winning it, but for its health benefits.
- (D) One of the most important aspects of performing well in a marathon is the ability to manage your pace.
- (E) A marathon is as much a test of endurance as it is of speed.

**37.** Kavita is going to appear for an aptitude test in two months. To successfully clear this test, a person needs to do two things—take 20 practice tests and also attend 15 coaching sessions by a popular teacher. Nobody who has failed to meet the previous two criteria has ever cleared this test. If Kavita takes the 15 coaching sessions, she will only have enough time to attempt 15 practice tests and if she

attempts 20 practice tests, she will only have enough time to take 10 coaching sessions.

The claims above, if true, most strongly support which of the following conclusions?

- (A) Kavita should take all 15 coaching sessions and then take as many tests as she can since tutoring is more important than practising.
- (B) As long as Kavita takes the 20 practice tests, she will most likely be able to clear the aptitude test.
- (C) Kavita will retake the aptitude test if she is not able to successfully clear it the first time.
- (D) Kavita will most likely not be able to clear the aptitude test.
- (E) If Kavita attends the 15 coaching sessions, she will most likely be able to clear the aptitude test.

- 38.** Conservation of tigers is a major concern for wildlife experts across the world since the number of tigers left in the wild is rapidly declining. While several countries are taking steps to counter this fall, experts are unanimously of the opinion that if the tiger is to survive in the wild, its best chances of doing so are in India.

The claims above, if true, most strongly support which of the following conclusions?

- (A) The survival of the tiger is under threat in countries other than India also.
- (B) If the tiger fails to survive in India, it will become extinct.
- (C) The Indian government is not taking enough steps to check the poaching of tigers.
- (D) The maximum number of tigers in the world are found in India.
- (E) The number of tigers outside India is falling at a faster rate than within India.

- 39.** Over the past 2 years, there has been a sharp decline in the number of smokers in college campuses across the city. Over this same period, the city's governing council has spent a lot of money in coming up with advertisements highlighting the harmful effects of

smoking targeted at college students. The authorities conclude that its advertisements have been responsible for the drop in cigarette use at college campuses within the city.

Which of the following options most seriously weakens the above argument?

- (A) There has been no similar decrease in the consumption of alcohol among college students.
- (B) There has been no appreciable decrease in the number of smokers within the city who are not in college.
- (C) The supply of cigarettes has remained unchanged within the city.
- (D) A change in the taxation structure has led to a rapid increase in cigarette prices over the last two years within the city.
- (E) Some studies show that there is no direct relation between smoking and the susceptibility to diseases such as lung cancer.

- 40.** The sale of badminton racquets in Chennai has tripled in the last year. Thus, it can be concluded that more and more people in Chennai have started playing badminton.

Which of the following options most strengthens the above argument?

- (A) Chennai is famous for its badminton racquets and tourists often buy these racquets when they visit Chennai.
- (B) The sales of badminton racquets in other cities have not shown a similar increase.
- (C) The majority of the badminton racquets sold in Chennai were sold to residents of Chennai.
- (D) The sales of cricket bats and golf clubs have also shown an increasing trend in Chennai.
- (E) Badminton racquets are a popular gift item when residents of Chennai visit their relatives in other cities.

- 41.** In the last one month, more than a dozen children have been attacked by Rottweilers (a large dog breed) when they stepped out of

their house to play. Thus, it is unsafe to keep dogs as pets in neighbourhoods with a large population of children.

Which of the following options most strengthens the above argument?

- (A) Rottweilers have also occasionally attacked adults accompanying the children and even other dogs.
- (B) The Rottweiler is known to be a particularly ferocious dog breed that can attack at the slightest of provocations.
- (C) Small dog breeds like the Pug are very friendly towards children and can be safely kept in neighbourhoods with a large population of children.
- (D) Children need to be taught not to tease dogs or run when a dog comes towards them.
- (E) The behaviour exhibited by Rottweilers towards children is representative of the behaviour of all dogs in general.

**42.** Coconut oil is good for hair. *(Real NMAT Question)*

Which of the following statements strengthens the above argument?

- (A) Scientists have found that coconut oil penetrates into the cortex region of the hair, helping to strengthen it.
- (B) Ever since Sheeba started applying coconut oil on her hair, she has been encountering hair loss.
- (C) Coconut oil makes hair greasier than some of the other oils that can be applied on hair.
- (D) Trichologists have stated many times that coconut oil is not suitable for everyone.
- (E) Sometimes, excessive application of coconut oil can make hair brittle.

**43.** India has decided to step up exports of various consumer goods to China.

Which of the following statements strengthens India's decision?  
*(Real NMAT Question)*



- (A) China is the third largest market in the world for these consumer goods.
- (B) The process of getting approval for trade in China is tedious and takes a long time.
- (C) China is known for manufacturing these products at comparatively economical prices.
- (D) The tax paid to the Chinese government on the total turnover in China has increased by 8%.
- (E) Market barriers and cost competitiveness restrict the entry and growth of companies in China.

- 44.** The University has increased the pace of work for getting the NAAC accreditation, which is a must to attract students from all over the country. It has decided to get the accreditation in the next six months. All the requirements for getting A+ grading must be fulfilled. (**Real NMAT Question**)

Which of the following statements weakens the decision of the University?

- (A) A committee has been set up to prepare the Self Study Report of the University in 2 months.
- (B) The required infrastructure will be built up by the contractor in the next 2 years in a phased manner.
- (C) The University Academic Council has done a detailed study of the requirements for NAAC accreditation.
- (D) The Board of Management will review the Self Study Report after 2 months for necessary corrective actions.
- (E) The recruitment of the required minimum number of faculty members will also be done before the inspection of the NAAC team.

- 45. Statement:** Rebellion is known as the disobedience to a lawful authority that is caused due to widespread discontent among certain groups of people. When a government wants to tackle such a situation, it should maintain calm and continue to urge the rebels to hold talks with the authority in order to find a solution together.

Therefore, the government of the day should be mindful, tolerant, and open to peaceful negotiation.

Which of the following, if true, could weaken the argument above?

- (A) When a government shows lack of understanding of its own people, it causes discontentment among its population that results in defiance of its authority.
- (B) People in some part of any country are, by nature, rebellious and hence cannot be made to follow discipline.
- (C) Government of any country, by nature, tends to be authoritative and may not like to be challenged whatever maybe its nature or method of governance.
- (D) It is found that dictators with an iron hand approach have dealt with rebellion successfully.
- (E) When a government shows care for its own people, it causes contentment among its population and no talk is required for solving any problem.

- 46.** It is sometimes mooted that there can be democracy in a two party system. That would be correct if politics were a game like cricket or football; but politics is not sport.

Which of the following would strengthen the argument?

- (A) Two party system is practiced in the maximum number of democracies in the world.
- (B) Politics is a dirty game.
- (C) Two political parties limit the choice of the voters.
- (D) Sports, just like politics needs to be fair.
- (E) A two party system is a waste of time and energy.

- 47.** It is sometimes mooted that there can be democracy in a two party system. That would be correct if politics were a game like cricket or football; but politics is not sport.

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- (E) A two party system is a waste of time and energy.

**48.** Children are often heard saying that they do not want to drink milk as they cannot digest it. (*Real NMAT Question*)

Which of the following arguments strengthens the above statement?

- (A) Children are known to come up with dumb excuses.
- (B) In adults, the ability to digest milk is a genetic adaptation.
- (C) Milk intake is good as it increases the calcium levels in the body.
- (D) Children who avoid milk face an increased risk of pre-pubertal bone fracture.
- (E) It has been scientifically proven that there are lactose-intolerant people who cannot digest milk.

**49.** While China's north-south gradient did retard crop diffusion to some extent, it was less of a barrier there than in the Americas or Africa. China's long east-west rivers (the Yellow River in the north, the Yangtze River in the south) facilitated diffusion of crops and technology between the coast and inland, while its broad east-west expanse and relatively gentle terrain, which eventually permitted those two river systems to be joined by canals, facilitated north-south exchanges. All these geographic factors contributed to the early cultural and political unification of China, whereas western Europe, with a similar area but a more rugged terrain and no such unifying rivers, has resisted cultural and political unification to this day.

Which of the following, if true, would weaken the main argument in this passage?

- (A) Western Europe is mostly industrial and urban, while China is more agrarian and rural.
- (B) The Americas and Africa are no more politically or culturally united than western Europe is.

- (C) Geography is not as important a factor for cultural and political unification, as similarity in languages and lifestyles are.
- (D) Western Europe is made up of many different countries and cultures, while China is a single country with a more homogenous culture.
- (E) Of late, there have been indicators of cultural and political unification in Western European countries as well.

## 2 Deductions

**Directions for Questions 1–7:** For each of the following questions there is one argument followed by two statements. Check whether the statements are valid inferences drawn from the argument. Give your answer.

- (A) If only Inference I can be inferred from the argument.
- (B) If only Inference II can be inferred from the argument.
- (C) If either Inference I or Inference II can be inferred from the argument.
- (D) If neither Inference I nor Inference II can be inferred from the argument.
- (E) If both Inferences I and II can be inferred from the argument.

1. **Argument:** The East coast of the country is prone to natural disasters in the form of thunderstorms and cyclones, which occur for a couple of weeks during the hot season. For most part of the year, the weather is dry and winds are mild along that coast.

**Inferences:**

- I. Hot season lasts for only two weeks on the East coast of the country.
- II. For most part of the year the east coast is safe from disasters.

2. **Argument:** A number of research studies report that the correlation between incomes and residence in slums is nowhere near perfect. People living in slums may actually be well above the conventional standards of poverty as measured by urban poverty lines.

**Inferences:**

- I. Some people live in slums despite being able to afford a house elsewhere.
- II. Poverty lines do not measure incomes accurately.

3. **Argument:** The deforestation activities in the Amazon have generated tremendous revenue for the small South American nations. Now, the people of this region are well-fed, owing much to the state-sponsored food security programmes.

**Inferences:**

- I. People of the South American nations are not self-reliant in buying food.
- II. The small nations in the South American region invest a part of their revenues on food security.

4. **Argument:** Gold prices have dropped in the recent months due to a fall in demand for gold bars. This is contrary to the normal trend seen during the festive season where demand for gold ornaments is higher that results in an increased demand for gold bars.

**Inferences:**

- I. The general belief is that gold prices rise during the festive season.
- II. Demand for gold bars is not connected with the demand for gold ornaments.

5. **Argument:** Programme on television that are targeted at women usually revolve around recipes and hints on household management. The print media also follows suite.

**Inferences:**

- I. Women are interested only in such matters.
- II. Women are not interested in sports.

6. **Argument:** In a cricket league match held in South Africa a team scored 198 runs of which 100 runs were made by all-rounders.

**Inferences:**

- I. More than half of the team consists of all-rounders.
- II. Most of the all-rounders were spinners.

7. **Statement:**

Aluminium manufactured in India is of a much better quality than the aluminium manufactured in other countries across the world.

**Conclusion I:** Indian aluminium manufacturers make huge profits on the sale of their aluminium.

**Conclusion II:** The manufacturing process employed by aluminium manufacturers in India contributes to its better quality.

- (A) Only I can be inferred.
- (B) Only II can be inferred.
- (C) Either I or II can be inferred
- (D) Neither I nor II can be inferred
- (E) Both I and II can be inferred

**Directions for Questions 8–12:** For each of the following questions there is one argument followed by two statements. Check whether the statements are assumptions made in the argument to arrive at the conclusion. Give your answer.

- (A) If only Assumption I is implicit in the argument
- (B) If only Assumption II is implicit in the argument
- (C) If either Assumption I or Assumption II is implicit in the argument
- (D) If neither Assumption I nor Assumption II is implicit in the argument
- (E) If both Assumptions I and II are implicit in the argument

8. **Argument:** Ravi Sharma's new book is refreshingly different. It is based on the emotions that the youth faces in today's metros as they grow up. This book will definitely be his first best-seller.

**Assumptions:**

- I. All books based on the emotions of the youth will be best-sellers.
- II. Ravi Sharma did not have a best-seller till date.

9. **Argument:** Niloufer has received the Employee of the Year award at the Macrosoft Annual Convention. She has also clocked the most

number of hours at work compared to all other colleagues.

**Assumptions:**

- I. 'Employee of the Year' is usually awarded to employees who work longer hours.
- II. Niloufer is quite friendly with her bosses.

- 10. Argument:** Madhu cleaned her room in two days whereas Sapna, who is her elder sister, cleaned her room in three days. It is evident that Madhu cleans rooms quicker than Sapna does.

**Assumptions:**

- I. Madhu's and Sapna's rooms are of the same size.
- II. Sapna loves to clean whereas Madhu loves to play games.

- 11. Argument:** Meena has taught in more than ten schools in the past fifteen years. With her diverse experience in teaching, she should prove to be a very good teaching resource for your new school.

**Assumptions:**

- I. Meena is extremely qualified for the job.
- II. Teaching in many schools for many years makes one a very good teaching resource.

- 12. Argument:** The weather department has forecast an early monsoon this year. Advisories have been issued from all local stations to farmers for hastening the harvest of horticulture crops and preparing the land for sowing of grain crops.

**Assumptions:**

- I. The weather department's forecast is accurate.
- II. Farmers cannot take any decisions without the help of the weather department.

**Directions for Questions 13–19:** In each question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have



to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.

Give answer if

- (A) Only assumption I is implicit,
- (B) Only assumption II is implicit,
- (C) Either assumption I or II is implicit,
- (D) Neither assumption I nor II is implicit,
- (E) Both assumptions I and II are implicit.

- 13. Statement:** Rahul's new car ran off the road causing some damage to the front part of the car. He is claiming insurance on the repairs needed. His insurance premium will shoot up.

**Assumptions:**

- I. Insurance premium shoots up if you claim insurance on the damage of a new car.
- II. Insurance premium shoots up if you claim insurance for damage to the front part of a car.

- 14. Statement:** The 'Everybody Party' has come up with a new sop in its election agenda. It is promising to increase the upper limit of LPG cylinders' ration per family, from 12 to 14 per year. This sop is expected to give the party a clear edge over other parties in garnering the middle-class votes.

**Assumptions:**

- I. The new sop is not promised by any other party.
- II. Middle-class voters will benefit from the raised ration limit of LPG cylinders.

- 15. Statement:** The new mobile phone model of 'Same Song'- Milky Way KD4, is lighter, larger and faster than the previous models. In the first week of its release, the company sold a record 1.3 million sets across the world. This model will be the highest selling model in the sales history of the company.

**Assumptions:**

- I. No other model of 'Same Song' has sold 1.3 million pieces in the first week.
- II. All customers prefer lighter, larger and faster models of mobile phones.

**16. Statement:** Of late, incidents of food poisoning caused by the consumption of grains mixed with impurities have been taking place in rural areas.

**Assumptions:**

- I. There are shops selling grains mixed with impurities in rural areas.
- II. The percentage of people consuming grains is higher in rural areas.

**17. Statement:** Children less than five years of age need to be continually kept mentally stimulated.

**Assumptions:**

- I. A large part of the development of intelligence and other social skills takes place in the early years of a child.
- II. 40 percent of a person's intelligence at the age of 22 can be predicted by the age of five.

**18. Statement:** The Apogee Laptop Company has decided to increase the price of its laptops by 25 percent with immediate effect.

**Assumptions:**

- I. Other laptop manufacturers will also soon raise the prices of their respective laptops since Apogee is the market leader.
- II. The Apogee Company does not expect the demand for its laptops to go down considerably after this hike.

**19. Statement:** Suresh has applied for a loan of Rs. 60000 from his bank to pay for his son's educational expenses.

**Assumptions:**

- I. The bank will reject the loan because it has a policy of not awarding loans for education purpose.

- II. Suresh has failed to arrange for the money from all other sources available to him.

- 20. Directions:** The given statement is followed by a number of assumptions. An assumption is something that is supposed or taken for granted. Assume the given statement to be true, even if it seems to be at variance with commonly known facts. Read the assumptions and decide which one(s) is/are implicit in the statement. **(Real NMAT Question)**

**Statement:**

Some of the best restaurants in the country are found in Kalikapur.

**Assumptions:**

- I. The country boasts of some really world class restaurants.  
II. Kalikapur has access to some of the best chefs in the country.  
(A) Only I is implicit.  
(B) Only II is implicit.  
(C) Neither I nor II is implicit.  
(D) Either I or II is implicit.  
(E) Both I and II are implicit.

- 21. Directions:** The given statement is followed by a number of assumptions. An assumption is something that is supposed or taken for granted. Assume the given statement to be true, even if it seems to be at variance with commonly known facts. Read the assumptions and decide which one(s) is/are implicit in the statement. **(Real NMAT Question)**

**Statement:**

You will never know how big a bookstore can be unless you enter the Delhi Book Store.

**Assumptions:**

- I. The Delhi Book Store has the greatest number of books.  
II. You cannot imagine a book store as big as the Delhi Book Store.

- (A) Only I is an assumption.
- (B) Only II is an assumption.
- (C) Both I and II are assumptions.
- (D) Either I or II is an assumption.
- (E) Neither I nor II is an assumption.

**Directions for Questions 22–31:** In the following questions a fact situation is given followed by two suggested courses. A course of action is a step of administrative decision taken for improvement or follow-up action. Read the situation and then decide which of the given courses of action follows.

Give answer,

- (A) If only course of action I follows
- (B) If only course of action II follows
- (C) If either I or II follows
- (D) If neither course of action follows
- (E) If both courses of action follow

- 22. Statement:** In the wake of the recent spate of vector borne diseases such as Dengue and Malaria, the state government has decided to declare these as notifiable diseases under the existing Epidemics Act. According to this Act, the family members of the patient are bound to inform the state authorities and are liable to be punished in case they do not do so.

**Courses of Action:**

- I. The efficacy of the government's decision depends on effective implementation of the Act. Hence, efforts should be made to implement it in letter and spirit.
- II. The government should propagate the instances of punishment through mass media to make people aware of the stern action taken against the defaulters.

- 23. Statement:** This year conjunctivitis seems to be a major epidemic witnessed after nearly four years even though there have been

sporadic cases of conjunctivitis every year around the monsoons.

**Courses of Action:**

- I. Precautionary initiatives should be taken every four years to check this epidemic.
- II. People should be cautioned not to visit their neighbours during the rainy season.

- 24. Statement:** The bank manager of a city branch had a foreboding that some money might have been missing from the safe of the bank.

**Courses of Action:**

- I. He should get the safe checked with the help of the staff and if required take help of the CA handling the bank's account.
- II. He should lodge an FIR with the police and get the culprit arrested as soon as possible.

- 25. Statement:** A popular news channel is concerned about the quality of its programmes, particularly in light of losing business to its competition.

**Courses of Action:**

- I. It should plan to revise its fee structure for the artists and take various other measures to attract talent for its programmes.
- II. It should take stringent action against people involved in the programmes which lost their popularity and led to a loss in business.

- 26. Statement:** The enteric fever, a water-borne disease, has turned out to be a killer this year. So far it has claimed more than 500 lives across the country. In rural areas of Bihar the toll has been over 100 during the past two weeks.

**Courses of Action:**

- I. The residents of these villages should immediately stop using drinking water from open sources such as ponds and canals.
- II. The Government should immediately send a medical team to this area to restrict spread of the killer disease.

- 27. Statement:** The companies producing fuel in India have been found lacking in both quality and quantity of their supplies to bulk consumers, especially the thermal power stations. This has resulted not only in low volume of power production but also in increased cost of production especially to the thermal power stations.

**Courses of Action:**

- I. The Government should slap legally enforceable penalties on the fuel producing companies defaulting on the quality and quantity of supplies.
- II. The Government should force the fuel producing companies to introduce welfare measures for their employees so that they don't show laxity.

- 28. Statement:** Every year, at the beginning or at the end of the monsoons, we have some cases of conjunctivitis, but this year, it seems to be a major epidemic, witnessed after nearly four years.

**Courses of Action:**

- I. Precautionary measures should be taken after every four years to check this epidemic.
- II. People should be advised to drink boiled water during rainy season.

- 29. Statement:** The Korean garment export industry venturing into the Latin American markets faces tough competition from the Chinese.

**Courses of Action:**

- I. Garment manufacturers from Korea should drop the plans of entering Latin America.
- II. Garment manufacturers from Korea should improve the quality of their products so that they are able to compete better with the Chinese.

- 30. Statement:** The influx of apples imported from California in Indian stores has considerably reduced the demand for indigenous apples, which tend to be of an inferior quality.

**Courses of Action:**

- I. The government should force Indian stores to stop selling the imported apples and incentivise them to sell Indian apples.
- II. To help indigenous apple growers, the government should impose high import duties on imported apples.

**31. Statement:** The state owned airline has been continuously making losses for the past several years with no signs of profits anytime soon.

**Courses of Action:**

- I. The government should provide a bailout package to the airline in order to ensure that it does not collapse.
- II. The government should take steps to ensure that the airline improves its productivity and reduces wasteful expenditure.

**32. Directions:** A statement is followed by a number of courses of action. A course of action is a step or administrative decision to be taken for improvement, follow-up, or further action in regard to the problem, policy, etc., on the basis of the information given in the statement. Assuming everything in the statement to be true, decide which of the suggested courses of action should logically be pursued.  
**(Real NMAT Question)**

**Statement:**

There has been a proposal to establish 25 new Special Economic Zones to bring in Foreign Direct Investment and foster the economic growth and development of industries in the state.

**Courses of Action:**

- I. The authorities should take exigent steps to attract foreign investors and grant consent to the proposal as soon as possible.
- II. The authorities should rethink the proposal since it may involve the displacement of many farmers to acquire land for such a big project.
- III. The authorities must stick to the policy of development through the proliferation of an agrarian economy.

(A) Only I follows.

- (B) Only II follows.
- (C) Both I and II follow.
- (D) All follows.
- (E) None follow.

- 33. Directions:** A statement is followed by three courses of action numbered I, II and III. A course of action is a step or administrative decision to be taken for improvement, follow-up or further action in regard to the problem, policy etc. On the basis of the information given in the statement, decide which of the suggested courses of action should logically be pursued. (*Real NMAT Question*)

**Statement:**

In the last 3 months, at least 12 restaurants in the area have caught fire due to the lack of various safety measures. With slow emergency response times, these incidents have resulted in the death of around 100 people.

**Courses of Action:**

- I. The government should make fire insurance mandatory for all restaurants.
  - II. The government should check the wiring of buildings in the area.
  - III. The Fire Brigade should be made to arrive more promptly.
- (A) Only I follows.
  - (B) Only II follows.
  - (C) Both I and II follow.
  - (D) All follow.
  - (E) None follow.

- 34.** In the following questions a fact situation is given followed by two suggested courses. A course of action is a step of administrative decision taken for improvement or follow-up action. Read the situation and then decide which of the given courses of action follows.

Give answer,



- (A) If only course of action I follows
- (B) If only course of action II follows
- (C) If either I or II follows
- (D) If neither course of action follows
- (E) If both courses of action follow

**Statement:**

Zenith Cotton, India's largest cotton exporter, is incurring huge losses due to an increase in the number of competitors in the market.

**Course of Action:**

- I. The company should offer attractive discounts on all its products to attract customers.
- II. Zenith Cotton should analyse its competition-their products and methods and then take necessary action.

- 35. Directions:** Given alongside are a few facts. Based on these facts, select from among the given statements, the statement that can be concluded to be a fact.

**Facts:**

**Fact 1:** The products available at malls are generally of a better quality.

**Fact 2:** Most of the products available at malls are expensive.

**Fact 3:** The number of people going to malls has gone up tenfold in the last two years.

**Statements:**

- I. Products available at malls may not be expensive.
  - II. There are no cheap products available at malls.
  - III. People don't mind paying more for better quality products.
- (A) Only I can be concluded.
  - (B) Only II can be concluded.

- (C) Only III can be concluded.
- (D) Both I and III can be concluded.
- (E) None of the statements can be concluded.

**36. Directions:** Given alongside are a few facts. Based on these facts, select from among the given statements, the statement that can be concluded to be a fact. **(Real NMAT Question)**

**Facts:**

**Fact 1:** Prof Gupta from the Delhi College of Arts and Sciences wrote two books, one in the area of sociology of science and the other in the area of work sociology.

**Fact 2:** *Sociology of Sciences* is published by a foreign publisher.

**Fact 3:** Books published by Indian publishers are less expensive.

**Statements:**

- I. *Sociology of Science* is more expensive.
  - II. *Sociology of Work* is published by an Indian publisher.
  - III. *Sociology of Work* is priced high.
- (A) Statement II can be concluded.
  - (B) Statement III can be concluded.
  - (C) Statements I and II can be concluded.
  - (D) Statements I and III can be concluded.
  - (E) None of the statements can be concluded.

**37. Directions:** Given alongside are a number of facts. Based on these facts, select from among the given statements, the statement(s) that can also be concluded to be a fact. **(Real NMAT Question)**

**Facts:**

**Fact 1:** ABC is coded as pqr.

**Fact 2:** DEF is coded as stu.

**Fact 3:** BFG is coded as quv.

**Fact 4:** BAG is coded as qpv.

**Statements:**

- I. GHI is coded as vwx.
  - II. ACD is coded as puq.
  - III. FAD is coded as sru.
  - IV. FACE is coded as psqt.
- (A) Only Statement I can be concluded to be a fact.
  - (B) Only Statement II can be concluded to be a fact.
  - (C) Only Statements I and II can be concluded to be facts.
  - (D) Only Statements II and III can be concluded to be facts.
  - (E) None of the statements can be concluded to be a fact.

**Directions for Questions 38–39:** Each question given below consists of a statement, followed by two arguments numbered I and II. You have to decide which of the arguments is a ‘strong’ argument and which is a ‘weak’ argument.

Give answer:

- (A) If only argument I is strong
- (B) If only argument II is strong
- (C) If either I or II is strong
- (D) If neither I nor II is strong and
- (E) If both I and II are strong.

**38. Statement:** Should Drinking be prohibited?

**Arguments:**

- I. Yes. It is wrong to drink away one’s money.
- II. No. Thousands of workers in the wine industry will be rendered unemployed.

**39. Statement:** Should teaching of Tamil be made compulsory at school level in Tamil Nadu?

**Arguments:**

- I. No, where are the trained teachers to teach this language?
- II. Yes, Tamil Nadu's people should be proud of their ancient language.

**Directions for Questions 40–41:** The following questions consist of a statement followed by two arguments numbered I and II. Decide which of the arguments is strong. Select from the following options.

- (A) Only argument I is strong
- (B) Only argument II is strong
- (C) Either argument I or II is strong
- (D) Neither argument I nor II is strong
- (E) Both arguments I and II are strong

- 40. Statement:** Should all the illegal construction that has been carried out in the city by unscrupulous builders be demolished?

**Arguments:**

- I. Yes. This will dissuade such builders from carrying out such activities in future and also punish people for buying such properties.
- II. No. There are people living in these buildings who will have nowhere to go.

- 41. Statement:** Has the easy availability of consumer loans made life easier for the Indian consumer?

**Arguments:**

- I. Yes. The consumers can now buy items that they couldn't afford earlier.
- II. No. The easy availability of these loans can make consumers buy unnecessary things.

**Directions for Questions 42–43:** Each question given below consists of a statement, followed by two arguments numbered I and

II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument. Select from the following options:

- (A) Only argument I is strong
- (B) Only argument II is strong
- (C) Either argument I or II is strong
- (D) Neither argument I nor II is strong
- (E) Both arguments I and II are strong

**42. Statement:** Should more new universities be set up in India?

**Arguments:**

- I. No, the government will have to spend a lot of money in setting up new universities.
- II. Yes, setting up more universities will boost foreign interest in the country's education system.

**43. Statement:** Should the government shut down all loss-making public-sector enterprises?

**Arguments:**

- I. No. This will result in a loss of employment for hundreds of people.
- II. Yes. The government should minimise its loss and spend the amount on creating alternative employment opportunities

### 3 Analytical Puzzles

**Directions for Questions 1–4:** Read the below information and answer the questions that follow.

Six people: C, D, E, F, G and H are standing in a straight line facing North, not necessarily in the same order. F is standing second to the left of D. C is standing fourth to the left of H and H is not standing on the extreme end of the line. D is standing second to the left of E.

1. What is the position of F with respect to E?
  - (A) Immediate left
  - (B) Fourth to the left
  - (C) Third to the left
  - (D) Third to the right
  - (E) None of these
2. Which of the following pairs represents the people standing at the extreme ends of the line?
  - (A) CE
  - (B) FH
  - (C) FE
  - (D) CH
  - (E) None of these
3. Who is standing second to the right of F?
  - (A) H
  - (B) D
  - (C) G
  - (D) E
  - (E) None of these

4. Four of the following five pairs are alike in a certain way based on their position in the above arrangement and so form a group. Which of the following pairs do not belong to the group?
- (A) GC
  - (B) GE
  - (C) HG
  - (D) DE
  - (E) FD

**Directions for Questions 5–8:** Read the below information and answer the questions that follow.

Eight friends N, L, M, R, P, Y, T and Q are sitting around a circular desk facing away from the centre. Each friend has a different car—Lambretta, VW, Lycan, Creta, Ariel, Garmin, Punto and Scorpio, but not necessarily in that order. T is sitting third to the right of P. The one who owns Lambretta is second to the left of the one who owns Lycan. Y owns Lycan and is sitting exactly between P and L. The one who owns Punto is sitting second to the right of N. The one who owns Ariel is second to the right of the person who owns Garmin. P sits third to the left of the person who owns VW. Neither Q nor L is the immediate neighbour of N. Q is fourth to the left of L. N does not own Creta or Ariel. The person who owns Lambretta is sitting second to the right of the person who owns Creta. R owns Lambretta and he is not an immediate neighbour of N.

5. Who sits fourth to the right of L?
- (A) P
  - (B) Y
  - (C) R
  - (D) Q
  - (E) None of these
6. Which of the following cars does N own?
- (A) Punto
  - (B) Scorpio

- (C) Garmin
- (D) VW
- (E) Lycan

7. What is P's position with respect to Q?

- (A) Third to the left
- (B) Fifth to the left
- (C) Second to the right
- (D) Third to the right
- (E) Fourth to the left

8. Which of the following combinations is correct?

- (A) R – Garmin
- (B) Y – Creta
- (C) N – Scorpio
- (D) T – Ariel
- (E) All are true

**Directions for Questions 9–12:** Read the following information and answer the questions that follow.

Sarah, Caitlin, Megan, Amy, Jessica, Emma, Amber and Zoe are sitting around a circular table facing the centre. Each one of them has a favourite fruit or vegetable—dandelion, eggplant, apple, tomato, cherry, spinach, broccoli and beetroot. Sarah sits third to the right of the person who likes tomato. Amy sits second to the left of Amber.

Amber is not an immediate neighbour of the person who likes tomato. Only one person sits between Caitlin who likes spinach and the person who likes tomato.

The person who likes apple sits third to the right of the person who likes spinach. Zoe sits between the person who likes apple and the person who likes eggplant. Jessica is not an immediate neighbour of Zoe.



The person who likes eggplant sits third to the right of the person who likes cherry. Only one person sits between the person who likes broccoli and Emma. Jessica likes neither broccoli nor dandelion.

9. Who sits third to the right of Megan?
- (A) Amber
  - (B) Emma
  - (C) The person who likes dandelion
  - (D) Zoe
  - (E) The person who likes beetroot
10. Which of the following statements must be true?
- (A) Zoe likes dandelion.
  - (B) The person who likes cherry sits to the immediate left of Sarah.
  - (C) Amy sits two places to the right of Amber.
  - (D) Caitlin sits two places to the left of the person who likes tomato.
  - (E) Jessica likes broccoli.
11. What is the position of the person who likes broccoli with respect to Zoe?
- (A) Third to the left
  - (B) Fourth to the right
  - (C) Fifth to the left
  - (D) Fourth to the left
  - (E) Second to the right
12. Which of the following combinations is not correct?
- (A) Amber - cherry
  - (B) Emma - apple
  - (C) Amy - dandelion
  - (D) Zoe - beetroot
  - (E) Caitlin - spinach

**Directions for Questions 13–16:** Read the below information and answer the questions that follow.

Six friends—S, R, P, D, M and K—are sitting around a circular sofa. All are facing the center or all facing outside. S is sitting opposite to R. P is sitting to the right of R but left of D. M is sitting to the left of R. K is sitting to the right of S and left of M. Now, D and K interchange their positions and so do M and R.

- 13.** Who will be sitting second to the right of D?
- (A) S
  - (B) M
  - (C) R
  - (D) P
  - (E) K
- 14.** Four of the following five pairs are alike in a certain way based on their positions in the above arrangement and so form a group. Which of the following pairs do not belong to the group?
- (A) SR
  - (B) DM
  - (C) PS
  - (D) KM
  - (E) RP
- 15.** Who will be sitting opposite to S?
- (A) R
  - (B) M
  - (C) K
  - (D) D
  - (E) P
- 16.** Who will be sitting to the immediate left of K?
- (A) P

- (B) D
- (C) R
- (D) S
- (E) None of these

**Directions for Questions 17–20:** Read the below information and answer the questions that follow.

“Four dogs F, G, H, J and two cats—K and M—will be assigned to exactly six cages numbered 1 to 6. Cage 1 faces Cage 4, Cage 2 faces Cage 5 and Cage 3 faces Cage 6.

The following conditions apply: The cats cannot face each other, else they’ll start fighting. A dog must be put in Cage 1. H must be put in Cage 6. J must be put in a cage whose number is 1 more than the number of K’s cage K and H cannot be opposite each other.”

- 17.** Which one of the following must be true?
- (A) F is assigned to an even numbered cage.
  - (B) F is assigned to Cage 1.
  - (C) J is assigned to Cage 2 or Cage 3.
  - (D) J is assigned to Cage 3 or Cage 4.
  - (E) K is assigned to Cage 2 or Cage 4.
- 18.** If J is assigned to Cage 3, which one of the following could be true?
- (A) F is assigned to Cage 2.
  - (B) F is assigned to Cage 4.
  - (C) G is assigned to Cage 1.
  - (D) G is assigned to Cage 4.
  - (E) M is assigned to Cage 5.
- 19.** Which one of the following must be true?
- (A) A cat is assigned to Cage 2.
  - (B) A cat is assigned to Cage 5.
  - (C) K’s cage is in a different row from M’s cage.

- (D) Each cat is assigned to an even-numbered cage.
- (E) Each dog is assigned to a cage that faces a cat's cage.

**20.** If K's cage is in the same row as H's cage, which one of the following must be true?

- (A) F's cage is in the same row as J's cage.
- (B) F is assigned to a lower-numbered cage than G.
- (C) G is assigned to a lower-numbered cage than M.
- (D) G's cage faces H's cage.
- (E) M's cage is in the same row as G's cage.

**Directions for Questions 21–24:** Based on the information given below, answer the questions that follow. (*Real NMAT Question*)

Five people, Kuldeep, Gaurav, Susmita, Pratima, and Devanshu are working in three branches of a company based at Bangalore, Chennai, and Hyderabad. Two people work in Bangalore and two people work in Chennai. Of these four employees, one works in Accounts and another works in Personnel. The remaining are in Marketing. There are 2 Assistant Managers, one Manager, one Director and one Supervisor.

- 1. Gaurav is the Director in the Marketing division at Chennai.
- 2. Pratima is the Manager at neither the Bangalore nor the Chennai branch. She is in the Accounts department.
- 3. The person in the Personnel department is an Assistant Manager in Bangalore.
- 4. Susmita is at the Bangalore branch working as Supervisor and Devanshu is at the Chennai branch.

**21.** Who is in the Personnel department?

- (A) Devanshu
- (B) Kuldeep
- (C) Pratima
- (D) Susmita
- (E) Gaurav

- 22.** In what capacity is Devanshu working?
- (A) Assistant Manager in Marketing
  - (B) Assistant Manager in Personnel
  - (C) Supervisor in Marketing
  - (D) Director in Marketing
  - (E) Manager in Accounts
- 23.** Which of the following is correct about Kuldeep?
- (A) He is the Assistant Manager in Marketing.
  - (B) He is the Assistant Manager in Personnel.
  - (C) He is the Supervisor in Marketing.
  - (D) He is the Director in Marketing.
  - (E) He is the Manager in Accounts.
- 24.** Which one is the correct combination?
- (A) Gaurav–Chennai–Accounts
  - (B) Pratima–Chennai–Marketing
  - (C) Sushmita-Bangalore-Accounts
  - (D) Devanshu-Hyderabad-Accounts
  - (E) Kuldeep–Assistant Manager–Personnel

**Directions for Questions 25–28:** Read the below information and answer the questions that follow on the basis of this information.

Nine people, Richard, Emmanuel, Luke, Andre, Patrick, Ethan, Jason, Shane and Joshua, stay on different floors of a 9-storey building. All of them own one car each, and each car is of a different colour: blue, white, grey, black, green, yellow, orange, red and pink, not necessarily in that order. The ground floor is numbered 1 and the topmost floor is numbered 9.

1. Shane owns a black coloured car and stays on an even numbered floor. Richard stays on any even numbered floor below the floor on which Shane stays. The person who owns the orange coloured car stays on the fourth floor.

2. Patrick stays on the second floor and owns the white coloured car. The person who owns a pink coloured car stays on the third floor. Richard does not own a green coloured car. There are two floors between the floors on which the people owning the red and the black coloured cars stay.
3. Luke owns a grey coloured car. There are three floors between the floors on which Luke and Jason stay. Andre stays on a floor immediately above Joshua's floor. There is one floor between the floors on which Ethan and Jason stay.
4. Ethan does not own the pink coloured car and does not stay on the ground floor. The person who owns the blue car stays on the top-most floor.

**25.** Who stays on floor number 8?

- (A) Emmanuel
- (B) Andre
- (C) Richard
- (D) Ethan
- (E) Shane

**26.** How many persons are staying between Jason and Emmanuel?

- (A) Three
- (B) Four
- (C) Two
- (D) One
- (E) None of these

**27.** Who stays on the floor immediately below Joshua's floor?

- (A) Ethan
- (B) Andre
- (C) Patrick
- (D) Richard
- (E) Emmanuel or Luke

**28.** Who owns the yellow coloured car?

- (A) Andre
- (B) Ethan
- (C) Emmanuel
- (D) Richard
- (E) Luke

**Directions for Questions 29–32:** Read the following information and answer the questions that follow.

Seven friends—P, T, M, J, V, R and W—are pursuing B.Com, B.A. and B.Sc courses. Three of them are pursuing B.Com, two are pursuing B.A. and two are pursuing B.Sc. Each of them has a favourite musical instrument ranging from banjo, sitar, guitar, flute, violin, saxophone and tabla but not necessarily in the same order. None of those pursuing B.Com like either sitar or violin. M is pursuing B.A. and he likes banjo. R is pursuing B.Sc and likes tabla. J is pursuing B.Com and likes guitar. P, who does not like sitar, is pursuing the same discipline as R. T is pursuing the same discipline as M. V does not like saxophone.

**29.** Who among the following is pursuing B.Com?

- (A) J, V and W
- (B) V, W and T
- (C) J, V and T
- (D) J, P and R
- (E) None of the above

**30.** What is the favourite musical instrument of M?

- (A) Flute
- (B) Sitar
- (C) Guitar
- (D) Banjo
- (E) Saxophone

- 31.** What are the favourite musical instruments of those who are pursuing B.Sc?
- (A) Guitar and Violin  
 (B) Sitar and Tabla  
 (C) Tabla and violin  
 (D) Flute and sitar  
 (E) Violin and saxophone
- 32.** Which of the following combinations is correct?
- (A) J – B.A. - Guitar  
 (B) M – B.Com - Banjo  
 (C) T – B.A. - Tabla  
 (D) T – B.Sc - Sitar  
 (E) W – B.Com - Saxophone

**Directions for Question 33:** A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix I are numbered from 0 to 4 and that of matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'N' can be represented by 10, 40 etc. and 'S' can be represented by 14, 44 etc. Similarly, you have to identify the set for the word NOISE.

Matrix I					
	0	1	2	3	4
0	R	E	O	N	G
1	N	P	V	E	S
2	M	T	I	O	N
3	E	A	I	C	O
4	N	T	A	R	S

Matrix II					
	5	6	7	8	9
5	G	V	E	A	C
6	R	O	N	S	S
7	M	N	E	S	I
8	O	T	I	T	A
9	N	S	N	E	P

- (A) 76, 85, 79, 68, 78



- (B) 40, 66, 87, 79, 96  
 (C) 10, 24, 30, 44, 01  
 (D) 40, 85, 79, 96, 77  
 (E) None of these

**Directions for Questions 34–35:** In each of the following questions a word is represented by a set of numbers selected from Matrix I and Matrix II. Each number is representing an alphabet in the matrices choose the set of numbers from the alternatives to represent each alphabet of the word. The column and rows of Matrix I are numbered from 0 to 4 and those of Matrix II from 5 to 9. In the matrices for N can be coded as 04, 14, 22 etc. Similarly, you have to identify the correct set for the words given in each question.

Matrix I					
	0	1	2	3	4
0	L	F	A	T	N
1	F	A	T	L	N
2	A	T	N	F	L
3	T	N	F	L	A
4	A	T	L	F	N

Matrix II					
	5	6	7	8	9
5	A	U	S	E	O
6	U	E	A	O	S
7	E	A	U	S	O
8	O	S	E	A	U
9	S	E	O	U	A

**34. FAST**

- (A) 01, 23, 20, 41  
 (B) 43, 40, 78, 98  
 (C) 23, 20, 69, 42  
 (D) 01, 34, 69, 41  
 (E) None of these

**35. LEAN**

- (A) 33, 42, 59, 97  
 (B) 13, 66, 20, 31  
 (C) 42, 97, 20, 34

- (D) 00, 85, 88, 99
- (E) None of these

**Directions for Questions 36–39:** Answer the questions that follow based on the information given below. (*Real NMAT Question*)

There are seven trees named A, B, C, D, E, F and G in a garden. It is known that these trees have their heights in an increasing order, which may not be the same as the order of their names. It is also known that their heights in feet are seven consecutive integral values, between 1 and 10 (both inclusive). Tree A is 3 feet taller than tree D. Tree B stands in the middle of the row of seven. The difference in the heights of tree F and tree B, tree F being shorter, is same as the difference between the heights of tree C and tree D, tree C being taller. Tree F is shorter than tree G.

36. The difference in the heights of tree E and tree B is the same as the difference between the heights of tree D and which tree?
- (A) A
  - (B) B
  - (C) C
  - (D) E
  - (E) None of these
37. The difference in the heights of tree G and tree D, in inches, is:
- Note: 12 inches = 1 foot
- (A) 12
  - (B) 24
  - (C) 48
  - (D) Cannot be determined
  - (E) None of these
38. The sum of heights of tree F and tree G, in feet, is:
- (A) 4
  - (B) 6

- (C) 48
- (D) Cannot be determined
- (E) None of these

**39.** The maximum possible height of tree A is greater than the least possible height of tree F by how many feet?

- (A) 5
- (B) 6
- (C) 7
- (D) 8
- (E) None of these

**40.** Find out the two signs to be interchanged in order to make the following equation correct:

$$8 + 7 \times 6 / 16 - 8 = 48$$

- (A) + and –
- (B) – and /
- (C) + and ×
- (D) + and /
- (E) None of the above

**41.** If × stands for 'addition', ÷ stands for 'subtraction', + stands for 'multiplication' and – stands for 'division', then  $40 \times 16 \div 16 - 8 + 10 = ?$

- (A) 5
- (B) 24
- (C) 25
- (D) 36
- (E) 80

**42.** Manage the mathematical symbol to solve this puzzle:

$$16 * 8 * 2 * 3 * 4 = 8$$

- (A) × + ÷ –

(B)  $\times \div + -$

(C)  $- \div + \times$

(D)  $- \div \times +$

(E)  $\div - \times +$

43. If '+' means ' $\div$ ', ' $\times$ ' means '+', '-' means ' $\times$ ' and ' $\div$ ' means '-' then, which of the following will be the correct equation?

(A)  $20 + 25 \div 15 \times 4 - 6 = 10$

(B)  $20 - 5 \times 10 \div 20 + 4 = 20$

(C)  $50 + 10 - 5 \div 5 \times 20 = 40$

(D)  $15 - 5 \times 50 + 25 \div 10 = 40$

(E) None of these.

44. If + means  $\times$ ,  $\div$  means  $-$ ,  $\times$  means  $\div$  and  $-$  means  $+$ , what will be the value of  $16 + 5 \div 9 \times 3 - 20 = ?$

(A) 42

(B) 66

(C) 77

(D) 97

(E) 103

45. By using your numerical and logical reasoning skills please try to figure out which number is missing in the questions below. The numbers around will give you the clues you need to solve the puzzle.

$$16 \div 4 = 144$$

$$15 \div 3 = 144$$

$$10 \div 2 = 64$$

$$20 \div 5 = ?$$

(A) 169

(B) 100

(C) 196

(D) 225

(E) 256

**Directions for Questions 46–49:** A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input:** gas net 54 36 17 fan act 65

**Step 1:** 65 gas net 54 36 17 fan act

Step 2: 65 act gas net 54 36 17 fan

Step 3: 65 act 54 gas net 36 17 fan

Step 4: 65 act 54 fan gas net 36 17

Step 5: 65 act 54 fan 36 gas net 17

Step 6: 65 act 54 fan 36 gas 17 net

**46.** What will be step 3 for the following input?

can axe 32 12 kit 57 bat 89

(A) 89 axe 57 bat 32 can 12 kit

(B) 89 axe 57 bat can 32 12 kit

(C) 89 axe can 32 12 kit 57 bat

(D) 89 axe 57 can 32 12 kit bat

(E) 89 can axe 32 12 kit 57 bat

**47.** How many steps will be needed to complete the following arrangement?

76 cot 64 dog 45 hen 54 urn

(A) 1

(B) 2

(C) 3

(D) 4

(E) 5

48. If step 3 of an input is as given below, which of the following must have definitely been the input?

76 gap 56 ink 14 leg 22 oxe

- (A) oxe 56 ink 56 leg 22 gap 76
- (B) 56 ink 56 leg 22 gap 76 oxe
- (C) 56 76 ink oxe 56 leg 22 gap
- (D) 22 gap 76 oxe 56 ink 56 leg
- (E) Cannot be determined

49. What will be last step for the following input?

tie 56 mat 99 pot 33 jut 22

- (A) jut 99 mat 56 pot 33 tie 22
- (B) 99 jut 56 pot 33 mat 22 tie
- (C) 99 tie 56 pot 33 mat 22 jut
- (D) 99 jut 56 mat 33 pot 22 tie
- (E) 22 jut 33 mat 56 pot 99 tie

**Directions for Questions 50–53:** Based on the information below, answer the question that follows.

Four people Ram, Shyam, Amit and Sumit decide to go trekking in the Himalayas, Vindhyachal, Deccan and Aravallis, not necessarily in that order. On the first night, they decide to retire by four different lakes Nakuchiatal, Mansarovar, Chilka and Pushkar, not necessarily in that order. These lakes are in four different states, Uttaranchal, Madhya Pradesh, Rajasthan and Andhra Pradesh, not necessarily in that order. Further information regarding their whereabouts is as follows: **(Real NMAT Question)**

1. Shyam is staying on Chilka.
2. Mansarovar is on Aravallis which is in Madhya Pradesh.
3. The person at Pushkar has gone trekking in Andhra Pradesh.

- 4. Sumit is at Vindhyachal.
- 5. Ram is trekking in Rajasthan.

- 50.** Which of the following cannot be inferred on the basis of the information given?
- (A) Which state is Chilka lake in?
  - (B) Who has gone to the Himalayas?
  - (C) Who has gone to Andhra Pradesh?
  - (D) Who has gone to Madhya Pradesh?
  - (E) Where is Mansarovar situated?
- 51.** Which of the following is true about Pushkar?
- (A) Amit is trekking there.
  - (B) Pushkar is in Uttaranchal.
  - (C) Ram is trekking there.
  - (D) Shyam is trekking there.
  - (E) Sumit is trekking there.
- 52.** Using the information provided in the problem, which of the following may be deduced?
- i. Ram has not gone to the Aravallis.
  - ii. Amit has gone to Andhra Pradesh.
  - iii. Sumit has not gone to the Himalayas.
- (A) i only
  - (B) ii only
  - (C) iii only
  - (D) i and iii only
  - (E) ii and iii only
- 53.** Where is Shyam trekking?
- (A) At the Himalayas.
  - (B) At Vindhyachal.
  - (C) In Madhya Pradesh.

- (D) In Uttaranchal.
- (E) At Pushkar.

**Directions for Questions 54–57:** A word and number arrangement machine when given an input line of words and numbers rearranges them based on a certain rule. The following arrangement illustrates the pattern of steps that the machine follows.

**Input:** team 40 member appeared 15 all 30 power 25 sentences borings

**Step I:** all team member appeared 15 30 power 25 sentences borings 40

**Step II:** all team power member appeared 15 25 sentences borings 40 30

**Step III:** all team power member borings appeared 15 sentences 40 30 25

**Step IV:** all team power member borings appeared sentences 40 30 25 15

**Step V:** is the final output of the above input.

Answer the questions that follow assuming that the new input given below is processed by the machine in the same manner.

**Input:** Procedures 80 doctors 50 would operation 75 45 American review

- 54.** What is the position of 'American' in Step V?
- (A) Fourth from the right
  - (B) Fourth from the left
  - (C) Sixth from the right



- (D) Fifth from the right
- (E) None of these

**55.** How many steps will be required to complete the arrangement?

- (A) Three
- (B) Four
- (C) Five
- (D) Six
- (E) None of these

**56.** In a certain way in Step III, 'doctors' is related to '80' and 'review' is related to '75'. In the same way 'would' is related to which of the following?

- (A) American
- (B) 45
- (C) 50
- (D) operation
- (E) None of these

**57.** How many words/numbers are there in between 'procedures' and '50' in step IV?

- (A) Three
- (B) Four
- (C) Five
- (D) Six
- (E) Seven

**Directions for Questions 58–61:** A computer programme converts an input series into an output in six steps using a certain logic as illustrated below. (*Real NMAT Question*)

<b>Input</b>	1234	5678	2345	6789	3456
<b>Step 1</b>	10	26	14	30	18
<b>Step 2</b>	JJ	ZZ	NN	DD	RR
<b>Step 3</b>	1224	5652	2331	6759	3438
<b>Step 4</b>	25	90	23	191	98
<b>Step 5</b>	Y	L	W	I	T
<b>Step 6</b>	1	14	3	17	6

Use the same logic for the new input below to answer the question that follows.

<b>New Input</b>	1203	3211	4522	1111	6666
------------------	------	------	------	------	------

- 58.** What is the value of the fourth element in the third step?
- (A) 1078  
(B) 1107  
(C) 3204  
(D) 4509  
(E) 6642
- 59.** Which element of which Step would have the value 29?
- (A) First element of Step 1  
(B) First element of Step 2  
(C) Fifth element of Step 1  
(D) Second element of Step 3  
(E) Second element of Step 4
- 60.** If the new input element '1203' was changed to '3210', what would be the 1<sup>st</sup> element of Step 5?
- (A) B  
(B) C  
(C) D  
(D) E  
(E) F

- 61.** If the new input series was '3021, 1123, 2254, 2222, 5555', what would Step 4 be?
- (A) 86, 52, 39, 31, 35
  - (B) 83, 51, 39, 31, 35
  - (C) 71, 83, 35, 25, 25
  - (D) 35, 39, 25, 25, 84
  - (E) 52, 39, 35, 25, 84

**Directions for Questions 62–65:** Based on the information given below, answer the question that follows.

Five persons, Aman, Faizal, Indra, Kapil and Naveen are a singer, a teacher, a builder, a doctor and an engineer by profession. They each play either the sitar, the guitar, the sarod, the violin or the flute though not in the stated order. **(Real NMAT Question)**

1. Faizal is a singer and can play the sitar.
  2. Kapil cannot play the sarod or the flute.
  3. Naveen is a teacher and cannot play the violin.
  4. Indra is not a builder; he can play the violin.
  5. Aman is doctor and he cannot play the flute.
- 62.** What can the singer play?
- (A) Flute
  - (B) Guitar
  - (C) Sarod
  - (D) Sitar
  - (E) Violin
- 63.** Who is the engineer?
- (A) Aman
  - (B) Faizal
  - (C) Indra

- (D) Kapil
- (E) Naveen

**64.** Who can play the flute?

- (A) Aman
- (B) Faizal
- (C) Indra
- (D) Kapil
- (E) Naveen

**65.** Who is the guitarist?

- (A) Builder
- (B) Doctor
- (C) Engineer
- (D) Teacher
- (E) Singer

**Directions for Questions 66–69:** In an encoder a sequence of numbers is fed and the following outputs are obtained at different stages of the encoder. **(Real NMAT Question)**

<b>Input</b>	14	32	99	110	88	9	11	18
<b>Stage 1:</b>	11	14	32	99	110	88	9	18
<b>Stage 2:</b>	11	99	14	32	110	88	9	18
<b>Stage 3:</b>	11	99	110	14	32	88	9	18
<b>Stage 4:</b>	11	99	110	32	14	88	9	18
<b>Stage 5:</b>	11	99	110	32	9	88	14	18

**66.** If the output at Stage 1 is “31 19 47 86 39 13 66 69”, then what is the output at Stage 5?

- (A) 31 66 47 19 86 13 39 69
- (B) 86 31 47 39 69 13 19 66
- (C) 31 86 39 47 66 13 19 69
- (D) 31 13 39 47 86 66 47 69

(E) Cannot be determined

**67.** If the output at Stage 2 is “system restart will happen in another 20 minutes”, then what is the output at Stage 5?

- (A) another 20 minutes system restart will happen in
- (B) system restart in happen 20 another will minutes
- (C) happen 20 minutes in another will system restart
- (D) system restart will another 20 minutes in happen
- (E) Cannot be determined

**68.** If the output at Stage 5 is “141 273 87 41 78 9 319 1012”, then what is the input to the encoder?

- (A) 141 273 78 9 87 41 319 1012
- (B) 319 41 273 87 9 78 141 1012
- (C) 141 319 78 273 87 41 9 1012
- (D) 41 78 273 9 141 87 319 1012
- (E) Cannot be determined

**69.** If the output at Stage 4 is “wind flows over the river bed cool calm”, then what is the output at Stage 2?

- (A) cool calm river bed over flows the wind
- (B) cool wind flows over the calm river bed
- (C) river bed cool calm wind flows the over
- (D) wind flows river the over bed cool calm
- (E) Cannot be determined

**Directions for Questions 70–73:** In a classroom a teacher chose five different students and asked them each to write a sentence. Each student wrote the sentence but in a manner of their own. The following sentences show the sentence of the teacher and the sentence of each of the students. (*Real NMAT Question*)

Teacher:	This	school	is	the	best	place	to	study
Student 1:	To	this	school	is	the	place	study	best
Student 2:	To	best	this	school	is	the	place	study
Student 3:	To	best	school	this	is	the	place	study
Student 4:	To	best	school	study	this	is	the	place
Student 5:	To	best	school	study	the	this	is	place

- 70.** If the teacher's sentence is "ram is the best student of the class", then what is the sentence of Student 4?
- (A) the student is class ram the best of  
 (B) ram the best student of class is the  
 (C) class the is the best student of ram  
 (D) the ram is best student the class of  
 (E) Cannot be determined
- 71.** If Student 2's sentence is "rats are the most dangerous pets of all", then what is the sentence of Student 5?
- (A) dangerous of all pets are the most rats  
 (B) the most dangerous pets of all are rats  
 (C) rats are most all pets the dangerous of  
 (D) pets the most dangerous of all are rats  
 (E) Cannot be determined
- 72.** If Student 5's sentence is "stars shining bright in night the sky falls", then what is the teacher's sentence?
- (A) bright stars shining in the night sky falls  
 (B) the bright sky night shining falls stars in  
 (C) night stars shining falls in the bright sky  
 (D) bright sky shining stars in the night falls  
 (E) Cannot be determined
- 73.** If Student 4's sentence is "12 92 143 278 69 73 41 39", then what is the sentence given by the teacher?
- (A) 143 92 278 12 69 39 41 73

- (B) 69 143 73 41 92 39 12 278
- (C) 12 39 41 69 73 92 143 278
- (D) 278 143 92 73 69 41 39 12
- (E) Cannot be determined

**Directions for Questions 74–77:** A word-arrangement machine rearranges its input using a particular rule. The following is the illustration of the input and the steps of arrangements. Use the same logic to answer the question that follows. *(Real NMAT Question)*

Input	a	boon	to	the	learning	mind
Step 1:	learning	a	boon	to	the	mind
Step 2:	learning	mind	a	boon	to	the
Step 3:	learning	mind	boon	a	to	the
Step 4:	learning	mind	boon	the	a	to
Step 5:	learning	mind	boon	the	to	a

- 74.** Which of the following would be Step 3 for the following input?

**Input:** the world cup final was held at brazil's capital

- (A) capital brazil's the world cup final was held at
- (B) capital brazil's world final held the cup was at
- (C) capital brazil's world final the cup was held at
- (D) capital brazil's world the cup final was held at
- (E) capital the world cup final was held at brazil's

- 75.** How many steps will be required to get the final output from the following input?

**Input:** kolkata is called the city of palaces

- (A) 2
- (B) 3
- (C) 4
- (D) 5

(E) 6

- 76.** If the following is the second step of an input, what will be the third word from the left in Step 4?

**Step 2:** school late you are for the

- (A) are
- (B) for
- (C) the
- (D) you
- (E) late

- 77.** If the following is the second step of an input, what will be the fourth step?

**Step 2:** monsoon gathers arrives rain as pace in july

- (A) monsoon gathers arrives rain pace july as in
- (B) monsoon gathers arrives rain pace as in july
- (C) monsoon gathers arrives rain pace july in as
- (D) monsoon gathers arrives as rain pace in july
- (E) monsoon gathers rain pace as in july arrives

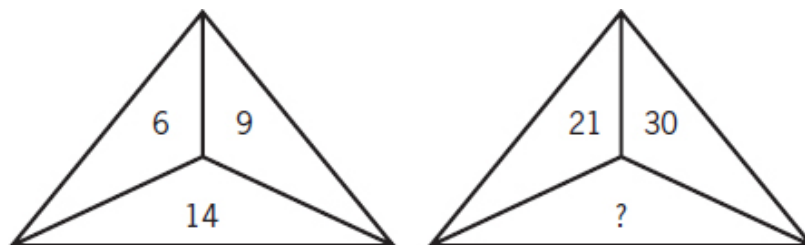


## 4 Other Reasoning

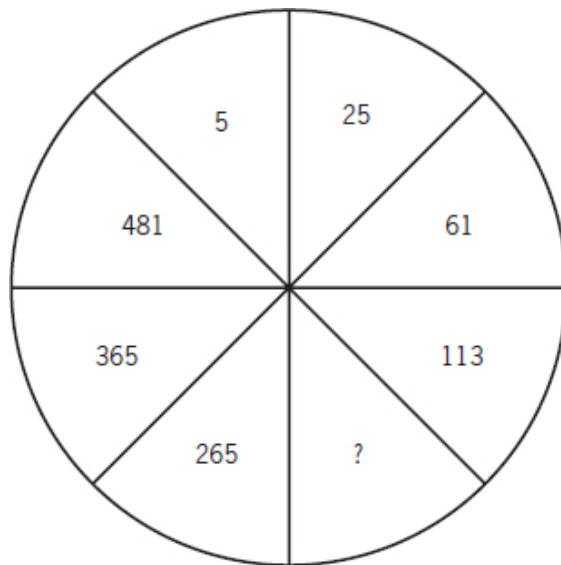
1. What number should come in place of the question mark?

2	3	1	2
3	4	4	5
5	6	6	7
30	43	51	?

- (A) 52  
(B) 56  
(C) 62  
(D) 65  
(E) 70
2. What number should come in place of the question mark?

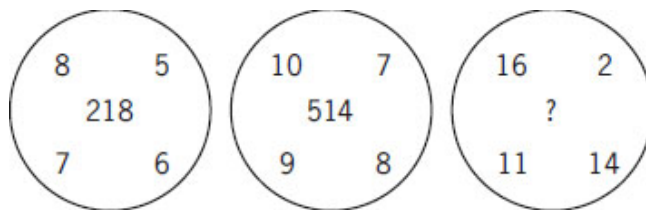


- (A) 29  
(B) 37  
(C) 41  
(D) 47  
(E) 53
3. What number should come in place of the question mark?



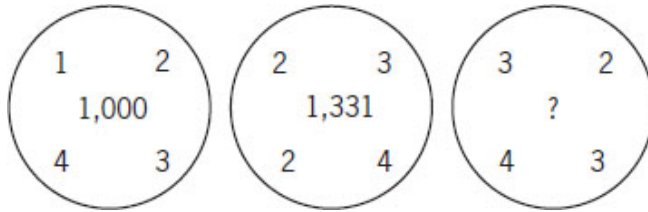
- (A) 121
- (B) 144
- (C) 164
- (D) 181
- (E) 221

4. Which number should replace the question mark? (*Real NMAT Question*)



- (A) 286
- (B) 296
- (C) 304
- (D) 324
- (E) 356

5. Which number should replace the question mark? (*Real NMAT Question*)



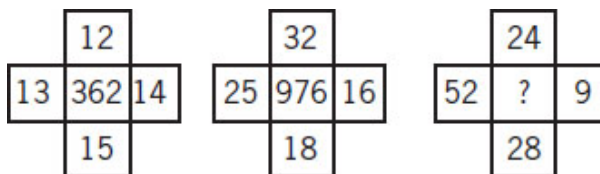
- (A) 1,152
- (B) 1,452
- (C) 1,678
- (D) 1,728
- (E) 1,894

6. What should be in place of the question mark in the figure? (**Real NMAT Question**)

3	2	5	10
4	11	7	?
73	129	368	1,144

- (A) 3
- (B) 4
- (C) 6
- (D) 8
- (E) 12

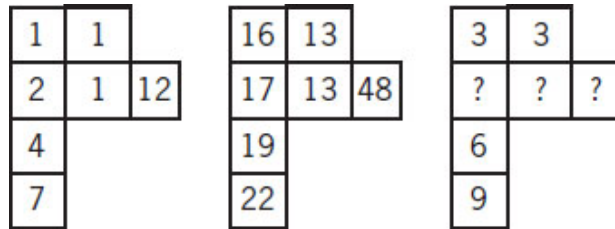
7. Which number can substitute the question mark? (**Real NMAT Question**)



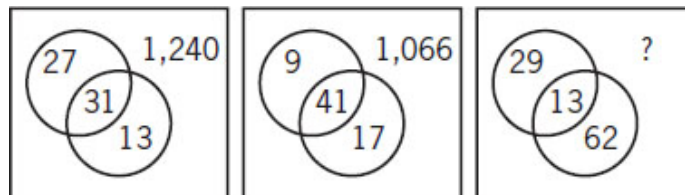
- (A) 950
- (B) 1,140
- (C) 2,666
- (D) 2,878

(E) 3,476

8. Which numbers can replace the question marks in the diagram? (**Real NMAT Question**)

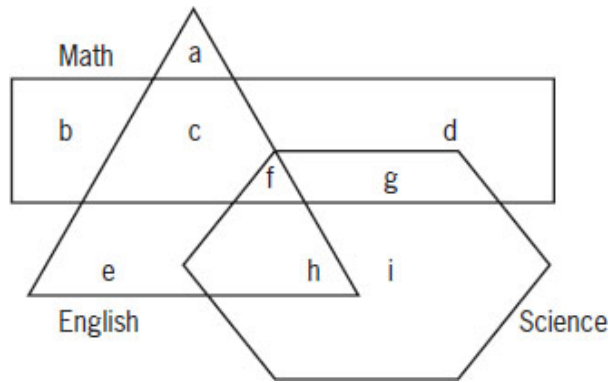


- (A) 4 in first column, 3 in second column and 13 in third column  
(B) 4 in first column, 3 in second column and 16 in third column  
(C) 5 in first column, 4 in second column and 13 in third column  
(D) 5 in first column, 5 in second column and 16 in third column  
(E) 5 in first column, 6 in second column and 13 in third column
9. Which number can substitute the question mark? (**Real NMAT Question**)



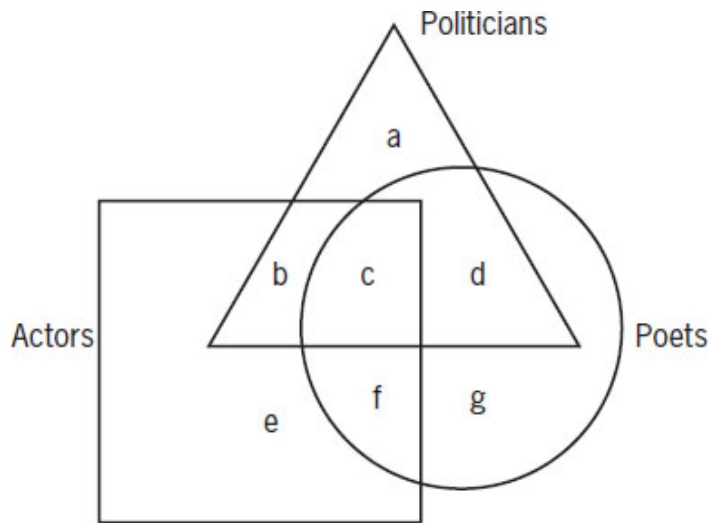
- (A) 3,250  
(B) 3,057  
(C) 2,224  
(D) 1,728  
(E) 1,183
10. The given diagram represents the students who are studying Maths, English and Science.

Students who study English, Maths and Science are represented by:  
(**Real NMAT Question**)



- (A) b
- (B) c
- (C) d
- (D) f
- (E) both (A) and (B)

11. The triangle represents Politicians, the square represents Actors and the circle represents Poets. Which one of the following areas represents Politicians who are Poets but not Actors? (**Real NMAT Question**)



- (A) a
- (B) b
- (C) c
- (D) d

(E) e

- 12.** In a maths class, students were given a surprise test of three questions to be solved in 15 minutes. These questions were of different difficulty levels and scored different marks. Based on the following information, find out how many students scored 12 marks. **(Real NMAT Question)**

- Difficult questions scored 10 marks while medium and easy questions scored 5 and 2 marks respectively.
- There were a total of 180 students and all of them attempted the test.
- 36 students scored a zero in their test and 40 students scored only 2 marks.
- 17 marks were scored by 4 students and 9 students scored 15 marks.
- 12 students scored 7 marks while 31 students scored only 5 marks.
- 27 students scored 10 marks.

(A) 8

(B) 11

(C) 19

(D) 21

(E) 36

- 13.** In a row of 74 people, A is 19th from the left side of the row and B is 22nd from the right side of the row. Find the number of people sitting between A and B. **(Real NMAT Question)**

(A) 31

(B) 32

(C) 33

(D) 34

(E) 35

14. Some friends are ranked according to their ages in descending order. Raman is 18th from the top while Aakash is 14th from the bottom.

Anubhav is exactly at the centre of the column and is 5th from Raman. Where is Aakash as compared to Anubhav? (**Real NMAT Question**)

- (A) 5th place above Anubhav.
  - (B) 8th place above Anubhav.
  - (C) 9th place below Anubhav.
  - (D) 10th place below Anubhav.
  - (E) 12th place below Anubhav.
15. Among the members of club XYZ, 42% are post-graduates, 43% are sportsmen, and 44% are politicians. Among them, 12% are both postgraduates and sportsmen, 13% are both sportsmen and politicians, 14% are post-graduates and politicians, and 4% are post-graduates, sportsmen and politicians. Thirty-six members of XYZ are neither post-graduates nor politicians nor sportsmen.

How many people come under exactly any two of the three categories? (**Real NMAT Question**)

- (A) 162
  - (B) 220
  - (C) 200
  - (D) 186
  - (E) 240
16. There are monkeys, deer, and peacocks in a forest. 80 monkeys, 90 deer, and 70 peacocks do not have any friends. A group of 10 monkeys and 10 peacocks are friends. A group of 15 monkeys and 15 deer are friends. A group of 20 deer and 20 peacocks are friends. There are 10 deer which are friends with 10 monkeys and 10 peacocks. A lion, the king of the animals, collects a tax of 2 apples from each monkey, 3 apples from each deer, and 4 apples from each peacock. How many apples does the lion get? (**Real NMAT Question**)
- (A) 1,065

- (B) 1,075
- (C) 1,085
- (D) 1,095
- (E) 1,105

**Directions for Questions 17–19:** In a company 580 employees are working. The admin of company survey colour for T-shirt distribution. 200 employees like red, 250 employees like pink and 350 employees like yellow. 80 employees like red and pink, 120 employees like pink and yellow and 60 employees like yellow and red. Every Employee likes atleast one of the three T-shirt.

- 17.** The number of employees who like only red is:
- (A) 60
  - (B) 50
  - (C) 40
  - (D) 30
  - (E) 100
- 18.** The number of employees who like only pink is:
- (A) 30
  - (B) 40
  - (C) 50
  - (D) 90
  - (E) None of these
- 19.** The sum of the number of employees who like only yellow and all three is:
- (A) 180
  - (B) 190
  - (C) 170
  - (D) 110
  - (E) None of these



**Directions for Questions 20–23:** Answer these questions on the basis of the information given below:

1,200 students of a college are involved in playing three games. These students are grouped under the following categories.

Game	Number of students
Cricket	400
Hockey	600
Football	800

The following information is also available.

1. The number of players who play Cricket and Hockey is three times the number of players who play all 3 games.
2. The number of players who play Cricket and Football is two times the number of players who play all 3 games.
3. 300 players play only Hockey.
4. The ratio of number of players who play only Cricket to only Football is 2 : 7.

**20.** How many student play Cricket and Football?

- (A) 100
- (B) 200
- (C) 150
- (D) 300
- (E) None of these

**21.** What is the 20% of students who play Cricket and Hockey?

- (A) 10
- (B) 20
- (C) 15
- (D) 30
- (E) None of these

**22.** The number of student who play Hockey and Football is:

- (A) 50
- (B) 100
- (C) 180
- (D) 120
- (E) None of these

**23.** What is the difference between those who play all three games and those who play Hockey only?

- (A) 150
- (B) 240
- (C) 250
- (D) 300
- (E) None of these

**24.** Out of 140 mechanics, 10% can repair all three devices – Air Conditioner (AC), Television (TV) and Refrigerator. The number of mechanics who can repair exactly 2 of 3 electronic devices is 50. The number of mechanics who can repair only TVs is 22. The number of mechanics who can repair only ACs is equal to the number of mechanics who can repair only Refrigerators.

How many mechanics can repair only ACs, if each mechanic can repair at least 1 of the 3 electronic devices? (**Real NMAT Question**)

- (A) 22
- (B) 24
- (C) 26
- (D) 27
- (E) 29

**25.** Out of a total of 150 students in a school, 43 students passed only Pre Medical Test (PMT), 29 passed only Pre Engineering Test (PET), and 62 passed only Pre Pharmacy Test (PPT). Six students passed all the three tests. 4 students did not pass PMT but passed the other two tests. PPT was passed by 50% of the students. A total of 55

students passed PMT. How many students passed both PMT and PET but not PPT? (*Real NMAT Question*)

- (A) 3
  - (B) 4
  - (C) 5
  - (D) 6
  - (E) 10
26. If  $\frac{3}{4}$  of all the chocolates have nuts and  $\frac{1}{3}$  of all the chocolates have both nuts and fruits, then what fraction of all the chocolates has nuts but no fruits?
- (A)  $\frac{1}{4}$
  - (B)  $\frac{5}{12}$
  - (C)  $\frac{1}{2}$
  - (D)  $\frac{7}{12}$
  - (E)  $\frac{5}{6}$
27. In a class, the ratio of the number of boys having mobile phones to the number of girls having mobile phones is 5 : 2. There are a total of 100 students in the class and only 35 students of them have one mobile phone each in their possession. If the boys form only the  $\frac{3}{5}$ <sup>th</sup> part of the class, then what percentages of the girls in the class have mobile phones?
- (A) 20%
  - (B) 24%
  - (C) 25%
  - (D) 40%
  - (E) 50%
28. In a class of 100 students, 60 students like Physics whereas 45 students like Chemistry. Five students don't like either Physics or Chemistry. How many students like both Chemistry and Physics?

- (A) 0
- (B) 5
- (C) 10
- (D) 15
- (E) 20

**29.** A survey of 500 students of DMP University, produced the information that 285 students study MBBS, 195 study BHMS, 115 study BAMS, 45 study MBBS and BAMS, 70 study MBBS and BHMS, 50 study BHMS and BAMS, and 50 study none of the three subjects. How many students study all the three subjects?

- (A) 10
- (B) 15
- (C) 18
- (D) 20
- (E) 25

**30.** There are certain number of students in BRT University. Of all, 25 students study Quant, 12 study English, and 18 study Reasoning. Of these, 10 students study both Quant and English, 9 study both English and Reasoning and 14 study both Reasoning and Quant. If 8 students study all the three subjects, how many students are there in the class?

- (A) 28
- (B) 29
- (C) 30
- (D) 31
- (E) Cannot be determined

**31.** Several incidents of ragging have been reported from medical colleges in the state. The situation has turned serious as a lot of suicides have been committed due to these incidents.

Which of the following will be an appropriate decision that should be adopted by the government in this scenario?

- (A) The government should ignore these incidents as ragging helps build a bond between senior and junior students.
- (B) The government should issue strong guidelines and ensure that colleges take strict action against those found guilty of ragging.
- (C) These matters are not that important and are a result of the media-hype generated by over-sensitive parents.
- (D) The medical colleges where the cases of ragging have been reported should be shut down and an inquiry should be conducted.
- (E) The government has no role in this matter as this issue falls within the purview of college authorities.

- 32.** There is a huge amount of garbage dumped on the northern side of Mount Everest from where thousands of climbers attempt to climb the summit every year.

The organizing authorities are deeply concerned about the condition of this natural marvel and have met to agree on a further course of action? Which of the following will be an appropriate decision to address this concern?

- (A) The climbers should be encouraged to climb from the southern side of the mountain instead.
- (B) There should be a complete ban on any climbing activity on Mount Everest as it a natural marvel that needs to be preserved.
- (C) All mountain-climbing activities on Mount Everest should be suspended for a few years so that the mountain can recuperate.
- (D) The authorities should invest in having the mountain-side cleaned up and issue guidelines to ensure that garbage is not accumulated on the mountain-side.
- (E) The mountain has been there far longer than humans and we should let nature take its course.

- 33.** Lately, there have been several incidents in which many doctors have recommended medicines manufactured by those companies that offer huge commissions to them. The medical council has

received numerous complaints from aggrieved parties that have been forced to purchase these medicines at higher costs.

Which of the following would be an apt decision on the part of the medical council?

- (A) Put a complete ban on the payment of commission by medicine companies to doctors.
- (B) Ignore the complaints-Becoming a doctor is an extremely expensive process. It is okay if they find a way to earn some extra money.
- (C) There have been no reports of these medicines causing any harm to the patients. Therefore, this practice should be allowed to continue.
- (D) The board should encourage this practice as it incentivises the doctors to recommend effective medicines. At the same time, the patients will also benefit by recovering quickly.
- (E) The medical council can make it compulsory for the doctors to prescribe medicines that are commonly available in those localities.

- 34.** Five stations, P, Q, R, S and T, are located on a highway but not necessarily in the same order. Q is the middle station which is towards the immediate left of R. S is not the first station but is towards the left of Q. T is towards the right of S. Which station is located to the immediate left of S? (**Real NMAT Question**)

- (A) P
- (B) R
- (C) T
- (D) Either P or T
- (E) Either P or R

- 35.** In the series given below, which is the 5th element to the left of the 10th element to the right of the 4th element from the left?

AB46^&DKL\* @BHD1987&%+A+V+W&X123\*& (**Real NMAT Question**)

- (A) A

- (B) D
- (C) 8
- (D) L
- (E) &

**Directions for Questions 36–39:** Read the statements given below carefully and answer the following question by choosing the correct alternative among the given five options.

Ten friends are sitting on two parallel lines in such a way that A, B, C, D, E are facing front while P, Q, R, S, T are sitting in the other line and facing the the formers. S is sitting second to the right of P. T is not the neighbour of P or S. There is one person between S and T. D is facing R. C and E are neighbours. B is at the right end of the row. A is facing P. D is not adjacent to B. E is not facing S.

- 36.** Which of the following are sitting on the ends of the row facing north?
- (A) A, B
  - (B) R, S
  - (C) P, T
  - (D) P, Q
  - (E) R, S
- 37.** Who among the following is facing E?
- (A) P
  - (B) R
  - (C) S
  - (D) T
  - (E) Q
- 38.** Which of the following is true regarding C?
- (A) C is facing Q
  - (B) Q is second to the right of the person facing C
  - (C) C is sitting at the centre of the line

- (D) C is at the right end of the line
- (E) None of these

**39.** Which of the following is third to the left of T?

- (A) P
- (B) R
- (C) S
- (D) A
- (E) Q

**Directions for Questions 40–42:** Read the statements given below carefully and answer the following question by choosing the correct alternative among the given five options.

Eight friends P, Q, R, S, T, U, V, and W are sitting around a circular table. Four are not facing the centre. P is sitting fourth to the left of T. T is facing outside. S is immediate neighbour of R. Q is second to the right of S. W is sitting second to the right of U and immediate left of P. U is facing outside and not an immediate neighbour of P. Both the neighbours of U face outside. S faces the centre.

**40.** What is the position of Q with respect to W?

- (A) Second to the right
- (B) Third to the left
- (C) Second to the left
- (D) Third to the right
- (E) None of these

**41.** How many people are there between P and T?

- (A) One
- (B) Two
- (C) Three
- (D) Four
- (E) Five



**42.** Who are facing outside?

- (A) P, Q, T, U
- (B) Q, R, W, S
- (C) Q, T, W, V
- (D) P, T, V, Q
- (E) P, T, U, V

**Directions for Questions 43–46:** Read the following information and answer the questions that follow.

Seven friends Aman, Bimal, Chandu, Disha, Esha, Fulla and Geeta, stay on different floors of a 7-storey building. The ground floor is numbered 1 and the topmost floor is numbered 7. The following information is also considered:

1. Bimal stays on an odd numbered floor but just below the floor on which Disha stays.
2. Geeta stays on an even number floor but below the floor on which Bimal stays.
3. There is one floor between the floors on which Chandu and Disha stay.
4. The sum of the floor numbers on which Aman and Bimal stay is 8.
5. Fulla stays just above the floor on which Disha stays.

**43.** What is the sum of the floor numbers on which Esha and Chandu stay?

- (A) 4
- (B) 5
- (C) 7
- (D) 6
- (E) None of these

**44.** The number of persons between Geeta and Disha is

- (A) One

- (B) Two
- (C) Three
- (D) Four
- (E) None of these

**45.** The square of the floor number of Esha is:

- (A) 1
- (B) 4
- (C) 9
- (D) 16
- (E) 25

**46.** Aman stays just above which of the following persons?

- (A) Esha
- (B) Geeta
- (C) Chandu
- (D) Bimal
- (E) None of these

**Directions for Questions 47–51:** Seven students A, B, C, D, E, F and G take an exam. They all get marks between 50% and 95%. A gets marks more than G but less than E. C gets 10% marks less than B but 10% marks more than F. G does not get minimum marks. C gets marks at fourth rank which was 70%. The highest marks is scored by E which is 10% more than B. Score of A is between 70% and 80%. F scored the second lowest marks.

**47.** Who scored lowest marks?

- (A) B
- (B) D
- (C) F
- (D) G
- (E) None of these

- 48.** Which one of the following options is correct?
- (A) The marks of B is between 70% and 75%.
  - (B) The marks of C is between the score of A and E.
  - (C) The marks of D is between 50% and 60%
  - (D) The marks of A is between 80% and 90%
  - (E) None of these
- 49.** The marks scored by G lies between?
- (A) 50% and 70%
  - (B) 60% and 70%
  - (C) 50% and 60%
  - (D) 70% and 90%
  - (E) None of these
- 50.** The second highest marks is scored by whom?
- (A) A
  - (B) B
  - (C) G
  - (D) F
  - (E) None of these
- 51.** How many pairs of letters in the word 'STAIRS' have as many letters between them (in either direction) in the word as in the English alphabet?
- (A) None
  - (B) 1
  - (C) 2
  - (D) 3
  - (E) More than 3
- 52.** Choose the pair that best represents a similar relationship to the one expressed in the original pair of words/alphabets.
- BDFH:: YWUS: EGIJ:?

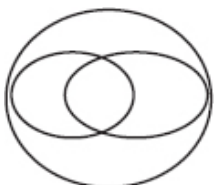
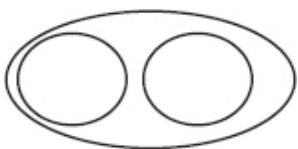

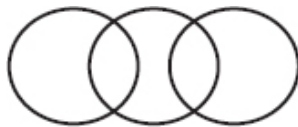
- (A) USQP
- (B) VTRQ
- (C) VWYZ
- (D) VTSR
- (E) YWVU

**53.** Which one of the following option comes in the place of question mark (?)?

ACDG, CAFE, EYHC, GWJA, ?

- (A) HULY
- (B) IVLY
- (C) IULZ
- (D) IULY
- (E) IUMY

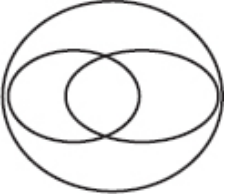
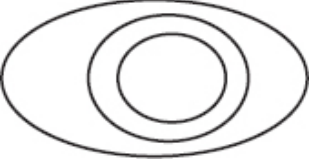


**54.** Which of the following diagrams indicates the best relation between Doctors, Mothers and Fathers.

- (A) 
- (B) 
- (C) 
- (D) 
- (E) None of these

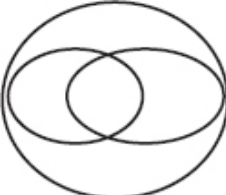
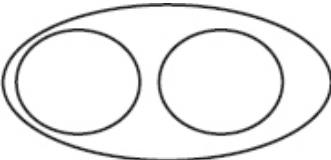

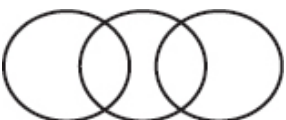
**Directions for Questions 55–56:** In each of the following questions, the three given words are related in one of the five ways

represented by the diagrams given below. Choose the correct diagram which depicts the exact relation among the objects.

**55.** Grandmother, Mother, Girls

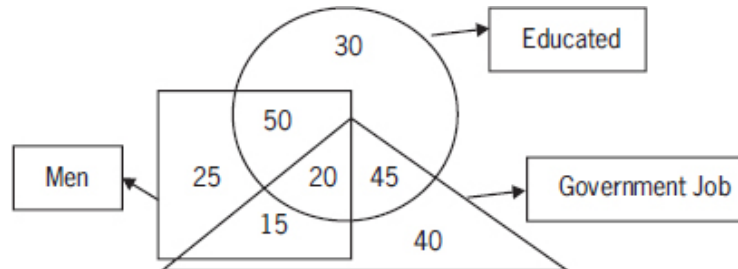
- (A) 
- (B) 
- (C) 
- (D) 
- (E) None of these

**56.** Children, Humans, Animals

- (A) 
- (B) 
- (C) 
- (D) 

(E) None of these

**Directions for Questions 57–58:** Study the following figure and answer the questions that follow.



- 57.** How many educated men are in government job?
- (A) 25  
(B) 20  
(C) 50  
(D) 30  
(E) 35
- 58.** Find the number of people in government job who are not educated.
- (A) 35  
(B) 40  
(C) 50  
(D) 55  
(E) 65
- 59.** The following question has a few statements followed by conclusion. Read the statements and logically select the conclusions that follow the statements.

**Statements:**

Some cars are trucks.

All trucks are airplanes.

Some airplanes are trains.

No car is a train.

**Conclusions:**

- (A) All cars are airplane
- (B) All trucks are trains
- (C) All trains being airplanes is a possibility.
- (D) No truck is a train
- (E) None of these.

**Directions for Questions 60–62:** In each of the questions below, three statements are followed by three or four conclusions. Decide which of the given conclusion(s) logically follow(s) from the given statements, and hence is/are true.

**60. Statements:**

- (1) Some parks are ground.
- (2) No ground is sky.
- (3) All sky are walls

**Conclusion I** Some walls are parks.

**Conclusion II** Some sky are parks.

**Conclusion III** No wall is a park.

- (A) Either conclusion I or III follows
- (B) Either conclusion II or III and conclusion I follows
- (C) Only conclusion II follows
- (D) Only conclusion III follows
- (E) None follows

**61. Statements:**

- (1) Some gifts are box.
- (2) All cream are grapes.

(3) Some cream is box.

**Conclusion I** Some cream are gift.

**Conclusion II** Some grapes are box.

**Conclusion III** No cream is gift.

- (A) Either conclusion I or III and II follows
- (B) Only conclusion II follows
- (C) Conclusion III follows
- (D) Either conclusion I or III follows
- (E) None follows

**62. Statements:**

(1) Some print are wrong.

(2) All wrong are deform.

(3) No deform are right.

**Conclusion I** Some print are deform.

**Conclusion II** Some print are right.

**Conclusion III** Some deform are wrong.

**Conclusion IV** All deform are wrong.

- (A) Only conclusion IV follow
- (B) Conclusions I and II follow
- (C) Conclusions I and III follow
- (D) None follows
- (E) Conclusion III follows

**Directions for Questions 63–67:** In each of the questions/set of questions below, statements are given followed by the conclusions numbered accordingly. You have to assume all the statements to be true even if they seem to be at variance from commonly known



facts and then decide which of the given conclusions logically follows from the information given in the statements. Give answer.

- (A) If only conclusion I follows.
- (B) If only conclusion II follows.
- (C) If either conclusion I or II follows.
- (D) If neither conclusion I nor II follows.
- (E) If both conclusions I and II follow.

**63. Statements:**

- (1) All ships are goats.
- (2) All goats are cows.
- (3) No goat is a horse.

**Conclusion I** Some horses are cows.

**Conclusion II** No horse is a cow.

**64. Statements:**

- (1) Some stones are rocks.
- (2) Some rocks are rings.

**Conclusion I** Some stones are rings.

**Conclusion II** Some rocks are stones.

**65. Statements:**

- (1) Some grapes are strawberries.
- (2) All strawberries are oranges.
- (3) Some oranges are apples.

**Conclusion I** All strawberries are apples.

**Conclusion II** Some grapes are not strawberries.

**66. Statements:**

(1) All sheeps are goats.

(2) Some goats are dogs.

(3) All cats are dogs.

**Conclusion I** No cat is a sheep.

**Conclusion II** Some cats are goats.

**67. Statements:**

(1) No desk is a room.

(2) Some desks are halls.

**Conclusion I** Some halls are definitely not desks.

**Conclusion II** No room is a hall

## 7.2 Answers and Explanations

**The following discussion on answers and explanations is intended to familiarise you with the most efficient and effective approaches to these kinds of questions. Remember that it is the problem solving strategy that is important, not the specific details of a particular question.**

# 1 Critical Reasoning

## 1. Argument Construction:

The passage states that a multispecialty hospital in a small town had to close its operations due to the shutting down of a software company. We have to look for an option that establishes a link between these two phenomena. Before we look at the options we can ascertain that the shuttering down of the software company should have had some impact either on the earning capacity of the people or their employability. Note that it is a small town and the shutting down of a leading software firm employing more than 10,000 people will have a significant impact on the employment rates of that town which will in-turn impact the purchasing power of the people. Let us consider the options now.

- (A) This option is illogical as there is no plausible relation between the doctors working at the hospital and the software company.
- (B) If this had been the case, then the multispecialty hospital would have continued to flourish as there would have been no dearth of manpower.
- (C) Again, if this statement were true, the multispecialty hospital would have continued to function unaffected.
- (D) This statement is partially correct. We have already established that there has to be some relation between the people working at the software company and the success of the multispecialty hospital. However, the reason provided for this link - most of the diseases originated in the software company, is bizarre and incoherent.
- (E) Correct. Logically, the only connection between the clinic closing down and the software company closing down has to be the fact that the employees of the software company were the regular clientele of the clinic. When the software company shut down, this clientele was lost and so the clinic also had to shut down eventually. E conveys this reasoning and should be the correct answer.

**The correct answer is E.**

**2. Argument Construction:**

The argument states that if we do not bother about ethics while getting involved with powerful people, we may face trouble. So, we should be careful. We have to look for the correct conclusion to the given argument. Let us consider the options now.

- (A) In the given argument, “stepping on the devil’s tail” refers to getting into trouble. So, the option cannot be concluded.
- (B) The option can only be true if the argument suggests that “only” the powerful are devils. But, such a conclusion cannot be drawn from the argument. Hence, it is incorrect.
- (C) The argument does not suggest that it is necessary to deal with the powerful and hence, the option cannot be concluded.
- (D) Correct. The argument states that while dealing with the powerful, if we do not follow ethics, we can get in trouble and hence, we should be careful while dealing with the powerful. So, the given option is a direct conclusion from the argument.
- (E) This option is incorrect because the argument does not suggest that the only way of getting into trouble is to forget ethics.

**The correct answer is D**

**3. Argument Construction:**

St.Kilda, a tiny cluster of islands in the North Atlantic had a harsh climate and severe conditions that made it extremely difficult for its inhabitants to survive there. In 1,852, a group of islanders undertook a perilous journey across the sea to find better opportunities.

- (A) The fact that people have been living on St. Kilda for 4,000 years contradicts option A.
- (B) Option B assumes facts not stated in the passage, i.e., that St. Kilda is no longer inhabited.
- (C) Similar to option A, option C also contradicts the information given in the passage.
- (D) Correct. option D encapsulates the central idea being discussed in the passage: that living on St. Kilda was so tough

that some of its inhabitants decided it was too much for them (and chose a risky sea voyage over continuing to stay there). Also, option D uses the words barely and maybe which make the statement true.

- (E) Though the passage does mention that many of the 36 passengers perished at the sea, it cannot be concluded that the journey was unsuccessful. We have no information regarding this aspect. Hence, it is beyond the scope of the passage.

**The correct answer is D.**

#### **4. Argument Construction:**

There are employees who tend to be self-motivated and those who don't. Irrespective of it, external motivation always helps boost employee productivity.

- (A) Keeping shirkers away may or may not result in better productivity. Therefore this cannot be concluded from the given data.
- (B) Correct. Motivated employees yield better productivity. Hence, this can easily be concluded from the given data.
- (C) Identification alone won't boost productivity. This cannot be concluded from the given data.
- (D) This is an incomplete statement as it does not make any reference to employee motivation. Thus, it cannot be a valid conclusion.
- (E) This statement suggests an extreme measure. Hence, it cannot be a valid conclusion.

**The correct answer is B.**

#### **5. Argument Construction:**

The passage argues that the war on spam has been won. It presents the enhanced security features of google as evidence for this claim.

- (A) The fact that e-mail services will get better at catching spam in the future does not really strengthen this conclusion, as they are evidently doing the job very well even now. So option A is ruled out.

- (B) Option B is irrelevant, as the paragraph is about spam, not legitimate e-mail.
- (C) Correct. Option C strengthens the conclusion, by showing that even the senders of spam may be slowly acknowledging defeat.
- (D) Option D slightly weakens the argument, as the phrase 'so far' implies that the spam filters may not be able to keep up in the future.
- (E) This option goes beyond the scope of the passage

**The correct answer is C.**

## **6. Argument Construction:**

Scientists state the advantage of Element Z in manganese and the argument specifies that this element is naturally high in manganese found in Australia. This certainly makes the manganese found in Australia more desirable.

- (A) This option states 'highest'. The argument doesn't give us sufficient data where we can infer Australian manganese having the highest amount of element Z.
- (B) The argument says the level of element Z is high in manganese found in Australia but since we cannot compare it with other countries, this is an incorrect option.
- (C) This option can also be eliminated by the same logic that since no other country is mentioned, we cannot say for sure that Manganese that is not from Australia is very likely to encounter the problem of small breakages.
- (D) There may be other ways of making manganese strong, adding element Z being one of them. So this conclusion becomes uncertain.
- (E) Correct. This statement becomes correct because of the word 'some'. It is a certain conclusion as Australian manganese has high amounts of element Z.

**The correct answer is E.**

## **7. Argument Construction:**

This is basically a question which tests averages. If the average of A and B is 24%, out of which B is only 6%, then A has to be greater than 24%.

- (A) Since there is no comparison made between A and other brands, this cannot be inferred.
- (B) Talking about prices makes the argument out of scope as there is no mention of them in the argument.
- (C) Correct. By averages, we can certainly conclude this.
- (D) Had this been true, the percentage of B phones would have been higher than A. So this cannot be inferred.
- (E) We cannot say with certainty if the number of people who buy phones may have increased. So this is an incorrect option.

**The correct answer is C.**

## **8. Argument Construction:**

Mr. K belongs to country B and it is clear that there have been some issues between countries A and B. The atmosphere in country A has changed and Mr. K believes that this will benefit the relationship between countries A and B. He states that they should not ponder over the past situation and focus on the future. Both the countries should look forward to a favourable relationship in the future. Now, let us look at the statements to find a correct conclusion.

- (A) This is a vague conclusion. Mr. K suggests both the countries to not ponder over the past. This does not suggest that Mr. K does not want to look back.
- (B) There is no mention of a peace treaty. The changed atmosphere of country A does not suggest a peace treaty with Mr. K or with anyone else.
- (C) There is no mention or reference to terrorism in the given argument. Hence, it is incorrect.
- (D) "Futuristic" means related to the future or very advanced. A futuristic person need not necessarily be interested in letting the past go. Hence, the option is in itself flawed.
- (E) Correct. This option can be clearly concluded from the given argument as Mr. K states both the countries should stop



thinking of the past and focus on a future together.

**The correct answer is E.**

**9. Argument Construction:**

Curbing of freedom is an undignified thing to do.

- (A) The statement does not mention any subject(s) here. Hence it cannot be implicit in the above case.
- (B) This statement is directly mentioned and thereby not implied.
- (C) This statement contradicts the main statement and therefore is not implied.
- (D) This is a possibility but not an underlying assumption.
- (E) Correct. This is implicit in the main statement. Otherwise, the argument falls apart.

**The correct answer is E.**

**10. Argument Construction:**

The argument states that the Chairman adjourned the House till noon after he was unable to restore order in the House. For restoring the order, he had called for the first listed question of the day but the BJP members kept disrupting the proceedings. The question asks us to identify the correct inference from the given argument. Now, let us look at the options:

- (A) We cannot infer that just because a group of people do a particular activity, they like to do so.
- (B) The argument clearly states that the BJP members were not allowing the House to come to order. So, a blanket statement cannot be drawn that no one cares what the Chairman wants.
- (C) The argument talks of the first listed question but does not suggest that all questions are to be listed. So, the given option is incorrect.
- (D) Correct. The argument clearly states that the Chairman had adjourned the House. If he did not have the authority to do so, he would not have been able to do so. Hence, this is a correct inference.

- (E) This option cannot be inferred because the Chairman could have had other ways of restoring the order but he chose to adjourn the House. The argument in no way suggests that the Chairman had no option but to adjourn the House. Hence, this option is incorrect.

**The correct answer is D.**

### **11. Argument Construction:**

The tigers in National park are always looking for places to lie down.

- (A) Correct. A is the only option from which we can infer that white tigers like to lie around—because they are known to be lazy.
- (B) This statement conflicts with the main statement. If the national park makes tigers active, then the white tigers should also be active.
- (C) This statement again contradicts the main statement, if white tigers hunt their food aggressively, then they will not like to lie around.
- (D) This statement goes beyond the scope of the argument as no comment has been made about other tigers.
- (E) This statement goes beyond the scope of the argument and has no bearing on the main statement.

**The correct answer is A.**

### **12. Argument Construction:**

Despite a new, more effective laser printing technology being available now, not many companies are willing to adopt it yet.

- (A) The reason why most companies are unwilling to adopt the new technology cannot be guessed. Thereby it is non-implicit.
- (B) Correct. Since the quality of print is not impacting the buyer's mind, this statement is implicit.
- (C) This is additional information, hence non-implicit.
- (D) The reason why most companies are unwilling to adopt the new technology cannot be guessed. Thereby it is non-implicit.
- (E) This is additional information, hence non-implicit.

**The correct answer is B.**

**13. Argument Construction:**

The passage discusses the merits and demerits of buying on credit. An advantage that it presents is that buying on credit allows people to benefit from sales and bargain offers when they are short of cash.

- (A) This option merely presents an advantage of buying on credit.
- (B) This option makes an erroneous connection between credit and bargains.
- (C) Correct. This assumption is central to the argument being made by the author. Using credit options to avail oneself of bargains and sales will only prove beneficial if the cost of the credit is less than the savings that the buyer will make. If the cost of credit exceeds the saving on purchases then there is no point in using such a facility.
- (D) This option is far-fetched and beyond the scope of the argument.
- (E) This is merely a repetition of the main argument.

**The correct answer is C.**

**14. Argument Construction:**

The author has made a claim that the reason behind high purchasing power in rural areas as compared to urban areas is that some money used by city dwellers on housing and food can be used somewhere else by rural dwellers.

- (A) Since the money used by urban dwellers on housing and food is used somewhere else by the rural dwellers, this option cannot be true with reference to the rural dwellers.
- (B) The actual income may be the same between rural and urban dwellers, just that their purchasing power varies because of the reason mentioned in the question. So this cannot be inferred.
- (C) Correct. If both rural and city dwellers earn the same income, yet the rural dwellers have a greater purchasing power, it must be because the city dwellers are spending more on food and housing, making C the answer.

- (D) This option can also be eliminated using the same logic used in (B). Their incomes may be the same or may vary.
- (E) The amount of savings will not impact the argument any how as the argument talks of purchasing power, linking it to the expenses on housing and food.

**The correct answer is C.**

### **15. Argument Construction:**

The argument states that the viewers of a cinema hall with a Gold ticket should sit in their category seats. If they are found to be sitting in the superior category, that is, Platinum category, they will be penalized. We have to find a correct inference from the given argument. Let us look at the options.

- (A) The argument talks of only two categories. It in no way suggests that there are no other categories of tickets in the cinema hall.
- (B) If viewers with Gold ticket are not allowed to sit in the Platinum category seats, they definitely cannot be costing the same.
- (C) It is not clear from the argument where are the Gold category and Platinum category seats.
- (D) The argument mentions a warning given to viewers with Gold ticket. It is possible that there are other warning regarding different category seats, which have not been mentioned.
- (E) Correct. The argument clearly states that if Gold ticket viewers are found in Platinum category seats, they will be fined. So, we can safely infer that the tickets are checked. Because without any checking, the offenders will not be found and fined.

**The correct answer is E.**

### **16. Argument Construction:**

Ramesh is finding out about that college's admission procedure which is known for admitting those students who have scored above 95% in PCM. His results are also not known at the moment. Now, Let us look at the statements to find the correct inference.

- (A) Ramesh's score is not known yet and hence, this option is incorrect.
- (B) Correct. Ramesh is checking the admission procedure of a college that admits students who have scored above 95% in PCM. This clearly suggests that Ramesh is confident of scoring above 95% in PCM. If Ramesh was not confident of the same, he would not bother finding out about the college in which he would have no chances of getting through. So, option (B) is correct.
- (C) There is no mention or suggestion of parental pressure in the statement.
- (D) The statement talks of what the usual cut-off score is for the college and hence, we cannot infer anything about the announcement regarding the current cut-off score.
- (E) The statement talks of what the usual cut-off score is for the college and hence, we cannot infer anything about the announcement regarding the current cut-off score.

**The correct answer is B.**

### **17. Argument Construction:**

The passage is talking about the success of a particular loan scheme and uses the growing prosperity amongst the farmers as a barometer of its success.

- (A) The use of the extreme word "only" renders this option incorrect.
- (B) This option is also incorrect because of the use of "only".
- (C) The passage is talking about this particular loan scheme. From this, we cannot conclude that no such scheme existed earlier. Maybe, similar schemes were there but their terms were not favourable for farmers, or the farmers did not know about them.
- (D) This statement contradicts the information provided in the passage as the passage states that the loan scheme has become quite successful. This means that the farmers are using the scheme to buy tools.

- (E) Correct. Agricultural tools are important for the farmers to carry out a host of farm activities and prosperity for the farmers can only come when these activities are successfully carried out. Therefore, the loan scheme and the prosperity of the farmers are directly linked.

**The correct Answer is E.**

### **18. Argument Construction:**

The argument draws a correlation between unhealthy habits and the rampant growth of some diseases – like cancer and AIDS.

- (A) Correct. Since it is mentioned that ‘... have plagued mankind due to unhealthy habits’, it gives an indication that diseases like cancer and AIDS have some relation with a person’s lifestyle and food habits; hence, if option A is true then unhealthy habits, among other things, may be the cause of these diseases.
- (B) This is a vague statement. The argument is establishing a relation only between certain diseases and habits.
- (C) This is a contradiction of the main argument as it states that people are aware of the reasons that contribute to lifestyle based diseases.
- (D) This option presents another contributing factor (technological advancements) for the spread of diseases.
- (E) This option actually negates the relation established by the main argument.

**The correct answer is A.**

### **19. Argument Construction:**

The argument states that because Prateek is involved in sports and theatre during his exam period, he will not be able to score well. An assumption is a building block of the argument and if the assumption is negated, the argument breaks down. So, let us look at the options now.

- (A) If Prateek is a bad student and is already expected to score less, his extra-curricular activities may not have any effect on

his score. Hence, this is not an assumption of the argument.

- (B) The argument talks of Prateek's involvement in sports and theatre, and not his performance in them. Even if Prateek does not perform well in sports and theatre, the argument will still hold true.
- (C) The option talks of Prateek being a good student and not about his marks. Hence, it is not a valid assumption.
- (D) The argument clearly states that the reason behind Prateek not being expected to score well in his exams is his involvement in sports and theatre. If this assumption is negated to say that good marks can be scored even with playing sports and doing theatre activities during the exam time, the argument will be proved wrong. So, option (D) is a valid assumption.
- (E) This assumption is not valid because the argument talks of the effect of sports and theatre on Prateek's marks. The argument does not talk or suggest about the situation if only one activity is done. Also, the argument does not suggest that no other activity should be undertaken except studies.

**The correct answer is D.**

## **20. Argument Construction:**

Evil eventually results in stupidity. Organisations that misuse power to gain results end up losing smart employees and are left without their best resources.

- (A) Google is mentioned only as an example of the argument, so it has nothing to do with the assumption the argument is based on.
- (B) Correct. This is a basic assumption in the passage: that an organisation that uses its power in order to win unfairly can be characterised as 'evil'
- (C) Option C is clearly stated in the paragraph.
- (D) Option D is tangential to the issue.
- (E) This is an unrelated statement that is beyond the scope of the argument.

**The correct answer is B.**

**21. Argument Construction:**

The argument is that the Church has decided not to take back the Bishop. So, let us look at the options now.

- (A) This option does not affect the argument as it talks of the Bishop's will and not the Church's decision.
- (B) This option reasons why the Church should not take back the Bishop and hence, it supports the argument
- (C) The option states that the release from the prison is not reason enough to reinstate the Bishop. This weakly supports the argument.
- (D) This option strongly supports the argument and hence, is incorrect.
- (E) Correct. The option reasons that the Church should take back the Bishop, hence, weakening the argument.

**The correct answer is E.**

**22. Argument Construction:**

To weaken the argument, we need to give another reason (apart from habitat loss) why the Black Spider Monkey may have become endangered.

- (A) The statement is talking about black spider monkeys and not squirrel monkeys. Hence, this option is beyond the scope of the argument.
- (B) Correct. This option presents another reason for the dwindling number of Black spider monkeys. Hence, it weakens the relationship established between human activities and its impact on the habitat of the monkeys.
- (C) Once again, this is beyond the scope of the argument. The statement is talking about Black spider monkeys only.
- (D) This statement also goes beyond the scope of the argument.
- (E) This statement actually strengthens the main argument by stating that the population of monkeys has revived in areas that



are under WWF control, that is, areas that have controlled human intervention.

**The correct answer is B.**

**23. Argument Construction:**

The argument establishes a relation between reduced ticket prices and increased aircraft occupancy. It states that one way to reduce pricing is to stop offering in-flight food.

- (A) Not related to the main argument.
- (B) Not related to the main argument
- (C) Correct. Due to the short duration of an airplane flight, it is not inconvenient for passengers to avoid food. Hence, the airlines can easily avoid this expenditure without any impact on customer satisfaction. This cost-saving mechanism will reflect in lowered flight prices, a move that will be appreciated among all travellers and one that will entice more and more people to fly.
- (D) This statement shall weaken the argument as it discusses other factors that influence air travel.
- (E) This option shall considerably weaken the argument as it states that in-flight food is very important for travellers.

**The correct answer is C.**

**24. Argument Construction:**

The statement makes two claims: one, that enhanced exposure to mass media is responsible for an increased awareness amongst people regarding their rights and second, that this has also led people to fight for their rights.

- (A) Option A strengthens this claim by providing data in its support.
- (B) Option B weakens the argument by raising questions on the content showed by the media.
- (C) Option C also presents information that strengthens the argument.
- (D) Correct. Both options A and C strengthen the argument.

(E) This option weakens the argument.

**The correct answer is D.**

**25. Argument Construction:**

Here, the government has decided to deregulate the prices of diesel and petrol. This means that the market forces will control the prices and not the government.

- (A) This statement weakens the argument. If an increase in the prices of fuel will have a negative impact on its consumption, then the move will prove counterproductive.
- (B) Correct. The statement says that this decision has been taken to reduce the losses being faced by fuel companies. Now, this will happen only if the demand for this product is not affected by fluctuations in its price. Hence, even if the prices go up, the government is reasonably sure that the demand will remain unaffected, helping the companies increase their profits. Hence, option B strengthens the argument.
- (C) The primary reason being given for the deregulation is the reduction of losses. A dip in automobile sales might, at best, present a tangential reason.
- (D) Not relevant to the argument.
- (E) This is an unrelated option and can be negated.

**The correct answer is B.**

**26. Argument Construction:**

The author claims that the availability of talented candidates for private banks will reduce as annual recruitment is on the up in the public sector banks. That means the author assumes that the talent pool for banking jobs is restricted.

- (A) This option rather weakens the argument by saying that private sector pays more. Had this been true, candidates might have preferred private over public.
- (B) Correct. If there is a limited resource pool for banking jobs, then the increase in the recruitments being done by public banks will definitely create a paucity of candidates for private sector jobs.

- (C) This option again weakens the argument. If the jobs in public sector are not considered challenging enough, then there might be a disinclination towards them.
- (D) Though this option presents one reason why jobs in public sector banks may be more lucrative for candidates, it addresses only one aspect without focusing on the key issue.
- (E) This is a vague and unrelated argument.

**The correct answer is B.**

## **27. Argument Construction:**

The author makes an argument in favour of making Hindi the national language of India. The reason he gives for this suggestion is the fact that the government wastes a lot of money in translating official documents into local languages; money that can be utilised elsewhere.

- (A) This statement strengthens the claim of the author by providing data that supports the main argument.
- (B) This option does weaken the argument tangentially – if Hindi is the most spoken language in the country, it does not preclude the fact that there is still a percentage of population that does not speak Hindi. Hence, the government is duty bound to cater to the needs of this segment no matter how small it is.
- (C) This option is beyond the scope of the argument. Whether the people pay taxes or not is not the central point being discussed. The main argument is talking about the utilisation of people's money.
- (D) This option actually strengthens the author's claim. If people travelling across the country manage to learn Hindi within a year, it implies that the language can easily be learned and is spoken in large parts of the country.
- (E) Correct. This option directly contradicts the information given in the main statement – the passage states that Hindi should be made the official language, while the option states that Hindi is already the official language.

**The correct answer is E.**

## 28. Argument Construction:

The argument states that scientists in India and other commonwealth countries do not pay attention to the studies done in non-english speaking countries. However, scientific studies are being conducted in other non-english speaking countries as well.

- (A) This option goes beyond the scope of the argument. The passage is specifically talking about ignorance among the scientists of the Commonwealth. We cannot draw generic conclusions based on this.
- (B) Correct. If the scientific breakthroughs being made in the non-english speaking countries are not recognised by scientists in commonwealth countries, then it can be inferred that there will be an overlap between the scientific findings reported in these countries and those published in non-english speaking countries.
- (C) This option weakens the claim made in the passage.
- (D) This is a vague and moralistic argument.
- (E) This statement shall weaken the claim made in the passage.

**The correct answer is B.**

## 29. Argument Construction:

This is a sampling assumption. The argument in this passage is that male readership of novels is significantly lower than the female readership (based on surveys in Britain, the United States and Canada), and that if women were to stop reading them, novels would die out.

- (A) This is only a shortcoming of Ian McEwan's impromptu 'survey' (a fact mentioned in the paragraph itself) and not of the whole argument.
- (B) This is a tricky option. Whether or not men read more books than women per capita, the bottom line is that they still form only 20 percent of the market for fiction (in the stated countries, at least), so option B is not a suitable answer.
- (C) The argument is specifically about novels (i.e. fiction), so whether or not men read plenty of non-fiction is irrelevant, and

option C is incorrect.

- (D) Correct. The argument rests on the assumption that the patterns of reading novels in the three countries cited is representative of a worldwide pattern, but if this is not the case—as stated in option D—then the argument is weakened.
- (E) This is a vague argument that merely presents an opinion.

**The correct answer is D.**

### 30. Argument Construction:

The argument in the paragraph is that going to the gym is far too similar to joining a cult in the kind of fanaticism it inspires in its adherents.

- (A) Just stating that *some* people are not fanatical about going to the gym does not change the fact that others *are*. So, option A is incorrect.
- (B) The paragraph is not about the workings of gyms and cults per se, but the feelings they inspire in their members, so option B is slightly tangential to the point.
- (C) Option C indicates that people go to the gym for reasons that include socialising or feeling good about themselves. These are not touted to be fanatical reasons. However, this option does not definitely rule out that the reasons are unbiased and logical. Hence, option C is incorrect.
- (D) Correct. Option D casts doubt on the basic argument, by stating that however fanatical people may be about going to the gym, their fanaticism has a scientific basis, as opposed to the irrational reasons for joining a cult.
- (E) This option actually strengthens the contention made in the passage.

**The correct answer is D.**

### 31. Argument Construction:

The paragraph is making a case for the intangible (i.e., non-financial) benefits of hosting high-profile sporting events for the host city or region.

- (A) Correct. Option A presents another intangible benefit of hosting such events – communal harmony and reduced friction amongst the different elements of society. This strengthens the main argument being made by the author.
- (B) Option B weakens the argument as it shows that the benefits are too short-term to be of much worth.
- (C) Option C also weakens the argument as it shows that the intangible benefits may be accompanied by intangible disadvantages, which may outweigh the benefits.
- (D) This option weakens the argument made in the passage.
- (E) This option also weakens the argument made in the passage.

**The correct answer is A.**

### **32. Argument Construction:**

The basic argument in the paragraph is that the degree of emotional closeness between people is directly proportional to the degree of relatedness between them, as measured by the percentage of genes they share.

- (A) Correct. This option, which shows that twins who share all their genes are emotionally closer than twins who share only half, strengthens this argument.
- (B) Option B is irrelevant as it talks about how alike certain siblings are, which is not an issue in this argument at all.
- (C) Option C is also beyond the scope of the argument due to the reason provided above.
- (D) Option D shows a contrary finding, so it weakens the argument.
- (E) This option also weakens the argument

**The correct answer is A.**

### **33. Argument Construction:**

The argument essentially draws a parallel between equal opportunity, equal income and economic development. It states that western countries have strived for equal opportunity and have been able to achieve it to a large extent – by having more equitable

distribution of wealth. Economists in India are in favour of the equal income model as they believe that it will accelerate economic development.

- (A) This option is logically contradictory – if equal opportunity does result in equal income, then how is it possible that people don't get paid for their efforts.
- (B) The passage is not talking about the utilisation of excess income.
- (C) This option reiterates the main idea and strengthens the argument.
- (D) Correct. Economists in India are in favour of the equal income model as they believe that it will accelerate economic development. However, the ground reality presents a different picture. In developing countries, the gross income of most of the people is so low that if it were distributed equally, no one would save enough to provide resources for investment. This will negate the very rationale behind introducing the equal income model.
- (E) This option is beyond the scope of the argument.

**The correct answer is D.**

### **34. Argument Construction:**

The argument concludes that the poor performance of the movie can be attributed to the talk show host making fun of it.

- (A) Option A strongly supports the argument.
- (B) Option B is invalid.
- (C) Option C does not specify whether the host is responsible for the poor performance of the movie.
- (D) Correct. Option D reverses this logic by stating that it is because the movie was performing badly that the talk show host was making fun of it. Thus, the talk show host could not be responsible for the failure of the movie.
- (E) Option E can be taken into consideration as it says the movie was criticised by media also but D is the most appropriate option.

**The correct answer is D.**

**35. Argument Construction:**

A survey was conducted to know the satisfaction levels among the citizen of a city. Since majority of the respondents said they were satisfied, a conclusion was drawn that the citizens as a whole were satisfies as well.

To weaken the argument, we need to find a flaw in the whole survey.

- (A) Correct. If the sample was taken from only a particular economic stratum, the sample becomes biased. Thus, this option highlights a flaw in the argument.
- (B) Some of the residents may have said they were dissatisfied. Still the argument may be valid that as a whole the citizens are satisfied. It doesn't weaken the argument.
- (C) Comparing the results with the neighbouring cities doesn't impact the argument at all as the argument is about only one city.
- (D) This statement rather strengthens the argument. By stating that the sample was representative of the entire population, we strengthen the argument.
- (E) Mentioning the governing bodies makes the argument out of scope as there is no reference made to them in the question.

**The correct answer is A.**

**36. Argument Construction:**

The author states two things that help a person complete a marathon, either practicing for 4 hours or consuming high energy foods. Out of the two, the author prefers practising over diet. On the basis of his preference he draws a conclusion that if one practises well, one can ensure one is doing the most that can be done to perform well in a marathon.

To weaken this argument we either say that the other alternative is better or this way of preparing oneself is not sufficient or a combination of both of them is even better.



- (A) This option only mentions the opinions of some marathon runners. Thus, it isn't a very plausible option.
- (B) Correct. This option says combining both the methods is even better. So the conclusion is negated.
- (C) This argument is out of scope as mentioning the purpose of participation doesn't relate to the conclusion drawn in the question.
- (D) This option mentions pace but doesn't refer to either of the two alternatives mentioned in the argument. So this is an incorrect option.
- (E) This option can also be eliminated with the same logic that to negate the argument we need to relate the options with at least one of the alternatives. This argument doesn't do that.

**The correct answer is B.**

### **37. Argument Construction:**

To be able to clear a particular test, a person has to fulfil two criteria. If he isn't able to fulfil any one of them, he wouldn't be able to clear the test. This is followed by the example of Kavita who in any scenario cannot fulfil both the criteria.

- (A) This argument is merely an opinion without any logical backing. We can easily eliminate opinions as incorrect options.
- (B) As the question says, to be able to clear the test one has to fulfil both 15 coaching sessions and 20 practice tests, hence, this option cannot be inferred as it talks about completing only one requirement.
- (C) We cannot be sure if Kavita would retake the test or not. So this is an incorrect option.
- (D) Correct. If under the given circumstances Kavita isn't able to fulfil both the requirements together, it is most likely that she will not be able to clear the exam as to clear it both requirements have to be fulfilled.
- (E) This option can also be eliminated using the same logic used in (B). Only one criterion is fulfilled here.

**The correct answer is D.**

**38. Argument Construction:**

The number of tigers throughout the world is declining. To combat this problem, experts argue that the best chances of the survival of tigers are in India.

- (A) Correct. As the question says, conservation is a major concern across the world. Thus, this statement has to be true.
- (B) The question says the best chances of survival of tigers are in India. This doesn't mean they cannot survive anywhere else. So this is an incorrect option.
- (C) We cannot be sure if the Indian government is taking ample of steps or not. May be the government is doing something, still the number is declining because of other reasons.
- (D) 'The chances of the survival of tigers are the best in India' doesn't mean that the existing number of tigers is the highest in India.
- (E) The rate at which the number of tigers is declining cannot be commented upon as it is out of the scope of the argument.

**The correct answer is A.**

**39. Argument Construction:**

A city's governing council has spent a lot of money on advertisements on the harmful effects of smoking and these advertisements are targeted towards college students. The authority thinks the number of smokers in college campuses has gone down because of these advertisements.

- (A) Since this statement mentions alcohol it can easily be eliminated as being out of scope.
- (B) The question targets only college goers. Comparing it with non college goers makes this a wrong option.
- (C) This statement talks of the whole city and not colleges. Since the point of the argument is about colleges, this is a wrong option.

- (D) Correct. The argument assumes that there can be no other reason for the decrease in the number of smokers except the advertisements by the authorities. Option D weakens this by providing an alternative explanation for the drop in the number of smokers within the city—higher cigarettes prices.
- (E) This statement has nothing to do with the argument made by the authority regarding their advertisements. So it is an incorrect option.

**The correct answer is D.**

#### **40. Argument Construction:**

Since the number of badminton racquets being sold in Chennai has tripled in one year, the author draws a conclusion that more and more people have started playing badminton in Chennai. Anything that relates the conclusion to the premise will strengthen the argument.

- (A) If tourists buy these racquets, the number of people playing badminton in Chennai will not increase. This is an incorrect option.
- (B) We cannot comment about the sale of racquets in other cities. Also, this won't impact the conclusion at all.
- (C) Correct. The argument is based on the assumption that most of the badminton racquets sold are actually being used by residents of Chennai.
- (D) There is no reference to cricket bats and golf clubs in the argument. So this option is out of the scope of the argument.
- (E) E actually weakens the argument by suggesting that the increase in sales of badminton racquets may not lead to an increase in the number of residents of Chennai taking up badminton.

**The correct answer is C.**

#### **41. Argument Construction:**

On the basis of an instance where more than a dozen children were attacked by dogs, the author draws a conclusion that dogs shouldn't

be kept as pets in neighbourhoods with a large population of children.

- (A) The argument relates dogs to children. Bringing adults and other dogs doesn't impact the argument anyhow. So this is a wrong option.
- (B) Rottweiler is merely an example used to represent dogs as a whole. Giving a specific argument about Rottweiler doesn't impact the argument.
- (C) This statement rather weakens the argument by giving the example of Pugs that are very friendly and can be kept as pets.
- (D) This statement also sort of weakens the argument by stating children should be taught to be safe and keep away from dogs. What is needed in the argument is vice versa.
- (E) Correct. The evidence in the argument mentions Rottweilers but the conclusion is for all dogs in general. Thus, the assumption has to be that Rottweilers are representatives of dogs of all breeds, making E the correct answer.

**The correct answer is E.**

#### **42. Argument Construction:**

It is a simple argument that coconut oil is beneficial for hair. So, let us look at the options now.

- (A) Correct. This option talks of how coconut oil benefits hair and hence, strengthens the argument.
- (B) Hair loss suggests that coconut oil is not good for hair and hence, this option weakens the argument.
- (C) This options talks of coconut oil being inferior to the other oils in a certain context but does not undermine the benefits of coconut oil. Hence, this argument neither weakens nor strengthens the argument.
- (D) This option undermines the argument as it states that coconut oil is not good for everyone.
- (E) This option talks of a disadvantage of coconut oil in certain cases and hence, slightly weakens the argument.

**The correct answer is A.**

**43. Argument Construction:**

India is going to increase its exports of consumer goods to China.

- (A) Correct. Market is what attracts an investor. Therefore, this statement clearly bolsters India's decision.
- (B) This is more a hurdle than an encouragement for the said decision. Therefore, it doesn't strengthen it.
- (C) This statement makes the said decision pointless. Therefore, it doesn't strengthen it.
- (D) This is an additional and unrelated statistical information. It is not related to the main argument.
- (E) This is a discouraging comment on the given situation. Therefore, it actually weakens the decision.

**The correct answer is A.**

**44. Argument Construction:**

The University has increased the pace of work for getting the NAAC accreditation and it has decided to get the accreditation in the next six months. All the requirements for getting A+ grading must be fulfilled.

- (A) This is in line with the decision of the University.
- (B) Correct. This weakens the decision as the option states that the required infrastructure will take 2 years to build. So, an accreditation cannot be obtained in 6 months.
- (C) This is in line with the decision of the University.
- (D) This is in line with the decision of the University.
- (E) This is in line with the decision of the University.

**The correct answer is B.**

**45. Argument Construction:**

The passage states that in order to deal with rebellions, governments should be mindful, tolerant, and open to peaceful negotiation.

- (A) The given argument supports the role of a tolerant, understanding and open government. This has been reiterated in option A which, clearly, strengthens the given argument.
- (B) Option B pertains to the general characteristics of man's nature; a government's approach is not relevant to it.
- (C) Option C refers to the general attitude of authorities towards those who challenge them; but it does not dwell on solving the rebellion. Both options B and C have no impact on the given argument. They neither support nor contradict it.
- (D) Correct. Option D directly contradicts the view presented in the argument. It presents an alternate way of dealing with rebellions, through an iron hand approach, that has been adopted successfully by dictators.
- (E) Option E also strengthens the given argument.

**The correct answer is D.**

### **General Solution for Questions 46–47:**

#### **Argument Construction:**

The author says that the claim people make that a two party system can also be democratic is a farce. To prove it wrong he compares politics to sports and says it is possible only in sports and politics is not a sport.

To strengthen the argument we must favour the author's stance.

To weaken it we must oppose.

- (A) This argument weakens the statement. The author's stance is that two party system isn't conducive to democracy. This option presents facts that directly contradict the author's claim.
- (B) This is merely an opinion. All the opinions are the first options to be removed as wrong as they aren't substantiated.
- (C) The author disagrees with a two party system stating there cannot be democracy in it. This option also points out a flaw in the two party system thus supporting the author.

- (D) Since the argument is about a two party system the correct option also has to revolve around that. Sports is merely an analogy used. So this is a wrong option.
- (E) Although this option supports the stance of the author, it gives only an opinion and doesn't substantiate it with reasoning. We cannot choose it over (C) which gives a valid reason.

**46. The correct answer is C.**

**47. The correct answer is A.**

**48. Argument Construction:**

The argument states that the fact that children find it difficult to digest milk is a reason given by them for not wanting to drink it. We have to find an option that supports or reinforces the claim made by the children.

- (A) This option is wrong as it is an opinion that these are excuses.
- (B) Since the question stem talks about children, an option targeting adults cannot strengthen or weaken the argument in any manner.
- (C) This option also doesn't relate to the argument at all as it presents an opinion that says milk is good but provides no reasoning for the main argument.
- (D) Lack of calcium might have a detrimental impact on the well-being of children but this statement also does not connect with the main contention being made by the author.
- (E) Correct. E addresses the issue of the ability of people in general (including children) to digest milk. If research has proven that lactose intolerance is present in some people, then it is possible that the claim made by the children is correct.

**The correct answer is E.**

**49. Argument Construction:**

The passage highlights the importance of geographical factors in the cultural and political unification of a country. It gives the example of

China and the role played by the rivers and plains in its cultural evolution.

- (A) This option is beyond the scope of the passage as the issue isn't about industrial versus agrarian societies at all.
- (B) The main comparison in this paragraph is between China and western Europe, so option B is irrelevant.
- (C) Correct. The main argument in this paragraph is that the geography of a land significantly affects whether or not it can become a politically and culturally united country. However, option C presents other factors that play a critical role in this process. Thus, it weakens the main argument in the passage.
- (D) Option D merely rephrases the conclusion of the paragraph, that is, China is politically and culturally united, whereas western Europe is not.
- (E) This option goes beyond the scope of the passage and presents extraneous information.

**The correct answer is C.**



## 2 Deductions

1. **Inference I:** The argument says that disasters such as thunderstorms and cyclones occur during a couple of weeks in hot season. This doesn't mean that the hot season lasts for two weeks. It may last longer. So this is an incorrect inference.

**Inference II:** Since the inference says 'most' it can be inferred that the disasters occur only during two weeks of the hot season.

**The correct answer is B**

2. **Inference I:** The author makes a claim that the correlation between incomes and residence in slums is not perfect. To back it up he gives the reason that the people living there may be above the poverty standards but they still choose to live in slums. So we can say that despite being able to afford houses elsewhere, some people still continue to live in slums.

**Inference II:** This is a very generic statement. We cannot say that poverty lines in general are flawed. May be they are correct and the flaw is somewhere else. So it is an incorrect inference.

**The correct answer is A.**

3. **Inference I:** The argument is about small South American nations. Any inference drawn about South America in general will be wrong. This inference does that. So it is only a probable inference and not correct.

**Inference II:** This has to be a correct inference as the argument clearly talks about the state sponsored food security programmes. This certainly means that the small nations invest a part of their revenue on food security. Only then does the claim become possible.

**The correct answer is B.**

4. **Inference I:** When the author claims that the drop in gold prices is against the usual trend he certainly means that the general belief

was that the gold prices must have increased during this festive season like they normally do. So it is a correct inference.

**Inference II:** This is the opposite of the claim made by the author. On the contrary, the author says that the increased demand for gold ornaments usually results in an increased demand for gold bars. This clearly shows that both are interlinked. So II cannot be inferred.

**The correct answer is A.**

5. **Inference I:** This may look like a correct inference but is incorrect because the argument says that programmes for women are often based on topics like recipes and household management but we cannot be sure that women are interested only in such matters. It is a very specific and narrow statement.

**Inference II:** The claim in the question is confined to recipes and household management. It does not talk about sports. So we cannot infer II.

**The correct answer is D.**

6. **Inference I:** Since most of the runs were made by all-rounders, we cannot say that more than half of the team consists of all-rounders. May be only 2 players were all-rounders and they made these runs.

**Inference II:** This inference is out of the scope of the argument as we cannot say if they were spinners or not.

**The correct answer is D.**

7. **Conclusion I:** Though it is mentioned that the Aluminium manufactured in India is of a much better quality than the aluminium manufactured in other countries across the world, there is no mention of the price or profitability. There might be other factors that influence the decision regarding the sale of the material. Thus, Conclusion I is not valid.

**Conclusion II:** We have no information regarding the reasons behind the better quality of the aluminium. It might have something to do with the manufacturing process or could be due to other factors

such as the superior ore quality and so on. Thus, Conclusion II is also not valid.

**The correct answer is D.**

8. **Assumption I:** Extreme words like only and all usually make assumptions wrong. The claim the author makes is about Ravi Sharma's book but we cannot make any assumption about all books. So it is a wrong assumption.

**Assumption II:** The question states that this book will be his first best seller, this certainly means that he did not have a best seller till date.

**The correct answer is B.**

9. **Assumption I:** Though, on a quick examination of the argument, there does appear to be a link between the number of hours clocked and the award, no such relation has been established in the argument. The company may grant awards based on several other parameters as well (efficiency, productivity, results and so on). Hence, assumption I is not implicit.

**Assumption II:** This assumption is vague and makes moralistic judgements.

**The correct answer is D.**

10. **Assumption I:** A comparison is being drawn between the time taken by two sisters to clean their respective rooms. In order for the comparison to be valid, the parameters have to be the same. In this case, two elements are important – the size of the rooms and the extent of dirtiness. Thus, assumption I becomes implicit in the argument.

**Assumption II:** This assumption is not only beyond the scope of the argument, but also contradicts the information provided in the statement.

**The correct answer is A.**

11. **Assumption I:** In this statement, it is apparent that Meena is a qualified teacher with extensive experience. However, we cannot put a value to the qualifier “extremely”. Such words always negate the assumption.

**Assumption II:** This assumption is implicit in the argument.

**The correct answer is B.**

12. **Assumption I:** The argument says that advisories have been issued. This doesn't mean that the forecast made by the weather department is accurate. This is a precautionary step that is being suggested in order to preclude the possibility of any damage. This assumption is too extreme.

**Assumption II:** This also is a wrong assumption as farmers might be taking decisions without the help of the weather department all the time. The forecast made by the department might be just one factor that influences their decision making. The weather department is also merely fulfilling its responsibility and not dictating the decisions of the farmer.

**The correct answer is D.**

13. The premium has shot up for either one of the reasons. Hence, either assumption is enough to arrive at the conclusion.

**The correct answer is C.**

14. **Assumption I:** If a particular sop will provide an edge to this party, then it can easily be ascertained that this sop is not provided by any other party.

**Assumption II:** Also, schemes are introduced to provide benefits to the masses, thereby increasing the popularity of the one who introduces the scheme. Hence, both the assumptions are implicit.

**The correct answer is E.**

15. **Assumption I:** The statement that “this model will be the highest selling model in the sales history of the company” is based on the data that the company has sold a record 1.3 million sets of the model

in its first week of release. Hence, it is clear that no other phone made by the company has achieved this feat.

**Assumption II:** Just because this phone is selling well, we cannot make generic assumptions about customer preferences. It is possible that different customers pay attention to different aspects of a phone. Thus, only the first assumption is implicit.

**The correct answer is A.**

16. The situation defines the plight of rural areas where the food grains being supplied and consumed are impure. This is causing food poisoning.

A correct assumption will be the one on which the whole argument rests upon.

**Assumption I:** Correct. It can certainly be assumed that impure grains are readily available in the rural areas. Thus, we can also say that there are shops that sell impure grains.

**Assumption II:** Since there is no data available other than that for rural areas, we cannot say that the percentage of people consuming grains is higher in rural areas.

**The correct answer is A.**

17. **Assumption I:** is definitely implicit in the statement since it is the most plausible reason for keeping children mentally stimulated.

**Assumption II:** is not implied since we do not know anything about the prediction of intelligence. Also it has a lot of data that makes it wrong.

**The correct answer is A.**

18. **Assumption I:** is invalid because we cannot be sure of the effects this step might have. The statement is farfetched.

**Assumption II:** The laptop company plans to raise the price of its laptops with immediate effect. The company must have assumed that the demand of its laptops wouldn't go down considerably

because if that were the case, it would not have taken the decision to raise the price. So assumption II is valid.

**The correct answer is B.**

- 19. Assumption I:** is not implicit since we have no idea how the bank will respond.

**Assumption II:** is not implicit because we do not know whether Suresh has approached other people for this loan. He may have finalised taking money from the bank for various reasons; unavailability may be one of the reasons among others.

**The correct answer is D.**

- 20.** Kalikapur has restaurants and some of them are amongst the best restaurants of that country. The question is asking us to identify a correct assumption that is implicit from the given argument. Let us look at the given assumptions now.

**Assumption I:** The argument talks of the best restaurants in the country but not of world-class restaurants. Hence, this assumption is not implicit.

**Assumption II:** There could be other reasons for the restaurant being among the best in the country. Also, it is not necessary that the best chefs will work only in the best restaurants. Hence, this assumption is not implicit.

So, neither assumption is implicit.

**The correct answer is C.**

- 21.** The argument states that once you enter the Delhi Book Store, then only you will realize how big a bookstore can actually be. Let us look at the assumptions now to see which of the given assumptions are implicit in the statement.

**Assumption I:** The argument talks of the size of the Delhi Book Store and not of the number of books in the store. Hence, this assumption is not implicit.

**Assumption II:** The argument talks of knowing and not imagining. One is free to imagine whatever they wish to. Hence, this assumption is not implicit.

So, neither assumption is implicit.

**The correct answer is E.**

- 22. Course of Action I:** This is an obvious course of action.

**Course of Action II:** When the Government takes such an action it is necessary that people are made aware of the consequences they would face if they do not obey the directive. Hence II follows.

**The correct answer is E.**

- 23. Course of Action I:** The intensity of the infection has been the most severe in four years. The epidemic itself is not a four-yearly feature. Hence, precautionary measures should be taken every year and not every four years. Therefore, action I does not follow.

**Course of Action II:** Action II is not a preventive action against conjunctivitis, nor is it feasible. Hence action II also does not follow.

**The correct answer is D.**

- 24. Course of Action I:** The first course of action is logical and should be followed.

**Course of Action II:** The bank manager has just had a premonition. He should first confirm whether money is actually missing and only then he/she should inform the police for taking action.

**The correct answer is A.**

- 25. Course of Action I:** The decision to revise the fee structure for artists should be taken by the channel as a remedy towards the challenging problem that has arisen before it.

**Course of Action II:** However, taking stringent action against people responsible for the programmes that saw a decline in popularity is a negative and reactive step that will cause more damage. In such scenarios, proactive and futuristic decision making is required.

So only course I follows.

**The correct answer is A.**

- 26. Course of Action I:** Since the enteric fever is a water borne disease, its chief source is drinking water. The first course of action may help contain the infection, as it often spreads through open sources also.

**Course of Action II:** The second course of action is also required as this particular area has seen the most severe impact of the epidemic. Hence both the actions follow.

**The correct answer is E.**

- 27. Course of Action I:** The first course of action is a suitable follow up by the Government as it would deter the defaulting companies.

**Course of Action II:** But the second course of action does not follow as there is no clear and direct link between the lack of welfare measures and decline in the services provided.

**The correct answer is A.**

- 28. Course of Action I:** The disease occurs at the end of monsoons every year. So, precautionary measures every four years shall not help.

**Course of Action II:** The second course of action shall be a preventive measure. So, only course II follows.

**The correct answer is B.**

- 29.** The Chinese present tough competition to the Korean garment export industry that is venturing into Latin American markets. The correct courses of action here will be the ones dealing with the tough competition.

**Course of Action I:** This cannot be a desirable course of action as it is no solution to the problem, simply quitting from the market may save it from the competition but will not be a solution to the problem.

**Course of Action II:** Correct. This can be a desirable course of action as improving quality may make the products more desirable,



thus giving the Koreans edge over the competition.

**The correct answer is B.**

- 30.** The statement says that the imported apples are of a better quality. Thus, to compete against them, Indian apple growers should take steps to improve the quality of their apples.

**Course of Action I:** This is not correct because a forceful action is always undesirable.

**Course of Action II:** This is invalid because although this might help the indigenous growers but the core problem of quality will not be catered to.

**The correct answer is D.**

- 31. Course of Action I:** This doesn't follow because providing a bailout package would be similar to throwing good money after bad. Also if there are no signs of profit anytime soon, putting more money in it will not be feasible.

**Course of Action II:** This will follow because steps must be taken to try and make the airline profitable by cutting excess expenditure and improving efficiencies. This will deal with the core problem of losses thus solving the problem.

**The correct answer is B.**

- 32. Course of Action I:** The statement does attribute importance to bringing in Foreign Direct Investment in the state but does not assign any sense of urgency to this and hence, this course of action does not follow.

**Course of Action II:** It is clear from the statement that the project is very big considering the number of Special Economic Zones (SEZs). It is quite possible that there may be displacement of farmers involved while acquiring the huge amount of land required for this project. It is very necessary to understand the cost associated with the establishment of SEZs and hence, the state should study the proposal before undertaking it. So this course of action does follow.

**Course of Action III:** Whether the state should stick to the proliferation of an agrarian economy depends upon the cost and benefit analysis of the proposal. Hence, this course of action does not follow.

So, only II follows.

**The correct answer is B.**

33. **Course of Action I:** Making fire insurance mandatory will help in better addressing the aftermath of such mishaps. Thereby it is a valid course of action.

**Course of Action II:** A checking of the wiring will surely help detect and prevent fires that could be triggered by electrical sources. Thereby it is a valid course of action.

**Course of Action III:** The argument clearly mentions the slow emergency response time as a critical factor. Hence, working on this is of prime importance in improving our defenses in the current situation. Thereby it is a valid course of action.

**The correct answer is D.**

34. **Course of Action I:** We don't know whether offering discounts will attract more customers to the brand. There is a possibility that the competitors are offering better quality or innovative products. In such a scenario, merely giving discounts will not prove helpful. An action whose outcome is unknown and cannot be predicted is not a desirable course of action.

**Course of Action II:** This is the correct course of action. The company should first study its competition- the products they are offering, the methodologies being adopted by them, the marketing strategies, costing and so on. Only this will help them identify the gaps in their systems and introduce the necessary modifications to keep up with the evolving market. Thus, this option is correct.

**The correct answer is B.**

35. **Statement I:** The statement says that most of the items (but not all items) available at malls are expensive. This means that some of the

items available at malls may not be expensive. Thus, statement I is a valid inference.

**Statement II:** This is extreme and cannot be inferred.

**Statement III:** Statement III is slightly tricky. Though the facts state that products available at malls are of a better quality and generally more expensive, the fact that the number of people going to malls has increased tremendously over the past two years does not mean that these people are buying the products; they could be going to malls for other reasons.

So, only I can be concluded.

**The correct answer is A.**

36. **Statement I:** The statement says that the book is more expensive but in comparison to what? So, this statement cannot be concluded.

**Statement II:** There is no reference to the book 'Sociology of Work' in the given facts.

**Statement III:** There is no reference to the book 'Sociology of Work' in the given facts.

So, none of the statements can be concluded.

**The correct answer is E.**

37. The facts state that A is coded as p, B is coded as q, C coded as r, D coded as s, E coded as t, F coded as u. Continuing the sequence, we find G coded as v, H coded as w and I coded as x.

So,

**Statement I:** GHI will be coded as vwx. So, it is correct.

**Statement II:** ACD will be coded as prs. So, it is incorrect.

**Statement III:** FAD will be coded as ups. So, it is incorrect.

**Statement IV:** FACE will be coded as uprt. So, it is incorrect.

Hence, only statement I can be concluded to be a fact.

**The correct answer is A.**

38. **Argument I:** Though the first argument appears morally strong, please note that in questions based on reasoning, logic, not emotion or values, should dictate the final decision. Such statements are 'judgements' and not 'arguments'.

**Argument II:** However, one also has to keep in mind that the decision one makes is ethically sound. Thus, even though the decision might render thousands unemployed, it will be desirable in the larger societal context. Thus, neither arguments are strong.

**The correct answer is D.**

39. **Argument I:** The state machinery can make provisions for the training/deputation of the required staff or other necessary infrastructure that is needed for any initiative. Thus, claiming paucity of resources as a reason for not doing something makes for a weak argument.

**Argument II:** Though it is important to have a sense of pride in one's heritage, forcing people to learn the language is no guarantee of the same. Also, a lot of initiatives can be undertaken to promote Tamil that might prove more effective. Therefore, both the arguments are weak.

**The correct answer is D.**

40. **Argument I:** says that demolition will dissuade such builders from carrying out such activities. This is certainly a desirable action. Thus it makes a very forceful argument because punishing in this case is a necessity.

**Argument II:** is weak as though the people living there may not have any place to go, one cannot just allow the illegal construction to continue for the benefit of few people only . It can never be a justification for allowing illegal construction.

**The correct answer is A.**

41. **Argument I:** says that with the easy availability of consumer loans, the accessibility and purchasing power of the Indian consumer has

increased. This argument is always desirable and good for the consumer. Thus, it is a strong argument.

**Argument II:** also states a very valid point that if the purchasing power of the consumer has increased, the consumer will buy things which he may otherwise won't need, leading to unnecessary spending. Thus, this argument also is strong.

Both the arguments make logically valid points and are strong.

**The correct answer is E.**

42. **Argument I:** This is a weak argument. If an action is opposed on the ground that it will increase the expenditure of the government, even if the general public is benefitted from the action, it is considered a weak argument.

**Argument II:** This is a strong argument. Increased foreign interest in the country's education system is a desirable action that will result in enhancement of infrastructure, better facilities, research opportunities and so on. Thus, argument II is strong.

**The correct answer is B.**

43. **Argument I:** This is a valid argument. Any argument that supports added burden on the general population, either in terms of money or hardship, is usually considered a weak argument. Also, closing a loss-making enterprise is an extreme solution that should be preceded by measures to revive the business. Thus, argument I is a strong argument.

**Argument II:** This is also a strong argument as it provides a logical justification for taking the decision and presents an alternative course of action that will prove beneficial for the general population in the long run.

**The correct answer is E.**

### 3 Analytical Puzzles

1. The final arrangement will look like this:

C F G D H E ↑

So, F is the fourth to the left of E.

**The correct answer is B.**

2. C and E are standing at the extreme ends of the line.

**The correct answer is A.**

3. D is standing second to the right of F

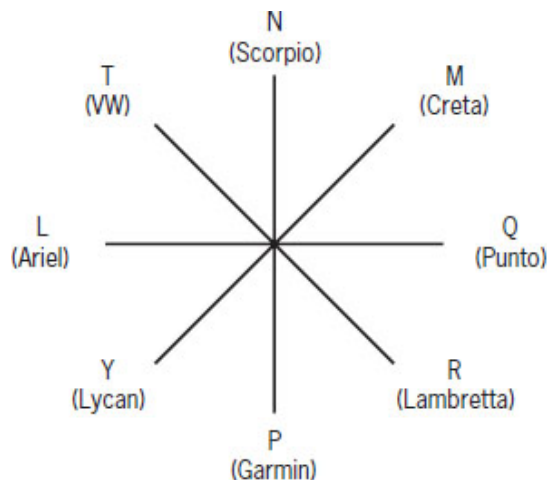
**The correct answer is B.**

4. All the other pairs have a gap of one place between them.

**The correct answer is B.**

5. We need to arrange 8 people in a circular arrangement (facing away from the centre). We should start by fixing the position of Y (as a lot of the given information is about Y or related to Y).

The final arrangement will look as follows:



So, Q sits fourth to the right of L.

**The correct answer is D.**

6. N owns Scorpio.

**The correct answer is B.**

7. P is second to the right of Q.

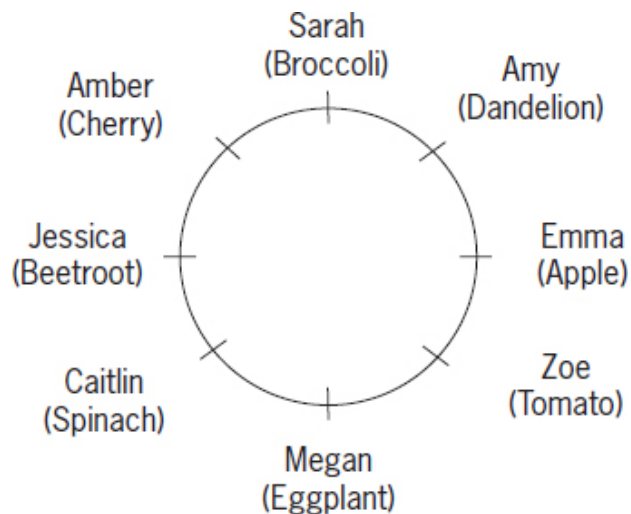
**The correct answer is C.**

8. Out of the given options the combination “N – Scorpio” is correct.

**The correct answer is C.**

9. We have to arrange eight people in a circular arrangement. It is better to start by fixing the position of Caitlin who likes spinach. Now, the position of the person who likes apple can be fixed. Similarly, we can fill the other positions.

The final arrangement will look like this:



So, Amy, that is, the person who likes dandelion sits third to the right of Megan.

**The correct answer is C.**

10. Statement D is correct.

**The correct answer is D.**

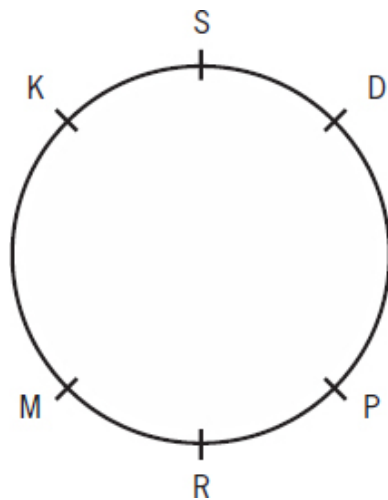
11. Sarah, that is, the person who likes broccoli is sitting fifth to the left of Zoe.

**The correct answer is C.**

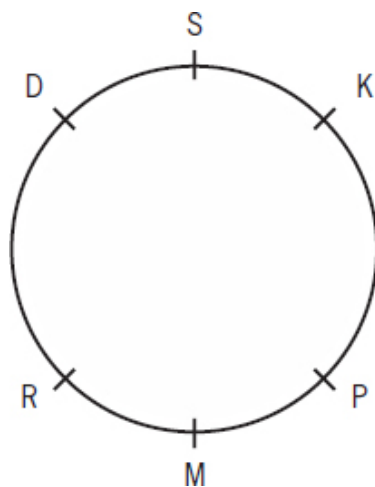
12. Zoe likes tomato.

**The correct answer is D.**

13. The initial arrangement before interchange will look as follows:



Thus, the position after interchange will be as follows:



So, M is sitting second to the right of D.

**The correct answer is B.**

14. All other pairs are arranged in an anti-clockwise direction.



**The correct answer is D.**

15. M is sitting opposite to S.

**The correct answer is B.**

16. P is sitting to the immediate left of K.

**The correct answer is A.**

17. The final arrangement will look like this:

**Possibility 1**

1 (dog)	2 (K-cat)	3 (J-dog)
4 (M-cat)	5 (dog)	6 (H-dog)

**Possibility 2**

1 (dog)	2 (M-cat/dog)	3 (M-cat/dog)
4 (K-cat)	5 (J-dog)	6 (dog-H)

So, K is assigned to Cage 2 or Cage 4.

**The correct answer is E.**

18. If J is assigned to Cage 3, G is assigned to Cage 1.

**The correct answer is C.**

19. K's cage is in a different row from M's cage.

**The correct answer is C.**

20. If K's cage is in the same row as H's cage, then M's cage must be in the same row as G's cage.

**The correct answer is E.**

21. This is a case of tabular arrangement where we have 4 columns—Name, City, Area (of job) and Designation.

From 1, we know that Gaurav's designation is Director, the city is Chennai and the Area is Marketing.

From 2, we know that Pratima is in Hyderabad (as she is neither at the Bangalore or the Chennai branch), her area is Accounts and her designation is Manager.

From 3, we don't know the name, but we know there is a person from given 5 who is in Bangalore, his/her designation is Assistant Manager and who works in the Personnel department.

From 4, we know that Sushmita is in Bangalore, her designation is Supervisor and Devanshu is in Chennai.

Putting all this information in table, we get

Name	City (of branch)	Area (department)	Designation
Gaurav	Chennai	Marketing	Director
Pratima	Hyderabad	Accounts	Manager
	Bangalore	Personnel dept.	Assistant Manager
Sushmita	Bangalore		Supervisor
Devanshu	Chennai		

Now, we can complete the table. As we know, there is just one person left whose name is Kuldeep and so he must be the person who is in Bangalore. His designation is Assistant Manager and he works in the Personnel department.

There are two Assistant Managers, one Manager, one Director and one Supervisor. So, Devanshu must be an Assistant Manager.

As we know, among the four who are in Chennai or Bangalore, two are in Marketing, one in the Personnel department and one is in Accounts. We don't know for sure about Sushmita and Devanshu's area, but we know that one of them works for marketing and the other for accounts.

Now, the solution table can be completed as follows:

Name	City (of branch)	Area (department)	Designation
Gaurav	Chennai	Marketing	Director
Pratima	Hyderabad	Accounts	Manager
Kuldeep	Bangalore	Personnel dept.	Assistant Manager
Sushmita	Bangalore	Accounts/marketing	Supervisor
Devanshu	Chennai	Accounts/marketing	Assistant Manager

The answer to the question is clearly Kuldeep, that is, option B.

**The correct answer is B.**

22. Devanshu is working as assistant manager in Marketing.

**The correct answer is A.**

23. Kuldeep is is the assistant manager in Personnel.

**The correct answer is B.**

24. “Kuldeep–Assistant Manager–Personnel” is the correct combination.

**The correct answer is E.**

25. The final arrangement will look like this:

Floor	Person	Car colour
9	Emmanuel	Blue
8	Shane	Black
7	Ethan	Green
6	Richard	Yellow
5	Jason	Red
4	Andre	Orange
3	Joshua	Pink
2	Patrick	White
1	Luke	Grey

So, Shane stays on floor number 8.

**The correct answer is E.**

26. Three persons are staying between Jason and Emmanuel.

**The correct answer is A.**

27. Patrick stays on the floor immediately below Joshua's floor.

**The correct answer is C.**

28. Richard owns the yellow coloured car.

**The correct answer is D.**

29. We have to arrange 7 people on the basis of their course, name and musical instrument and so we need a table with 3 columns and 7 rows. We can fill data for M and R. Now, P must be doing B.Sc as he is doing the same course as R. Similarly, T is doing B.A. So, J, V and W are doing B.Com. Similarly, other points can also be analysed and filled in the table.

The final arrangement will look as follows:

Person	Course	Instrument
J	B.Com	Guitar
V	B.Com	Flute
W	B.Com	Saxophone
M	B.A.	Banjo
T	B.A.	Sitar
R	B.Sc.	Tabla
P	B.Sc.	Violin

So, J, V and W are pursuing B.Com.

**The correct answer is A.**

30. Banjo is the favourite musical instrument of M.

**The correct answer is D.**

31. Tabla and violin are the favourite musical instruments of those who are pursuing B.Sc.

**The correct answer is C.**

- 32.** “W–B.Com–Saxophone” is the correct combination.

**The correct answer is E.**

- 33.** From option (A) 76, 85, 79, 68, 78 = NOISS

From option (B) 40, 66, 87, 79, 96 = NOIIS

From option (C) 10, 24, 30, 44, 01 = NNESE

From option (D) 40, 85, 79, 96, 77 = NOISE

**The correct answer is D.**

- 34.** From option (A) 01, 23, 20, 41 = FFAT

From option (B) 43, 40, 78, 98 = FASU

From option (C) 23, 20, 69, 42 = FASL

From option (D) 01, 34, 69, 41 = FAST

**The correct answer is D.**

- 35.** From option (A) 33, 42, 59, 97 = LLOO

From option (B) 13, 68, 20, 31 = LEAN

From option (C) 42, 97, 20, 34 = LOAA

From option (D) 00, 85, 88, 99 = LOAA

**The correct answer is B.**

### **General Solution for Questions 36–39:**

Trees have their heights in increasing order and B is in the middle.

Tree A is 3 feet taller than tree D which means A and D have two trees in between. Therefore, it can be concluded that D is shorter than B and A is taller than B.

Difference between tree B and tree F, F being shorter is same as the difference between tree C and tree D, tree C being taller which means B can be 1 foot, 2 feet or 3 feet taller than tree F.

If tree B is 3 feet taller than tree F, then, tree C will also be 3 feet taller than tree D but tree A is 3 feet taller than tree D, so this case is not possible.

If tree B is 1 foot taller than tree F than tree C will also be 1 foot taller than tree D. Therefore, F will have to be the third smallest and tree D has to be the second smallest tree which further contradicts difference between tree A and tree D. So, this is also not possible.

We are left with only one possibility of F being 2 feet shorter than tree B. Also, tree D is shorter than tree B but not the smallest, so tree D will be the third smallest tree.

F D B C A

F is shorter than tree G which means tree G is tallest. So, the final arrangement will be as below:

E F D B C A G

- 36.** Difference of height of tree E and tree B = 3 feet

Tree which is 3 feet taller than tree D = tree A

**The correct answer is A.**

- 37.** Difference of height of tree G and tree D = 4 feet

4 feet =  $4 \times 12$  inches = 48 inches

**The correct answer is C.**

- 38.** Sum of heights of tree G and tree F cannot be determined as there is no evidence of actual height of any tree but only relative position of trees is given.

**The correct answer is D.**

- 39.** Maximum possible height of tree A = 9 feet

Least possible height of tree F = 2 feet

So, required difference =  $9 - 2 = 7$  feet

**The correct answer is C.**

- 40.** Interchanging '/' and '-', the equation becomes;

$$8 + 7 \times 6 - 16 / 8 = 48$$

$$48 = 48 \text{ (LHS = RHS)}$$

**The correct answer is B.**

- 41.** Changing the correct signs, the equation becomes:

$$40 + 16 - 16 \div 8 \times 10 = ?$$

$$\Rightarrow 56 - 20 = ?$$

$$\Rightarrow ? = 36$$

**The correct answer is D.**

- 42.** Checking through options, we get

From option A

$$16 \times 8 + 2 \div 3 - 4$$

$$= 128 + \frac{2}{3} - 4$$

$$= 124 + \frac{2}{3} = \frac{372 + 2}{3} = \frac{374}{3}$$

From option B

$$16 \times 8 \div 2 + 3 - 4$$

$$= 16 \times 4 + 3 - 4$$

$$= 64 + 3 - 4$$

$$= 63$$

From option C

$$16 - 8 \div 2 + 3 \times 4$$

$$= 16 - 4 + 12$$

$$= 12 + 12$$

$$= 24$$

From option D

$$\begin{aligned}16 - 8 \div 2 \times 3 + 4 \\&= 16 - 4 \times 3 + 4 \\&= 16 - 12 + 4 \\&= 20 - 12 = 8\end{aligned}$$

**The correct answer is D.**

**43.** From option A

$$20 + 25 \div 15 \times 4 - 6 = 10$$

After changing sign,

$$20 \div 25 - 15 + 4 \times 6$$

$$= \frac{4}{5} - 15 + 24$$

$$= \frac{4}{5} + 9 = \frac{49}{5}$$

From option B

$$20 - 5 \times 10 \div 20 + 4 = 20$$

After changing sign,

$$20 \times 5 + 10 - 20 \div 4$$

$$= 100 + 10 - 5$$

$$= 100 + 5 = 105$$

From option C

$$50 + 10 - 5 \div 5 \times 20$$

After changing sign,

$$50 \div 10 \times 5 - 5 + 20$$

$$= 5 \times 5 - 5 + 20$$

$$= 25 - 5 + 20 = 40$$

From option D



$$15 - 5 \times 50 + 25 \div 10$$

After changing sign.

$$15 \times 5 + 50 \div 25 - 10$$

$$= 15 \times 5 + 2 - 10$$

$$= 77 - 10 = 67$$

**The correct answer is C.**

- 44.** After changing signs, the given expression becomes

$$16 \times 5 - 9 \div 3 + 20$$

$$= 16 \times 5 - 3 + 20$$

$$= 80 - 3 + 20 = 97$$

**The correct answer is D.**

- 45.**  $16 \div 4 = 144 \Rightarrow 16 - 4 = 12 \Rightarrow 12^2 = 144$

$$15 \div 3 = 144 \Rightarrow 15 - 3 = 12 \Rightarrow 12^2 = 144$$

$$10 \div 2 = 64 \Rightarrow 10 - 2 = 8 \Rightarrow 8^2 = 64$$

$$20 \div 5 = ? \Rightarrow 20 - 5 = 15 \Rightarrow 15^2 = 225$$

**The correct answer is D.**

- 46.** In the given example, note that in every step, the words get arranged alphabetically from left to right and the numbers get arranged in descending order. The words and numbers also alternate with the numbers occupying the first slot. Using this logic:

**Input: can axe 32 12 kit 57 bat 89**

Step 1: 89 can axe 32 12 kit 57 bat

Step 2: 89 axe can 32 12 kit 57 bat

Step 3: 89 axe 57 can 32 12 kit bat

**The correct answer is D.**

**47. Input:** 76 cot 64 dog 45 hen 54 urn

**Next Step:** 76 cot 64 dog 54 45 hen urn

**Next + 1 step:** 76 cot 64 dog 54 hen 45 urn

Thus, 2 more steps are needed to complete the arrangement

**The correct answer is B.**

**48.** Note that we can never arrive at an input from a given output because there exist multiple possibilities for the input.

**The correct answer is E.**

**49.** Note that to get the last step, that is the final output, we don't need to go through all the steps. We can simply arrange the given terms in alphabetical order (for the words) and descending order (for the numbers) – 99 jut 56 mat 33 pot 22 tie.

**The correct answer is D.**

### **General Solution for Questions 50–53:**

The given information can be tabulated as follows:

People	Trekking	Lakes	States
Ram	Deccan/Himalayas	Nakuchiatal	Rajasthan
Shyam	Himalayas/Deccan	Chilka	Uttaranchal
Amit	Aravallis	Mansarovar	Madhya Pradesh
Sumit	Vindhyachal	Pushkar	Andhra Pradesh

Now, all questions can be easily answered.

**50.** Basis the given information it cannot be inferred who has gone to the Himalayas.

**The correct answer is B.**

**51.** From the table, it is clear that Sumit is trekking in Pushkar.

**The correct answer is E.**

- 52.** From the given information, following can be deduced:

- (1) Ram has not gone to the Aravallis.
- (2) Sumit has not gone to the Himalayas.

**The correct answer is D.**

- 53.** From the table, it is clear that Shyam is trekking in Uttaraanchal.

**The correct answer is D.**

### **General Solution for Questions 54–57:**

The arrangement of output sequence as follow:

In step I, we first shifted smallest word (number of alphabets in word) to the leftmost side and the largest number to the

rightmost side. In step II, second smallest word is shifted to the right of the smallest word and the second largest number is shifted to the right of the largest number. And so on in next step.

**Step I:** would procedures doctors 50 operation 75 45 American review 80

**Step II:** would review procedures doctors 50 operation 45 American 80 75

**Step III:** would review doctors procedures operation 45 American 75 50

**Step IV:** would review doctors American procedures operation 50 45

**Step V:** would review doctors American operation procedures 50 45

- 54.** Looking at step V, we find that 'American' is fourth from the left.

**The correct answer is B.**

- 55.** There are total five steps required to complete the arrangement.

**The correct answer is C.**

- 56.** In step III 'doctors' is the third element from the left end and '80' is the third element from the right end.

Similarly, 'review' is the second element from the left end and '75' is the second element from the right end.

Now, as 'would' is the first element from the left end, so it will be related to the first element which is from the right end, that is, '50'.

**The correct answer is C.**

- 57.** Looking at the step IV, we find that there are three words/numbers which are between 'procedures' and '50'.

**The correct answer is A.**

- 58.** Step 1 = Sum of digits

Step 2 = Letter positions repeated

Step 3 = Input – S1

Step 4 = Add the squares of each digit in the number of Step 3

Step 5 = The alphabet (go around again after count of 26)

Step 6 = Balance of number of letters to reach Z

The fourth element is 1111

Step 1 = 4

Step 2 = DD

Step 3 = 1107

**The correct answer is B.**

- 59.** The given input is

New Input	1203	3211	4522	1111	6666
-----------	------	------	------	------	------

For the new input:

Step 1 = 6 7 13 4 24

Step 2 = FF GG MM DD XX

Step 3 = 1,197 3,204 4,509 1,107 6,642

Step 4 = 132 29 122 51 92

Step 5 = B C R Y N

Step 6 = 24 23 8 1 12

**The correct answer is E.**

**Alternatively,**

Step 1 is sum of digits, none of which is 29. Step 2 is alphabets, and so cannot be 29.

Step 3 will be 4-digit numbers, and so cannot be 29. The only possibility is in step 4, and so the only option is E.

**60.** For the new input '3210':

Step 1 = 6

Step 2 = FF

Step 3 = 3204

Step 4 = 29

Step 5 = C

**The correct answer is B.**

**61.** For the new input '3021, 1123, 2254, 2222, 5555':

Step 1 = 6 7 13 8 20

Step 2 = FF GG NN HH TT

Step 3 = 3015 1116 2241 2214 5535

Step 4 = 35 39 25 25 84

**The correct answer is D.**

### General Solution for Questions 62–65:

The given information can be tabulated as follows:

People	Profession	Instrument
Aman	Doctor	Sarod
Faizal	Singer	Sitar
Indra	Engineer	Violin
Kapil	Builder	Guitar
Naveen	Teacher	Flute

Now, all questions can be easily answered.

**62.** The singer can play the sitar.

**The correct answer is D.**

**63.** Indra is the Engineer.

**The correct answer is C.**

**64.** Naveen can play the flute.

**The correct answer is E.**

**65.** Kapil, who is a builder, is guitarist.

**The correct answer is A.**

### General Solution for Questions 66–69:

Let us tag each number and observe their movement.

**Input:** 14 32 99 110 88 9 (11) 18  
 (1) (2) (3) (4) (5) (6) (7) (8)

**Stage 1:** 11 14 32 (99) 110 88 9 18  
 (7) (1) (2) (3) (4) (5) (6) (8)

**Stage 2:** 11 99 14 32 (110) 88 9 18  
 (7) (3) (1) (2) (4) (5) (6) (8)

**Stage 3:** 11 99 10 14 (32) 88 9 18  
 (7) (3) (4) (1) (2) (5) (6) (8)

**Stage 4:** 11 99 110 32 14 88 (8) 18  
 (7) (3) (4) (2) (1) (5) (6) (8)

**Stage 5:** 11 99 110 32 9 88 14 18  
 (7) (3) (4) (2) (6) (5) (1) (8)

**66.**

**Stage 1:** 31 19 47 86 39 13 66 69  
 (7) (1) (2) (3) (4) (5) (6) (8)

**Stage 5:** 11 86 39 47 66 13 19 69  
 (7) (3) (4) (2) (6) (5) (1) (8)

**The correct answer is C.**

**67.**

**Stage 2:** System restart will happen in another 20 minutes  
 (7) (3) (1) (2) (4) (5) (6) (8)

**Stage 5:** System restart in happen 20 another will minute  
 (7) (3) (4) (2) (6) (5) (1) (8)

**The correct answer is B.**

**68.**

**Stage 5:** 141 273 87 41 78 9 319 1012  
 (7) (3) (4) (2) (6) (3) (1) (8)

**Input:** 319 41 273 87 9 78 141 1012  
 (1) (2) (3) (4) (5) (6) (7) (8)

**The correct answer is B.**

69.

**Stage 4:** Wind flows over the river bed cool calm

(7) (3) (4) (2) (1) (5) (6) (8)

**Stage 2:** Wind flows river the over bed cool calm

(7) (3) (1) (2) (4) (5) (6) (8)

**The correct answer is D.**

### General Solution for Questions 70–73:

Let us tag each word and observe their movement.

**Teacher:** This school is the best place to study

(1) (2) (3) (4) (5) (6) (7) (8)

**Student 1:** To this school is the place study best

(7) (1) (2) (3) (4) (6) (8) (5)

**Student 2:** To best this school is the place study

(7) (5) (1) (2) (3) (4) (6) (8)

**Student 3:** To best school this is the place study

(7) (5) (2) (1) (3) (4) (6) (8)

**Student 4:** To best school study this is the place

(7) (5) (2) (8) (1) (3) (4) (6)

**Student 5:** To best school study the this is place

(7) (5) (2) (8) (4) (1) (3) (6)

70. Let us tag Teacher's sentence and then write the sentence of Student 4 as follows.

**Teacher:** Ram is the best student of the class

(1) (2) (3) (4) (5) (6) (7) (8)

**Student 4:** The student is class Ram the best of

(7) (5) (2) (8) (1) (3) (4) (6)

**The correct answer is A.**

71. Let us tag Student 2's sentence and then write the sentence of Student 5 as follows.

**Student 2:** Rats are the most dangerous pets of all

(7) (5) (1) (2) (3) (4) (6) (8)

**Student 5:** Rats are most all pets the dangerous of

(7) (5) (2) (8) (4) (1) (3) (6)



**The correct answer is C.**

- 72.** Let us tag Student 5's sentence and then write the sentence of the teacher as follows.

**Student 5:** Stars shining bright in night the sky falls

(7) (5) (2) (8) (4) (1) (5) (6)

**Teacher:** The bright sky night shining falls starts in

(1) (2) (3) (4) (5) (6) (7) (8)

**The correct answer is B.**

- 73.** Let us tag Student 4's sentence and then write the sentence of the teacher as follows.

**Student 4:** 12 92 143 278 69 73 41 39

(7) (5) (2) (8) (1) (3) (4) (6)

**Teacher:** 69 143 73 41 92 39 12 278

(1) (2) (3) (4) (5) (6) (7) (8)

**The correct answer is B.**

### **General Solution for Questions 74–77:**

Words are arranged in decreasing order of their word lengths. In case of same word lengths, words are arranged in opposite manner of that arranged in a dictionary.

- 74.** Input: the world cup final was held at Brasils Capital

**Step 1:** Capital the world cup final was held at Brasil's

**Step 2:** Capital Brazil's the world cup final was held at

**Step 3:** Capital Brazil's world the cup final was held at

**The correct answer is D.**

- 75.** Input: Kolkata is called the city of palaces.

**Step 1:** Palaces Kolkata is called the city of

**Step 2:** Palaces Kolkata called is the city of

**Step 3:** Palaces Kolkata called city in the of

**Step 4:** Palaces Kolkata called city the is of

**Step 5:** Palaces Kolkata called city the of is

Hence 5 steps will be required to get the final output.

**The correct answer is D.**

**76. Step 2:** School late you are for the

**Step 3:** School late you the are for

**Step 4:** School late you the for are

So, the third word from the left in step 4 is “you”.

**The correct answer is D.**

**77. Step 2:** Mansoon gathers arrives rain as pace in july

**Step 3:** Mansoon gathers arrives rain pace as in july

**Step 4:** Monsoon gathers arrives rain pace july as in

**The correct answer is A.**

## 4 Other Reasoning

1. For column 1:  $52 + 32 - 22 = 30$

For column 2:  $62 + 42 - 32 = 43$

For column 3:  $62 + 42 - 12 = 51$

Similarly, for column 4:  $72 + 52 - 22 = 70$

**The correct answer is E.**

2.  $1^2 + 5 = 6$

$2^2 + 5 = 9$

$3^2 + 5 = 14$

$4^2 + 5 = 21$

$5^2 + 5 = 30$

Therefore,  $6^2 + 5 = 41$

**The correct answer is C.**

3.  $1^2 + 2^2 = 5$

$3^2 + 4^2 = 25$

$5^2 + 6^2 = 61$

$7^2 + 8^2 = 113$

$9^2 + 10^2 = 181$

**The correct answer is D.**

4. The pattern followed is

$5 \times 6 \times 7 + 8 = 218$

$7 \times 8 \times 9 + 10 = 514$

Similarly,

$$2 \times 14 \times 11 + 16 = 324$$

**The correct answer is D.**

5. The pattern followed is

$$(1 + 2 + 3 + 4)^3 = 10^3 = 1,000$$

$$(2 + 4 + 2 + 3)^3 = 11^3 = 1,331$$

$$(3 + 2 + 4 + 3)^3 = 12^3 = 1,728$$

**The correct answer is D.**

6. The pattern followed is

$$3^2 + 4^3 = 9 + 64 = 73$$

$$2^3 + 11^2 = 8 + 121 = 129$$

$$5^3 + 7^3 = 125 + 343 = 468$$

$$10^3 + x^2 = 1,144$$

$$\Rightarrow x^2 = 114 - 1,000 \Rightarrow x = 12$$

**The correct answer is E.**

7. The pattern followed is

$$(13 \times 14) + (12 \times 15) = 182 + 180 = 362$$

$$(25 \times 16) + (32 \times 18) = 400 + 576 = 976$$

So, the number in place of question mark will be

$$(52 \times 5) + (24 \times 28) = 260 + 672 = 932$$

**The correct answer is B.**

8. The pattern followed is

$$(1 + 2 + 4 + 7) - (1 + 1) = 12$$

$$(16 + 17 + 19 + 22) - (13 + 13) = 48$$

Note here that in the first part the pattern followed is

$$1 + 1 = 2, 2 + 2 = 4, 4 + 3 = 7$$

$$16 + 1 = 17, 17 + 2 = 19, 19 + 3 = 22$$

Therefore, the numbers at the question marks will be

$$(3 + 4 + 6 + 9) - (3 + 3) = 16$$

So, the answer is “4 in first column, 3 in second column and 16 in third column”.

**The correct answer is B.**

9. The pattern followed is

$$31 \times (27 + 13) = 1,240$$

$$41 \times (9 + 17) = 1,066$$

$$13 \times (29 + 62) = 1,183$$

**The correct answer is E.**

10. The students who study English is represented by triangle, Math is represented by rectangle and science is represented by pentagon. Therefore, the students who study all the three subjects English, Maths and Science will be the common region among triangle rectangle and pentagon, which is ‘f’.

**The correct answer is D.**

11. Triangle represents policeman, square represents actors, and circle represent poets. So, politicians who are poets but not actors will be the common area between triangle and circle but not square which is represented by area ‘d’.

**The correct answer is D.**

12. Given information can be tabulated as follows:

Number of students	Marks scored
36	0
40	2
4	17
9	15
12	7
31	5
27	10

Total number of students = 180

Number of students who scored 12 marks

$$= 180 - (36 + 40 + 4 + 9 + 12 + 31 + 27)$$

$$= 180 - 159 = 21$$

**The correct answer is D.**

- 13.** Total number of people in the row = 74

A's position from the left side of the row = 19

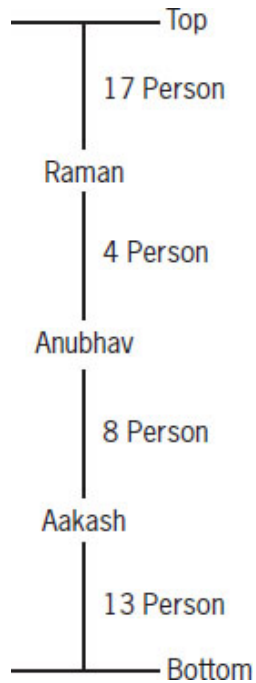
B's position from the right side of the row = 22

So, number of people sitting between A and B

$$= 74 - 19 - 22 = 33$$

**The correct answer is C.**

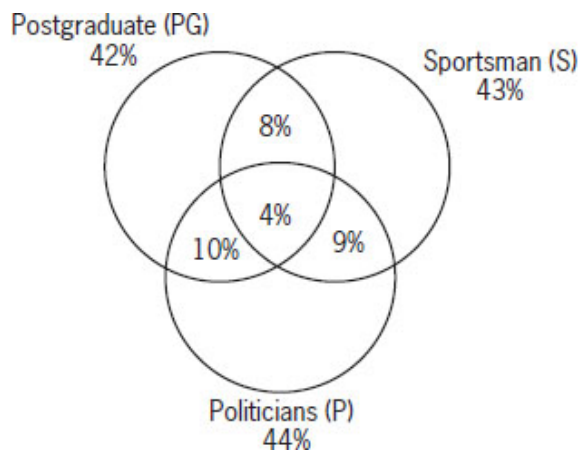
- 14.** Given information can be arranged as follows:



Hence, Aakash is 9th place below Anubhav.

**The correct answer is C.**

15. From the given information, we can draw the following Venn diagram:



From the Venn diagram, we have

$$n(\text{PG}) = 42\%$$

$$n(\text{P}) = 44\%$$

$$n(\text{S}) = 43\%$$

$$n(PG \cap P) = 14\%$$

$$n(PG \cap S) = 12\%$$

$$n(S \cap P) = 13\%$$

$$n(PG \cap S \cap P) = 4\%$$

$$n(\overline{PG \cap S \cap P}) = 36\%$$

$$n(PG \cup S \cup P) = n(PG) + n(S) + n(P) - n(PG \cap S) - n(S \cap P) - n(PG \cap P) + n(PG \cap S \cap P)$$

$$= 42 + 44 + 43 - 12 - 13 - 14 + 4 = 94\%$$

$$n(\overline{PG \cup S \cup P}) = 100\% - 94\%$$

$$\Rightarrow 36 = 6\%$$

$$\Rightarrow 6 = 1\% \Rightarrow 600 = 100\%$$

So, total number of members in club XYZ = 600

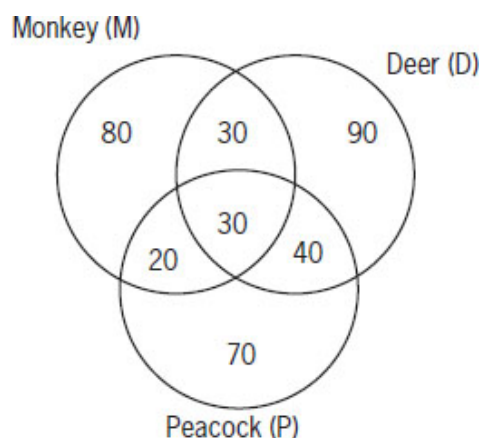
Exactly any two of the three categories

$$= 10\% + 8\% + 9\% = 27\%$$

$$\text{So, required number of people} = \frac{27}{100} \times 600 = 162$$

**The correct answer is A.**

16. From the given information, we can draw the following Venn diagram:



$$n(M) = 80 + 15 + 10 + 10 = 115$$

$$n(D) = 90 + 15 + 10 + 20 = 135$$

$$n(P) = 70 + 10 + 10 + 20 = 110$$

$$\text{Tax collected from monkeys} = 115 \times 2 = 230$$

$$\text{Tax collected from deer} = 135 \times 3 = 405$$

$$\text{Tax collected from peacocks} = 110 \times 4 = 440$$



So, total tax collected =  $230 + 405 + 440 = 1,075$

**The correct answer is B.**

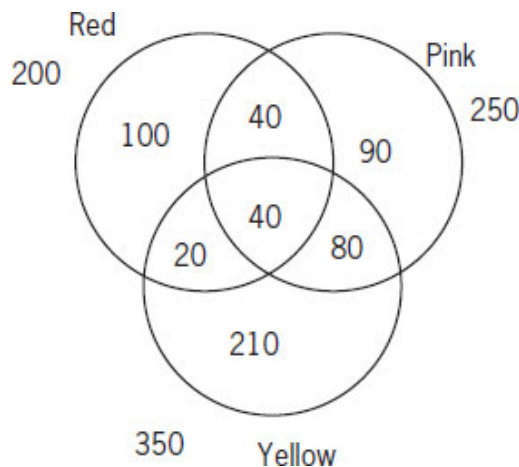
### General Solution for Questions 17–19:

$$n(R \cup P \cup Y) = n(R) + n(P) + n(Y) - [n(R \cap P) + n(P \cap Y) + n(R \cap Y)] + n(R \cap P \cap Y)$$

$$\Rightarrow 580 = 200 + 250 + 350 - (80 + 120 + 60) + x$$

$$\Rightarrow x = 40$$

We can draw the following Venn diagram.



- 17.** The number of people who like only Red is 100.

**The correct answer is E.**

- 18.** The number of people who like only Pink is 90.

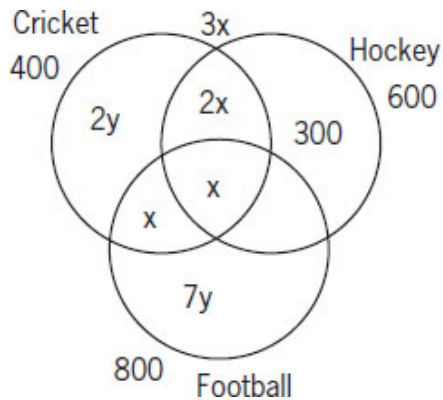
**The correct answer is D.**

- 19.** The number of people who like only Yellow and all 3  
 $= 40 + 210 = 250$

**The correct answer is E.**

### General Solution for Questions 20–23:

On the basis of the information given, we can draw the following Venn diagram.



If  $x$  is the number of players who play all three games, then number of players who play Cricket and Hockey is  $3x$  and therefore those who play only Cricket and Hockey is  $2x$ . Similarly, number of players playing Cricket and Football is  $2x$  and so those who play only Cricket and Football is  $x$ .

Also, if  $2y$  play only Cricket,  $7y$  play only Football.

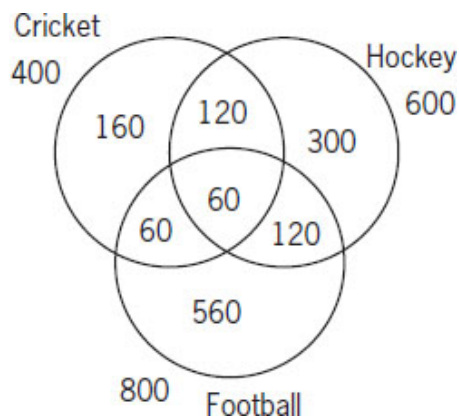
Now,  $2y + 2x + x + x = 400$  or  $y + 2x = 200$ , and

Number of players playing only Hockey and Football  
 $= (800 - 7y - x - x)$  which is same as  $(600 - 300 - 2x - x)$ .

So,  $800 - 7y - x - x = 600 - 300 - 2x - x$  or  $-7y + x = -500$ .

Solving, we get  $x = 60$ ,  $y = 80$ .

The revised Venn diagram will be



**20.** The number of players who play Cricket and Football =  $60 + 60 = 120$

**The correct answer is E.**

- 21.** The number of players who play Cricket and Hockey =  $60 + 120 = 180$

$$20\% \text{ of } 180 = 36$$

**The correct answer is E.**

- 22.** The number of players who play Hockey and Football =  $60 + 120 = 180$

**The correct answer is C.**

- 23.** The required difference =  $300 - 60 = 240$

**The correct answer is B.**

- 24.** 10% who can repair all 3 = 10% of 140 = 14

Those who can repair exactly 2 = 50 (given)

Number of those who can repair only ACs and only Refrigerators =  $x$   
 $+ x = 2x$

$$140 - (22 + 50 + 14) = 2x$$

$$\text{or } x = 27$$

**The correct answer is D.**

- 25.** Total number of student = 150

Number of student who passed PPT  
= 50% of 150 = 75

Number of student who passed PMT = 55

Number of student who passed all the three tests  
= 6

Out of these 75 students who passed PPT, 62 students passed only PPT test and 6 students passed all 3 tests.

So, remaining number of students

$$= 75 - 62 - 6 = 7 \text{ students}$$

Out of these 7 students, 4 students didn't pass PMT but passed other two tests.

So, there will be 3 students who didn't pass PET but passed other two tests.

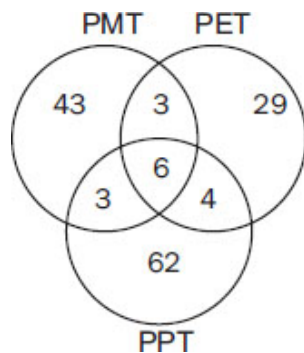
Out of 55 students who passed PMT, 43 students passed only PMT test and 6 students passed all 3 tests.

So, remaining number of students

$$= 55 - 43 - 6 = 6 \text{ students}$$

Out of these 6 students, 3 students didn't pass PET but passed other two tests.

Above information can be shown using Venn diagram as below:



So, the number of student who didn't pass PPT but other two tests =  $6 - 3 = 3$  students

**The correct answer is A.**

26. Since  $\frac{3}{4}$  of the chocolates have nuts and  $\frac{1}{3}$  of the chocolates have both nuts and fruits, we can simply subtract  $\frac{3}{4} - \frac{1}{3}$  to get all the chocolates with nuts but no fruit.

$$\frac{3}{4} - \frac{1}{3} = \frac{5}{12}$$

**The correct answer is B.**

27. Number of girls with mobile phones =  $\left(\frac{2}{5+2}\right) \times 35 = 10$

Total number of boys =  $\frac{3}{5} \times 100 = 60$

So, total number of girls =  $100 - 60 = 40$

Therefore, the required percentage

=  $\frac{10}{40} \times 100 = 25\%$

**The correct answer is C.**

28. If  $x$  students like both the subjects, then number of students who like only Chemistry is  $(45 - x)$  and the number of students who like only Physics is  $(60 - x)$ .

Hence,  $(45 - x) + (60 - x) + x + 5 = 100$

$\Rightarrow 110 - x = 100$

$\Rightarrow x = 10$

**The correct answer is C.**

29. Students studying all the three subjects

=  $500 - (285 + 195 + 115 - 45 - 70 - 50) - 50$

= 20

**The correct answer is D.**

30. It is not given that all of them study at least one subject.

**The correct answer is E.**

31. **Argument Construction:**

A certain spate of ragging incidents in medical colleges and the resulting suicides has given rise to a demand for government intervention.

- (A) The incidents of ragging have led to suicides among the students. Clearly, the positive intent behind ragging-building a bond between senior and junior students-has been defeated. Therefore, government intervention is definitely required.
- (B) Correct. This is the appropriate decision as it addresses the problem proactively and defines a clear course of action.
- (C) This statement trivialises an extremely important and relevant issue and absolves the government of all responsibility.
- (D) Though an inquiry should be conducted, shutting down the medical colleges is an extreme decision that will create additional problems.
- (E) Prima Facie, the statement appears correct. Issues such as ragging are the responsibility of college authorities. However, one has to keep in mind that the ragging incidents have led to an increase in the number of suicides. This makes the matter extremely grave and demands stronger action.

**The correct answer is B.**

### **32. Argument Construction:**

There is a huge amount of garbage dumped on the northern side of Mount Everest. The best option will be the one that presents an effective resolution of the problem.

- (A) the climbers to climb from the southern side is not a solution to the problem as they would then litter the southern side.
- (B) Banning climbing completely is also not a practical solution to the problem.
- (C) This option also can be eliminated as suspending climbing activities will also not present a resolution of the problem. Also, the garbage is largely human generated and the mountain cannot be expected to recuperate on its own.
- (D) Correct. This option is correct as it not only presents an effective resolution of the problem but also includes measures for avoiding it in the future.
- (E) This option doesn't take any decision. It adopts a philosophical and passive approach.

**The correct answer is D.**

**33. Argument Construction:**

There have been several incidents in which many doctors have recommended medicines manufactured by those companies that offer huge commissions to these doctors which has resulted in patients being forced to buy medicines at higher costs.

- (A) Though this option appears correct, a question that arises is how does the council expect to enforce the ban? How will it identify the erring doctors and track these payments? One should keep in mind that a decision is considered a sound one only when it results in the achievement of the desired objective. Thus, this option is incorrect.
- (B) This is a morally and ethically incorrect statement. The primary role of a doctor is to save the lives of his/her patients in the most effective and efficient manner. This makes no allowance for generating extra income.
- (C) The issue being discussed is not that of the impact of these medicines. The central concern is the inflated cost being borne by the patients due to this practice.
- (D) There is no relationship between the cost and the effectiveness of these medicines. Nowhere does the passage state that these medicines are more effective than other medicines.
- (E) Correct. This is the appropriate decision as asking doctors to prescribe only those medicines that are locally available will ensure control over the recommending power of the doctors. Also, if the medicines are locally available the patients can compare prices and buy the ones that meet their budgets.

**The correct answer is E.**

**34.** Given that there are five stations and Q is in the middle, that is, Q is the third station.

Q is on the immediate left of R. So, R is the fourth station.

S is not the first station but towards the left of Q. So, S is the second station.

T is towards the right of S, So T is the fifth station. Hence, P will be the first station.

The final arrangement will be as below:

P S Q R T

Hence, station P is to the immediate left of S.

**The correct answer is A.**

**35.** 4th element from left → 6

10th element to the right of 6 → D

So, 5th element to the left of D → L

**The correct answer is D.**

**General Solution for Questions 36–39:** The only possible seating arrangement is:

S is 2<sup>nd</sup> to the right of P. So, S is either at 3<sup>rd</sup>, 4<sup>th</sup> or 5<sup>th</sup> place. If S is at 4<sup>th</sup> place, then P will be at 2<sup>nd</sup> place, in which case T would have to be neighbour of P or S, which is not allowed. If S is at 4<sup>th</sup> place, then P will be at 3<sup>rd</sup> place, and T also has to be at 3<sup>rd</sup> place because there is one person between S and T. Therefore, the only place for P and S is 1<sup>st</sup> and 3<sup>rd</sup> place.

Since B is at its leftmost place, B will be facing T. D cannot be with B and D has to face R, so the only place for D is 2<sup>nd</sup> position and so R is also at corresponding 2<sup>nd</sup> place. Since C and E are together, they will come between B and D and A will be facing P, at 1<sup>st</sup> position. Finally, since E does not face S, E will face Q and so C will face S.

On the basis of above, the following arrangement can be made:

Facing South	A	D	C	E	B
Facing North	P	R	S	Q	T

**36.** From the above table, the persons are P and T.



**The correct answer is C.**

- 37.** E is facing Q.

**The correct answer is E.**

- 38.** C is sitting at the centre of the row.

**The correct answer is C.**

- 39.** R is third to the left of T.

**The correct answer is B.**

### **General Solution for Questions 40–42:**

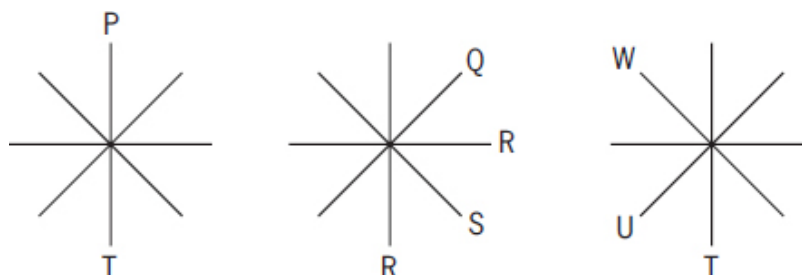
In questions where some are facing the Centre and some are facing outside, it is better to draw a table to keep track of all those facing outside and those facing centre. Make preliminary entries by scanning through the data given. The following is the preliminary table.

Facing outside	Facing the Centre
T	S
U	

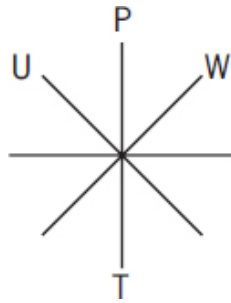
Beginning with the other data, we have

1. P is opposite to T.
2. S is adjacent to R.
3. Q is second to the right of S.
4. W is second to the right of U.

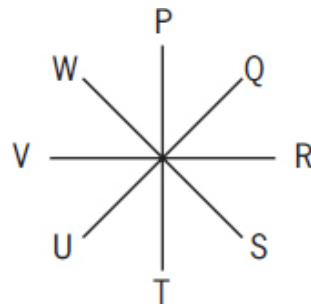
We get the following possible arrangements



If P is facing the centre, we have

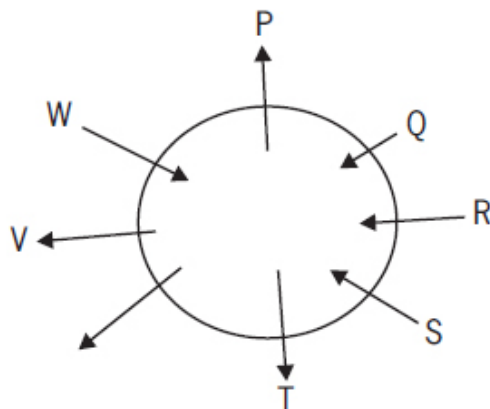


This violates the fact that both neighbours of U face outside. So P faces outside. Now, the arrangement is:



The updated table would be:

Facing outside	Facing the Centre
T	S
U	R
P	S
V	W



40. As W is facing centre, so Q is second to the left of W.

**The correct answer is C.**

- 41.** From both the sides, there are three people between them.

**The correct answer is D.**

- 42.** P, T, U and V are facing outside.

**The correct answer is E.**

**General Solution for Questions 43–46:**

1. From statement I and II, Bimal cannot live at floor number 1. Because Geeta lives below the floor number of Bimal.
2. From the statement “the sum of the floor numbers on which Aman and Bimal stay is 8”.

$$\text{Aman} + \text{Bimal} = 8$$

If Bimal's floor number is 3, then the Aman's floor number is 5. Then Disha lives on floor number 4 from statement I. Last statement says that full stay just above the floor number of disha which is not possible.

If Bimal's floor number is 5, then Aman's floor number is 3. We can get the following arrangement.

Floor Number	Person
7	Fulla
6	Disha
5	Bimal
4	Chandu
3	Aman
2	Geeta
1	Esha

- 43.** Looking the above table, we get that Esha stays on floor numbered 1 and Chandu stays on floor numbered 4. Therefore, the sum of their floor numbers is 5.

**The correct answer is B.**

44. Looking at the above table, we find that there are three persons who stay between Geeta and Disha.

**The correct answer is C.**

45. Esha stays on the floor numbered 1. Therefore, the square of 1 is 1.

**The correct answer is A.**

46. Looking at the above table, we find that Aman stays just above the floor on which Geeta stays.

**The correct answer is B.**

### **General Solution for Questions 47–50:**

$$E > A > G$$

$$E > B > C > F$$

Moreover, C got 70%, and so B got 80% and F got 60%. Also, E got 90%.

Using the above information, we get:

$$E (90\%) > B (80\%) > A > C (70\%) > G > F (60\%) > D$$

47. D scored the lowest marks.

**The correct answer is B.**

48. The marks of D is between 50% and 60% because the lowest marks possible is 50%.

**The correct answer is C.**

49. The marks scored by G lies between 60% and 70%.

**The correct answer is B.**

50. B scored the second highest marks.

**The correct answer is B.**

51. The pairs of letter are ST and RS, so the answer is 2.

**The correct answer is C.**

52.

A1	B2	C3	D4	E5	F6	G7	H8	I9	J10	K11	L12	M13
Z26	Y25	X24	W23	V22	U21	T20	S19	R18	Q17	P16	O15	N14

The opposite of B is Y, D is W, F is U and H is S.

Similarly, the opposite of E is V, G is T, I is R and J is Q.

**So correct Answer is B.**

53.

A1	B2	C3	D4	E5	F6	G7	H8	I9	J10	K11	L12	M13
Z26	Y25	X24	W23	V22	U21	T20	S19	R18	Q17	P16	O15	N14

$A + 2 = C$ ,  $C + 2 = E$ ,  $E + 2 = G$ ,  $G + 2 = I$

$C - 2 = A$ ,  $A - 2 = Y$ ,  $Y - 2 = W$ ,  $W - 2 = U$

$D + 2 = F$ ,  $F + 2 = H$ ,  $H + 2 = J$ ,  $J + 2 = L$

$G - 2 = E$ ,  $E - 2 = C$ ,  $C - 2 = A$ ,  $A - 2 = Y$

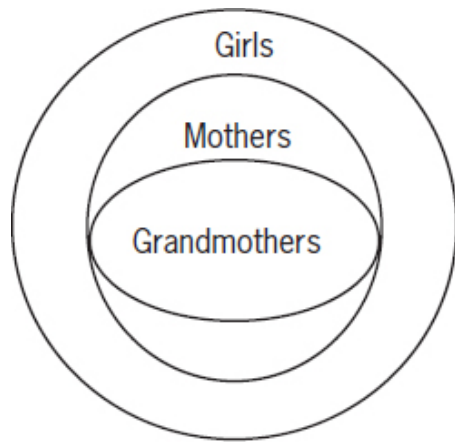
Therefore, ? = IULY

**The correct answer is D.**

54. Some mothers are also doctors and some fathers are also doctors.

**The correct answer is D.**

55. All grandmothers are definitely mothers, and all the mothers are girls for sure. Therefore, the Venn-diagram would be:

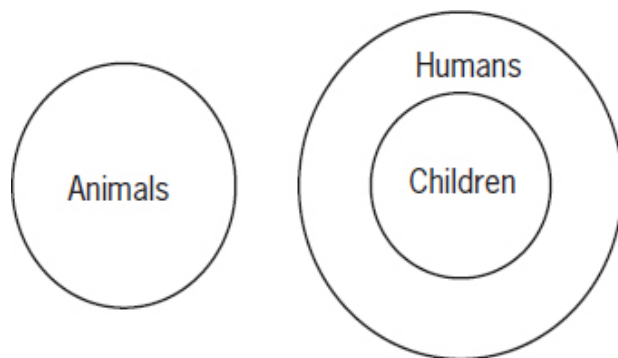


**The correct answer is B.**

- 56.** If one object of group A completely belongs to another group B but both are entirely different from group C, so they are represented as

**The correct answer is C.**

- 57.** The number of educated men who are in government job = 20  
(common region to all)

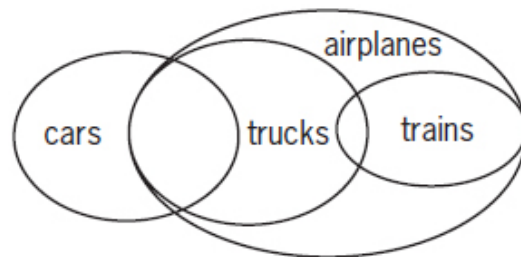
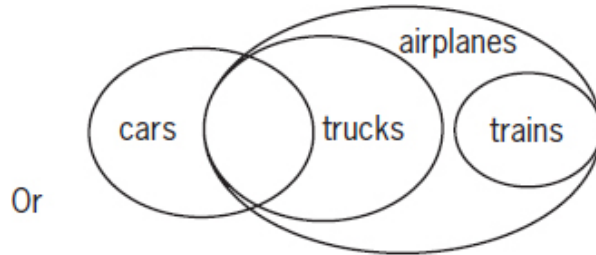
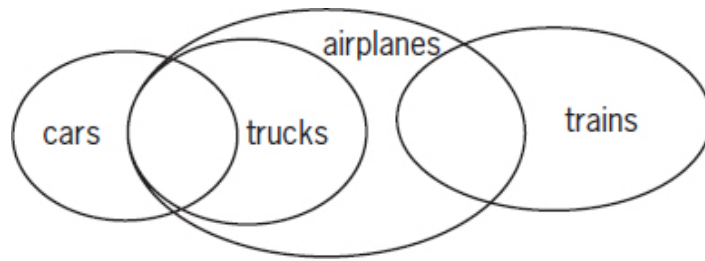


**The correct answer is B.**

- 58.** The number of people in government job who are not educated = 15  
+ 40 = 55

**The correct answer is D.**

- 59.**



Check options.

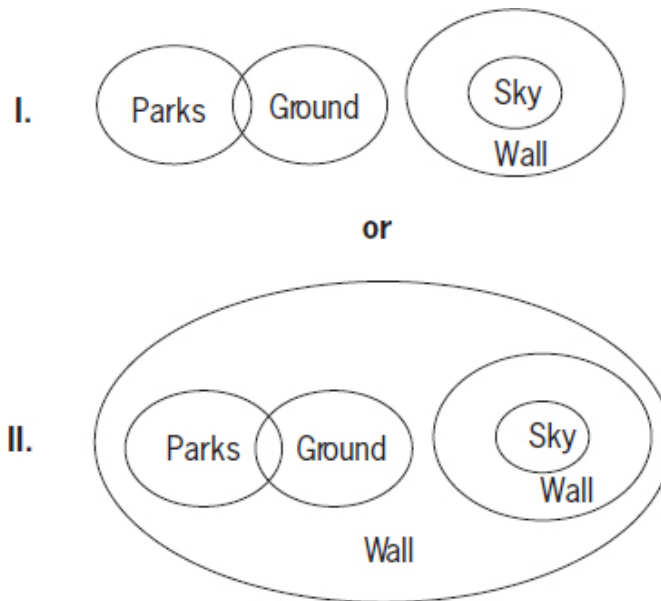
Option A: Some cars are trucks and all trucks are airplanes. So, some cars are airplanes. But it is not necessary that all cars are airplanes. So, A is not necessarily true.

Option B: Trucks and trains may or may not have anything common. So, “all trucks are trains” is not necessarily correct.

Option C: Some airplanes are trains also means some trains are airplanes, which includes the possibility that all trains are airplanes. So, C is a correct answer.

Option D: “No truck is a train” is a possibility. But, it is not necessarily true.

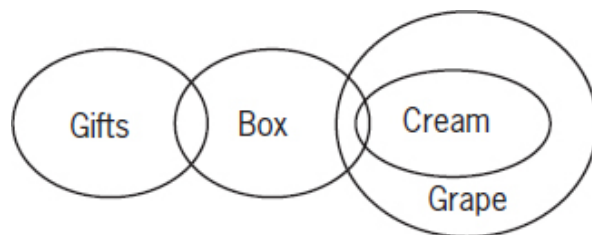
**The correct answer is C.**



As there is nothing said clearly about wall and park, so, either “some walls are park” or “No wall is a park” is possible but false individually. So, either I and III follows:

**The correct answer is A.**

**61.** The possible Venn-diagram is

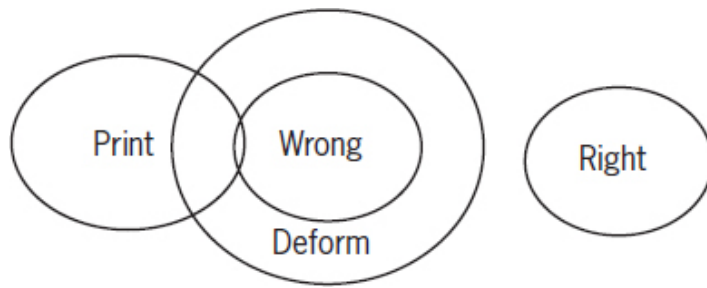


From the above venn diagram it is clear that the conclusion II “Some grapes are box” is true. As there is nothing said about cream and gift in the statements, so either “Some creams are gift” or “No cream is gift” is possible but false individually. So, either conclusion I or III and II follows.

**The correct answer is A.**

**62.** The possible Venn-diagram is:



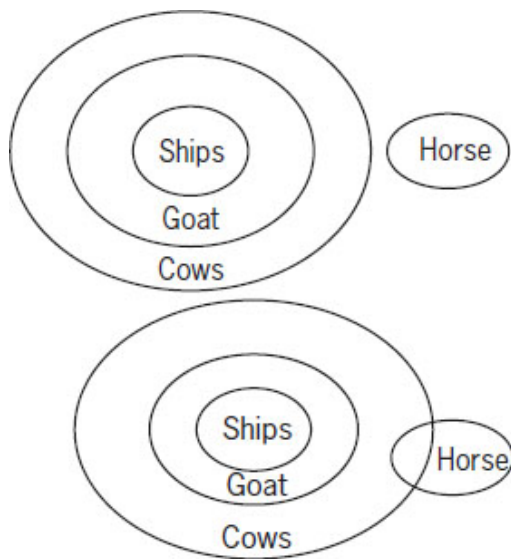


So, it is clear from diagram that conclusion I is true. But some print may be right or may not be right. So, conclusion II doesn't follow clearly from the above Venn diagram. Conclusion III follows.

But conclusion IV doesn't follow as "All" strongly shows "Completely without failure but as "Some deform are wrong" is true which is showing uncertainty of the extent of deform being wrong.

**The correct Answer is C.**

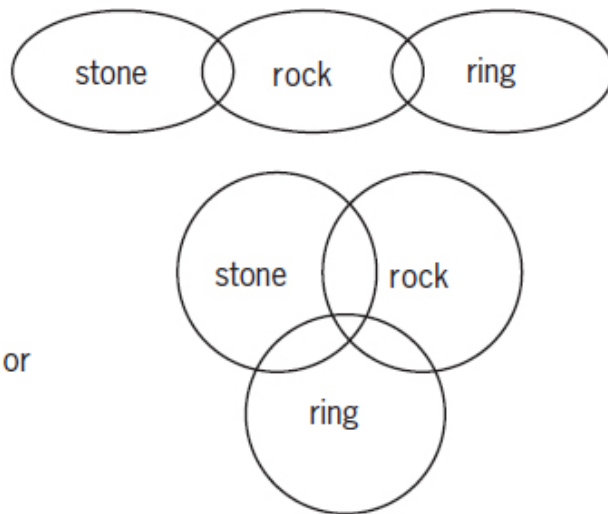
**63.** A possible Venn-diagram is



As No horse is goat, it is clear that there may or may not be some relation between cow and horse. So either conclusion I or conclusion II follows.

**The correct answer is C.**

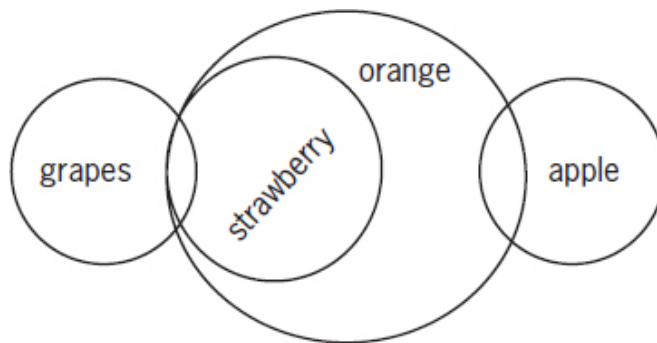
**64.** The possible Venn diagrams are



As, there is nothing is said about the relation of stone and ring, so either “Some stones are rings “ or “No stone is a ring “ but individually both are false. Again from the above Venn diagrams only conclusion II follows. That is, some stones are rocks.

**The correct answer is B.**

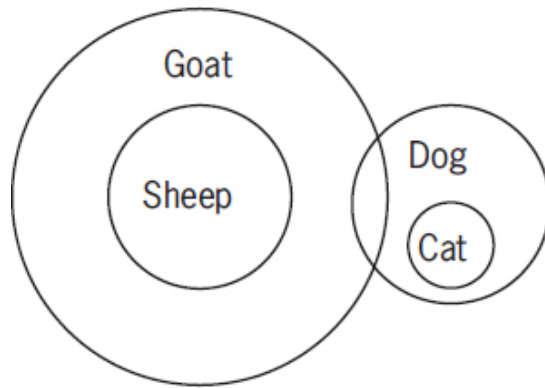
**65.** A possible Venn-diagram is



All strawberries may be Apples, but it is not necessarily true. Hence conclusion I does not follow. Since it is given that “some grapes are strawberries”, “some grapes are not strawberries” is not necessarily true, as it is quite possible that all grapes are strawberries.

**The correct Answer is D.**

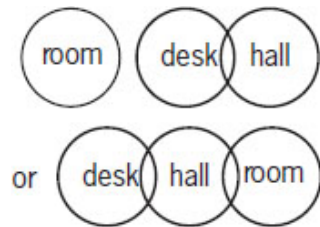
**66.** A possible Venn-diagram is



The relation between cat, sheep and goat is not clear from the above Venn-diagram. So, 'No cat is a sheep' and 'Some cats are goats' does not necessarily follow. Hence neither I nor II follows.

**The correct Answer is D**

**67.** A possible Venn-diagram is



As 'some' doesn't show the extent of certainty so conclusion I is wrong.

There is nothing said about hall and room so, conclusion II is wrong.

**The correct Answer is D.**