REASONING

Reasoning consists of two parts : Verbal and Non-Verbal. Change is the rule of nature. Some changes are effected in almost everything which has to grow, develop and survive. Survival of anything is very much dependent on the favourable changes effected in it. For the same reason, nature of questions, standard and pattern of questions etc. keep on changing in the course of time. The portion which is considered to be obsolete or out-dated (irrelevant) is replaced with the new and relevant portion.

The subject-matter and coverage of the Verbal section can be broadly organised under 14-15 major heads. However, this classification is not exclusive and it is generally observed that some of the questions can be classified under two or three heads reasonably. For instance, consider the examples given below:

Ex. 1. Four of the following five are alike in a certain way and hence form a group. Which is the one that does not belong to that group?

(1) DIG (2) HMK (3) KPN (4) OTR (5) RVT

❐ As per the format of the question the above example should be placed under the head Grouping/ Classifi-cation or Odd-Man Out but its substance is very much akin to that of Letter Series (English alphabet).

Ex. 2. If '+' means '÷', 'x' means '+', '–' means 'x' and '÷' means '–' then, what will be the value of 128+16–4x7÷7=?

(1) 41 (2) 34 (3) 31 (4) 44 (5) None of these

❐ The format of this question resembles the Symbols–Notations test but substantially it is very much akin to the mathematical problem.

VERBAL REASONING

The questions on Verbal Section are meant to test the reasoning ability or logical deduction ability of the candidates rather than intelligent quotient (IQ). Intelligence itself is a complex characteristic. No extra quality is needed for solving questions in Verbal Section. It is futile to develop a fear psychosis over such questions. Since questions are asked from diverse fields, it may be difficult to gain expertise over each and every type of questions. However, with comprehensive practice, one can certainly train the mind to acquire adequate skills to tackle a majority of these questions. Spend sufficient time in getting the crux of the problem before attempting the questions. Since most of the questions employ complicated and confusing language, it is prudent to use visual support for better and quicker understanding. Supposedly, one can draw a rough sketch to expedite the comprehension process. Getting the facts of the questions on paper may take a few more minutes but once the intricacies are well understood, answering becomes simpler and faster.

In reasoning questions, resorting to guess work or working backwards by eliminating the options may not always work. Try not to adopt these techniques since chances of success are slim. One may only end up misusing precious time.

Verbal Reasoning incorporates in itself the properties like skill in language and the capacity to infer something logically: reasoned thinking or reasoned conclusion which must be valid. The key to Verbal Reasoning is to arrive at thoughtful and logically convincing conclusion on the basis of information provided in the question itself. Though in few questions rules of logic are employed to work out the solution but a major chunk of questions requires proper and systematic approach which can be attained by developing the spirit of enquiry and thinking on the basis of something which can support your view beyond a reasonable doubt. The questions pertaining to analytical reasoning require the knowledge and understanding of some basic rules of logic while other types of questions can be solved by following step-wise procedure. However, the most important fact still remains unresolved? How can one solve all the questions correctly within the **ambit** of stipulated time? While discussing the way to solve most of such questions, we shall seek the answer to this basic question. In this context we come by the word **correctly** which evokes much sensation and commands extra consideration. The questions usually remain complex and options confusing or rather fairly close ; every option seems to be correct from one or the other point of view. But bare truth is that only one is correct in all the respects or that one is more preferable in comparison to others. In finding such an option a cautious approach consisting of systematic steps are needed. But again, that process may be lengthy one, which should not be stuck to for a quicker solution.

Taking into account all these facts and the difficulties which may come to fore while solving reasoning questions in the exam, we have prepared the present **Synopsis on Verbal Reasoning.**

The present Synopsis will show you how to start your preparation for reasoning test paper and also what is worth reading. The following discussion on Verbal Reasoning is a synopsis and as such it cannot be taken as a complete guide book. It is probable that you may get confused at any stage of the discussion or your spirit of enquiry may not be satisfied fully. We are aware of that fact and therefore, we cannot leave you in bewilderness as we are your true preceptors. Considering all your problems and difficulties we have brought about a comprehensive book titled KIRAN'S UP-TO DATE APPROACH TO BANK CLERICAL REASONING (VERBAL & NON-VERBAL) in which each chapter has been devised in such a way that you can gain expertise over every topic gradually and

at the same time you may be able to comprehend the quicker methods and other short-cuts. Each chapter has been dealt with in such a manner that the confusion area can be warded off completely. We have left no stone unturned while writing the texts and we hope, after going through the book your notion about the Verbal Reasoning will certainly transform and you can solve every type of questions quite comfortably.

The best approach to perform better in Verbal Reasoning section is to scrupulously follow instructions, identify the root of the problem and to work with a cool and cautious mind. Instead of rushing to answer choices one should ponder over the situation/question for a few seconds, develop an insight into what is being asked and then try to work out the question. There remains invariably one key aspect to every question which needs to be identified. The faster one can do it, the better it is.

Questions in Reasoning test paper are designed to be "speed brakers". Spending undue time on a single question may affect performance in other test papers. In case you feel the solution is evading you in a particular question, skip it and come back later, if time permits. Since some questions may be confusing and misleading in language, coming back to them with a fresh thought and a new approach may make the exercise much simpler and easy to solve. Do not ever get emotionally attached to a particular problem. On most occasions we make it an ego issue to solve a particular tricky question, but that does not help us given the stringent time constraints.

ALPHABET

Questions based on English alphabet are relatively easier and these questions may acquire different formats. In other words, various types of questions are set on English alphabet, such as:

(i) Formation of words using the specified letters of a keyword.

(ii) Questions on Alphabet Series and Alphabetical Quibble.

(iii) Pointing out the pairs of letters in a keyword which have as many letters between them in the word as in the alphabet.

(iv) Arrangement of words in alphabetical order.

(i) New Word Formation

In this type of questions you are required to form meaningful word(s) using the specified letters of a keyword using each letter only once. Thus, in this type of questions a key word is given and some letters of that word are singled out. With the help of those letters you are required to form a new meaningful word and then, point out the required letter of the word so formed. These questions, thus test your vocabulary. Generally, simple and common words are asked and, therefore, you can solve these questions easily. However, sufficient practice is necessary to save time.

(ii) Alphabet Series

In this type of questions a sequence of English alphabets (either individual letter series or a sequence of combination of letters) is provided, which are usually called TERMS of the sequence. All the terms in the sequence follow a certain pattern throughout the series. The candidates are required to recognise this pattern and either complete the series with most suitable alternative or find out the wrong term in the series. The questions based on English alphabets generally harp on the relative positions of alphabets. Therefore, you should remember the position (number) of each alphabet both from left to right and from right to left. If you do not know the position number of any alphabet from left to right, then you can determine its position in the reverse order of alphabets (i.e. from right to left) by subtracting that position number from 27. For instance, the position number of letter H is 8 in English alphabet if we count from left to right. Now you can easily find out its position number counting from your right. Its position number thus, in the reverse order would be 27–8 =19th. You can verify this fact by referring to the following illustration:

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

(iii) Relative Distance Between Pairs of Letters

In this type of questions you are required to ascertain the relative positions of letters of English alphabet and the relative distance between two letters in term of number of letters present in between the two letters in the keyword as well as in the English alphabet. Thus, you are required to find out such pairs of letters in the given word which do have as many letters between them in the word as in the alphabet.

(iv) Arrangement of Words in Alphabetical Order

In this type of questions, some words are given. The candidate is required to arrange them as per dictionary in order to answer the question asked. We know that in a dictionary the words are arranged in alphabetical order. Therefore., you must know the basics of the "Dictionary Usage". The words beginning with the same letter of English alphabet are again arranged in alphabetical order with respect to the second letter of words and so on. In order to solve such questions, first of all observe the first letter of each word. If the first letter is the same, observe the second letter and so on till you get the required arrangement of the words.

SERIES

A series or sequence consists of several terms. In other words, the units of a sequence are called TERMS. Each term in the series has its own importance as there exists certain relationship between the two consecutive terms. All the terms in the sequence follow a certain pattern throughout the sequence in most cases. We come across several types of questions based on any given series. In order to solve such questions you must recognise the pattern of the given series. The questions based on

English alphabet series are somewhat easy as you can remember the position of each alphabet readily. But in the case of mixed series or jumbled series, it is very difficult to remember the position of each term.

A mixed series comprises letters, numbers and symbols and unlike the English alphabet series the number of terms is not fixed in such series. A mixed series may contain any number of terms viz. 23, 24, 26, 28, 30, 31 or 32. Such questions require sufficient practice as there is no definite SHORT CUTS for these questions. The questions on mixed series can be divided into two major heads :

I. Series of letters and numbers, and

II. Series of letters, numbers and symbols.

Questions on mixed series tend to judge how quickly you can identify the relationship amongst the given terms (letters, numbers and symbols). Such questions can be solved quickly by counting the terms very fast.

Some Important Tips

(i) First of all, count the terms in the given series.

(ii) Pin-point the middle term, if any.

(iii) Write down the total number of letters, numbers and symbols respectively.

(iv) Form the groups of five terms, counting from either end so that you can recognise the position of the required term quickly.

ANALOGY

Usually two to three questions are asked in Bank Clerk Examinations from Verbal Analogy in addition to questions on Non-Verbal Analogy. Analogy is an important section of Reasoning because it is the section through which examiners test the candidate's ability to compare and establish proper relationship among the given items on the basis of certain commonality. In case of question on Non-Verbal Analogy, it is very easy to recognise the common features between the given figures owing to certain limitations. Figures may have similar movement, rotation, orientation, shape, size, etc. and if you are able to observe these features you can select appropriate answer quickly. But in case of question on Verbal Analogy it is not possible to delimit the types of relationship which might exist between the given items. Apart from common types of relationship, sometimes unusual type of relationship is provided in the questions. Therefore, the chapter on Analogy is aimed not only at testing your reasoning ability but also overall knowledge, IQ, as well as the power of decision making.

The word ANALOGY has been derived from two words taken together : ANA means "Relation" and LOGUS means "Knowledge". The word ANALOGY is a Noun which literally means (i) a similar feature, condition, state etc. shared by two things that are compared and (ii) a process of reasoning based on similar feature of two things. Thus, Analogy means "similar feature","a common feature" or "correspon-dence". Questions on Verbal Analogy judge your ability to understand the diverse relationship between various elements, things, phenomena, acts, terms, etc. in their proper context. Such questions are aimed at testing the candidate's overall knowledge, power of reasoning and the ability to think conclusively and logically. A candidate can develop and improve his ability to judge conclusively through sufficient practice and awareness.

Questions on Analogy cover almost all types of relationship or commonality that one can think of and which we generally observe in our day-to-day life. Some common types of relationship which frequently appear in the Examinations have been listed below:

1. STATE AND CAPITAL RELATIONSHIP
2. COUNTRY AND CURRENCY RELATIONSHIP
3. COUNTRY AND NAME OF THE PARLIAMENT
4. COUNTRY AND ITS NATIONAL GAMES/SPORTS
5. SEX RELATIONSHIP (MALE AND FEMALE)
6. ANIMAL & YOUNG ONE RELATIONSHIP
7. ANIMAL AND ITS INDIVIDUAL TRAIT
8. ANIMAL AND ITS HABITAT RELATIONSHIP
9. WORKER AND WORKING PLACE RELATIONSHIP
10. TOOL AND ACTION RELATIONSHIP
11. RAW MATERIAL AND PRODUCT RELATIONSHIP
12. WORKER AND TOOL RELATIONSHIP
13. TERM AND ITS SUBJECT-MATTER
14. MATTER AND ITS STATE RELATIONSHIP
15. INSTRUMENT AND MEASUREMENT RELATIONSHIP
16. QUANTITY AND UNIT RELATIONSHIP
17. WORKER AND PRODUCT RELATIONSHIP
18. WORD AND ITS SYNONYM RELATIONSHIP
19. WORD AND ITS ANTONYM-RELATIONSHIP
20. PART AND WHOLE RELATIONSHIP
21. WORD AND INTENSITY RELATIONSHIP
22. COUNTRY AND NATIONAL EMBLEM RELATIONSHIP
23. DISEASE AND CAUSATIVE ORGANISM
24. ALPHABET ANALOGY
25. MISCELLANEOUS RELATIONSHIP

CLASSIFICATION

CLASSIFICATION means "to assort the items of a given group on the basis of certain common quality they possess and then spot the odd one out". In this way, questions on Classification are not much different from those of the questions on Analogy. The difference between these two types of questions lies only in the way of selecting the answer. In case of questions on Analogy you are required to select the item which bears similar relationship as that given in the question. But in the case of questions on Classification you are required to assort the items which have some common quality and then spot the one and only one item which lacks that common quality. Thus, in the case of questions on Classification also you are required to determine diverse relation-

ships which possibly can exist between various elements, things, phenomena, acts and terms.

In this type of questions, you are provided with a group of five items, one of which shows different property while the rest are related to one another in a certain way or they bear certain common characteristics. Your task is to select the item which does not belong to the group of other items.

CODING-DECODING

A CODE is "a system of signals". Coding is, therefore, a method of transmitting a message between the sender and the receiver which third person cannot understand or comprehend. The coded message can be deciphered or decoded by the receiver as he/she knows the rule/method which was employed in encoding the message. Thus, the CODING-DECODING test is given to judge the candidate's ability to decipher the rule which is applied for coding a particular message and break the code to reveal the message. In this type of questions some words or a group of letters and their coded forms are provided and you are required to find out the rule of coding so that you can either encode or decode another word or another group of letters in similar fashion. Any word/message/a group of letters can be coded in a variety of ways. Generally, each question is based on a particular rule of coding. Therefore, clues of a particular question are not applicable to the other questions.

We have already mentioned that several types of questions can be asked on Coding-Decoding. Each type of questions has its own coding pattern. The coding pattern may be based on individual alphabet/words and digits/numbers. The code of a particular letter could be following or preceding letter, the letters of a meaningful word can be jumbled to generate code and so on.

BLOOD RELATIONSHIP

Questions on Blood Relationship are related to our day to day life. We are bound by our kith and kin through a chain of relationship. The examiner defines the simple relationships by using rather complicated set of definitions and expects from us to comprehend these definitions rather quickly. In order to solve these problems, analyse the given statements carefully and systematically. For examples :

(i) My father's only child means ⇒ I (Myself).

(ii) Ritu's husband's father-in-law's only daughter means ⇒ Ritu (Herself).

Pay particular attention to the information given in the question itself without your personal biases and pre-conceived notions and assumptions coming to the fore. Questions on Blood Relationship can be solved by any of the following methods :

(i) Deduction Method and

(ii) Pictorial Method

While attempting questions on Blood Relationship, first read all the pieces of information as quickly as possible and then point out the two persons between whom relationship is to be established. Finally, try to correlate the given relationships. While concluding relationship between two persons be careful about the sexes of the persons involved. Majority of the students tend to define or derive relationship without caring for sex of the persons. **Is it possible to define relationship between two persons without knowing their sex?** Consider the following illustration :

A is the child of P and Q.

From this statement can we conclude that P is the father of A. No, it is not possible. Without knowing the sex of either P or Q, it is not possible to conclude that P is the father of A. What we can conclude from the above statement is that 'P and Q are parents of A'.

Thus, we see that the knowledge about the sex of persons is necessary to conclude relationship between the two persons.

Some Important Tips

(i) First of all choose the two persons, between whom relationship is to be established.

(ii) Next, pin-point the intermediate relationship i.e., such relationship through which long drawn relationship can be established between the required persons.

(iii) Finally, conclude the relationship directly between the two persons as per the requirement of the question.

SYMBOLS & NOTATIONS

In such type of questions some relationships are shown with the help of certain symbols/notations and/or mathematical signs. Each symbol or sign is defined clearly in the question statements itself. In other words, each symbol or sign is accorded two values-one real value and another assigned value. You are required to put the assigned value of each symbol or sign and then solve the questions accordingly. For example.

Suppose the triangle (Δ) means addition.

We know that triangle is a plane figure but here it has been assigned the value of addition (+). Thus.

$3 \Delta 5 \Rightarrow 3 + 5 = 8$

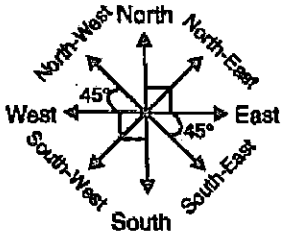
In this way, to work out such questions substitute the assigned/implied meanings of the symbol or sign and proceed accordingly.

DISTANCE & DIRECTION

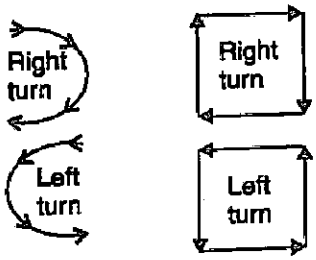
In almost all the Multiple-Choice-Type Examinations a few questions pertaining to Distance and/or Direction are asked regularly and Bank P.O. Examination is not an exception. In this type of questions a successive follow-up of directions and/or distance is formulated and on the basis of given information you are required to ascertain the final direction with respect to the starting point or the shortest distance between the starting point and the final point. Sometimes both the final direction and the distance covered are asked. Thus, in this test, the questions consists of a sort of direction and/or distance puzzle. Obviously, such questions are meant to judge the candidate's ability to trace, follow and perceive the direction, described in somewhat complicated language, correctly. In order to solve such questions correctly you must have the knowledge of directions on the plane of a paper. At the same time, it is necessary to sketch out the directions as

per the information provided in the question in proper sequence. An error at any point would alter your answer choice.

The diagram given below shows the four main directions (cardinals) and the four subidiary directions on a plane of paper :



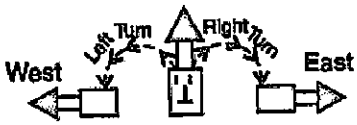
Generally right and left turns are frequently employed in the questions in order to confuse the candidates. Remember that examiner does possess the uncanny knack and he/she may confuse you by making verbose statements also. But, there is nothing to panic. You may note that on the surface of paper, the direction of right turn is always clockwise and that of left turn is anticlockwise. Thus,



Now try to comprehend the following deductions :

(i) A person facing towards North, on taking left turn will face towards West and on taking the right turn towards East.

Left turn means anticlockwise rotation and right turn means clockwise rotation. Thus,



(ii) A person facing towards South, on taking left turn will face towards East and on taking right turn towards West.

(iii) A person facing towards East, on taking left turn will face towards North and on taking right turn towards South.

(iv) A person facing towards West, on taking left turn will face towards South and on taking right turn towards North.

(v) A person facing towards North-West, on taking left turn will face towards South-West and on taking right turn will face towards North-East.

(vi) A person facing towards South-West on taking left turn will face towards South-East and on taking right turn towards North-West.

(vii) A person facing towards South-East, on taking left turn will face towards North-East and on taking right turn towards South-West.

(viii) A person facing towards North-East, on taking left turn will face towards North-West and on taking right turn towards South-East.

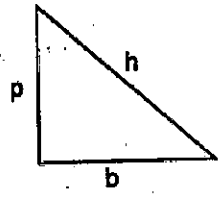
In order to determine the distance travelled or the shortest straight distance between the two given points, the Pythagorus formula

$h^2 = b^2 + p^2$ proves to be helpful.

Here, h = Hypotenuse

p = Perpendicular

b = Base



SCHEDULE DAY/ DATE/TIME

In this type of questions somewhat complicated, vague and apparently incomplete information regarding particular day/date of certain event or schedule time for departure/arrival of bus or train is given. The information is given usually in the form of statements made by two or three persons expressing the same idea differently. You are required to ascertain the exact day/date or time by co-relating the pieces of information provided in the question statement (s). Basically, this type of questions requires the ability to infer something conclusively on the basis of whatever information is available. In order to solve such questions you must have knowledge about the number of days a normal year or leap year usually contains. You should have knowledge of the number of days included in every month.

The questions which require determining the time schedule are not much different from that of day/date type of questions. If we proceed step-by-step co-relating the given pieces of information and deriving conclusions from them, we can easily ascertain the required time schedule.

The normal year consists of 365 days. The difference between a normal year and a solar year is, therefore, 0.2422 of a day and we take account of it by adding a whole day to every fourth year. Consequently, in every fourth year there are 366 days (one extra day + 365 days). The year which has the extra day is called **Leap Year**. The extra day is added to the end of February and is called the 29th of February.

FACTS TO BE REMEMBERED

□ In a normal year there are 365 days i.e., 52 weeks + 1 day

Therefore, a normal year contains 1 odd day.

□ A Leep Year contains 2 odd days.

366 days → 52 weeks + 2 days.

□ 100 Years = 76 normal years + 24 leap years = 76 odd days + 24 × 2 odd days = 124 odd days = 17 weeks + 5 days.

Therefore, 100 years contain 5 odd days.

□ 200 years contain 3 odd days and 300 years contain 1 odd day.

□ Since there are 5 odd days in 100 years, there will be 20 (extra) days in 400 years. But every 4th century is a leap year. It implies that 400 years contain 20 + 1 = 21 days. That is, 400 years contain no odd day.

□ First January 01AD was Monday. Therefore, we must count days from Sunday, i.e., Sunday for 0 odd day, Monday for 1 odd day, Tuesday for 2 odd days and so on.

□ Last day of a century cannot be either Tuesday, Thursday or Saturday.

□ The first day of a century must either be Monday, Tuesday, Thursday or Saturday.

RANKING/ ARRANGEMENT

In this type of questions a set of information pertaining to persons, objects or some other entities alongwith their qualities, which can be compared, is provided. Candidates are required to arrange the given entities in either ascending or descending order on the basis of relative quality. At first look, such questions appear to be very simple but sometimes these are made tricky by infusing intricacies and complicated data. However, one can organise the given data quickly and easily by comprehending the given information in systematic manner. Sometimes, the given information may seem to be insufficient but a cogent and coherent analysis of the same reveals useful clues and the problem turns to be very simple. You may also find some superfluous statements, which are given to confuse you. You can recognise such statements in no time if you have gained command over such types of questions.

Sometimes you are required to ascertain only the rank of a person either from top or bottom in a class or a group of persons. In determining the rank, the information about total number of persons in the class or a group is a pre-requisite otherwise you cannot determine the rank. Sometimes the rank of a person from either end is given and you are required to calculate the total number of persons.

PASSWORD

Questions pertaining to PASSWORD or CODEWORD were introduced in the Bank Clerical Examinations in the year 1998 for the first time. Such questions can be regarded as the prototype of the questions on INPUT which are asked in Bank P.O. Examinations. The questions on INPUT are solved by organising the given input line of words or numbers step-by-step by following a specific rule to arrive at the final step. Thus, in order to solve such questions first of all detect the rule of arrangement of words or numbers in each step. If you can detect the rule of arrangement, the questions based on INPUT become very easy. However, there is no fixed number of rules involved in these questions. Every set of questions follows a specific rule. Usually, the words of input line are arranged in the following manner:

(i) alphabetically or as per dictionary and

(ii) interchanging the positions of the words.

The same principle is followed in questions on PASSWORD. But here you are required to ascertain the Password in only one step directly from the input line of words. The password is generated by rearranging the words of input line. Such questions tend to judge how quickly you can recognise the rule applied in arriving at the password from the given input line of words. Once you recognise the rule, , such questions become very easy. Thus, your main task is to recognise the rule of arrangement of words.

SYLLOGISM

Syllogism is a Noun which means "form of reasoning in which a conclasion is drawn from two statements, i.e., deductive reasoning. In more clear terms, **Syllogism** is a mediate deductive inference in which two propositions are given in such an order that they jointly or collectively imply the third. Thus, **Syllogism** can be defined as "a form of reasoning in which the conclusion establishes a relation between two terms on the basis of both terms being related to the same third term as derived in the premises". For example,

1. All human beings are mortal.
2. The child is a human being.
3. The child is mortal.

The conclusion is reached through the medium of a middle term, i.e., "human being", with both Subject (children) and the Predicate (mortal). Therefore, in a Syllogism two premises are necessary to arrive at a conclusion.

Proposition

A Proposition is the statement of a certain relation between two terms. The Proposition consists of three parts—two terms and the sign of relation between them : (a) the Subject, (b) the Predicate and (c) the Copula.

The ***Subject*** of the Proposition is the term, about which something is stated, i.e., affirmed or denied.

The ***Predicate*** is that part of proposition, which is stated about the Subject, i.e., affirmed or denied about the Subject.

The ***Copula*** is that part of the Proposition which denotes the relation between the Subject and the Predicate.

There are four types of Propositions :

(i) Categorical Proposition

(ii) Hypothetical Proposition

(iii) Disjunctive Proposition and

(iv) Relational Proposition

A Categorical Proposition makes a direct assertion. It asserts something directly without any condition. The Predicate is either affirmed or denied unconditionally. Thus, in this type of Proposition, Predicative term is either affirmed or denied. For example,

(i) All bats are balls.

(ii) Man is mortal.

(iii) Man is not a dog.

In the second Proposition the Predicate "mortal" is affirmed about the Subject "Man". In the third Proposition the Predicate is denied.

In Syllogism, we are concerned about only Categorical Propositions.Therefore, we are going to elaborate only Categorical Proposi-tions in the following discussion. Categorical Propositions can be analysed as assertions about classes, affirming or denying that a class **S** is included in class **P**, either in whole or in part. Broadly speaking there are two major forms of Categorical Propositions :

1. Universal Categorical Proposition and

2. Particular Categorical Proposition

1. Universal Proposition : Universal Propositions either fully include

or fully exclude the Subject. For example.

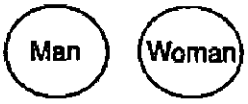
I. All politicians are liars.

It is denoted by capital letter **A.**

Here, the inclusion of members of a class into another class is complete and hence universal.

II. No man is woman.

It is denoted by capital letter **E.**

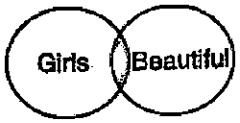


Here, one class is completely excluded from the second.

2. Particular Proposition : Particular Propositions either only partly include or only partly exclude the Subject while making a statement. Thus, in this type of Propositions the Subjective term refers to **less than all.** For example,

I. Some girls are beautiful.

It is denoted by capital letter **I.**



The Proposition stands for only the shaded portion.

II. Some politicians are not liars.

It is denoted by capital letter **O.**

Distribution of Terms

The word "Distribution" is meant to characterise the ways in which terms can occur in Categorical Propositions. A Proposition distributes a term if it refers to all members of the class designated by the term. In other words, if a term refers to all the members of the class for which it stands, it is said to be distributed term.

Propositions	Distribution of Term	
	Subject	Predicate
A-Proposition (Universal) Affirmative)	Distributed	Not Distributed
E-Proposition (Universal Negative)	Distributed	Distributed
I-Proposition (Particular Affirmative)	Not Distributed	Not Distributed
O-Proposition (Particular Negative)	Not Distributed	Distributed

Analytical Method for Deriving Conclusion

Analytical Method for deriving valid Conclusions (rather say determining the validity of a Categorical Argument) consists of following simple steps :

Step I : Alignment of the Premises : It is well known that if there is no Middle Term, no Conclusion follows. Therefore, in the given Premises there should be a common term. By alignment of the Premises we mean that the two Premises should be written in such a way that the common term (M) is the Predicate of the first Premise and it is the Subject of the second Premise.

If the given Premises are not already aligned, we can align them by :

(i) changing the order of the Premises and/or

(ii) converting one of the Premises.

FORMAT OF THE CONCLUSION

While deriving Conclusion by referring to the above chart, it is important to note the format of the Conclusion.

I. The Subject of the Conclusion should be the Subject of the first Premise and the Predicate of the Conclusion should be the Predicate of the second Premise (after alignment). For example :

Premises :

(1) All **girls** are dancers.

S_1

(2) No dancer is **singer**

P_2

Conclusion : No girl is singer.

Explanation : The given Premises are already aligned.

From the chart :

A + E → E-type Conclusion.

Thus, according to the format of the conclusion.

No **girl** is **singer.**

S_1 P_2

II. In the case of O_1 type Conclusion, the Subject of the Conclusion is the Predicate of the second Premise and the Predicate of the Conclusion is the Subject of the first Premise.

For example :

Ex. 1. Premises :

(1) No **book** is pencil.

S_1

(2) Some pencils are **copies.**

P_2

Explanation : The given Premises are already aligned.

From the chart

E + I → O_1 type Conclusion.

Conclusion according to the format

Some **copies** are not **books.**

P_2 S_1

Step III : To Check Immediate Inference : After determining the validity of given Conclusions, check for any immediate inferences—Conversion and/or Implication.

Step IV : Evaluate Complementary Pair : This Step is applicable to only those Conclusions which do not follow from Steps II and III. If one of the Conclusions has already been found to be valid in Step II or III, this Step is not required, if there are only two Conclusions.

Two Propositions made a Complementary Pair, if :

(i) both of them have the same Subject and the same Predicate and

(ii) there are an I-O type pair or an A-O type pair or an I-E type pair.

For example :

I → Some books are pens

O → Some books are not pens *(Complementary pair)*

A → All boys are players

O → Some boys are not players *(Complementary pair)*

I → Some girls are dancers

E → No girl is dancer. *(Complementary pair)*

Remember that in a Complementary Pair at least one of the Conclusions is always true and therefore if you find a Complementary pair, then mark the choice "*either I or II* follows" to be true.

PROBLEM SOLVING

In this kind of questions the Problem situation is presented as a group of more or less unrelated data or information and a specific question or group of questions is posed, the answers to which will constitute the solution to the problem. There is a good deal of plausibility in some of these puzzle type questions. From such information or data a person having the instinct of inquiry can produce an intelligible inferences and thus, can unleash a series of information. Examining and re-examining the Problem situation from every point of view, marshalling all the relevant information that is available and seeking as persistently as we can, for some new insight into the problem by co-relating unorganised data, we can produce a systematic and useful information. On the basis of information given and inferences derived conclusively from them, we can answer the questions correctly.

MISCELLANEOUS

In addition to above mentioned types some other types of questions are also asked in Bank Clerical Exams. But such questions do not mark their presence regularly, and hence we would like to discuss such topics under the head MISCELLANEOUS. In order to assert its uniqueness or to show its particular trait each Banking Service Recruitment Board tends to include one or more questions on somewhat unfamiliar topics. Consider the topics given below :

VENN-DIAGRAM

Ex. 1. Which one of the following venn-diagrams best represents the relationship among Brinjal, Tomato and Vegetable?

(1) 

(2) 

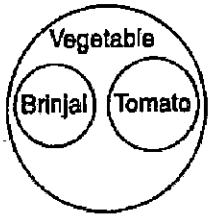
(3) 

(4) 

(5) 

Answer : (3)

Brinjal is different from Tomato but both are included in the class, Vegetable.



DATA SUFFICIENCY

A typical **Data Sufficiency** question contains a problem followed by two statements numbered I and II (sometimes three) containing certain data or information which may be required for solving the given problem. You are required to determine whether the problem can be solved with the help of the data provided in the first statement and/or the second statement. Thus, questions on Data Sufficiency are meant to judge the candidates' ability to determine the information necessary to solve a given question (rather than actual solution of the same). Therefore, it is the test of skill.

The candidates must be able to determine the "minimum" information required for solving the question so that you may arrive at the most appropriate answer choice. Apart from the information given in the question and the statements, nothing should be taken for granted. You are not to assume anything beyond the information given in the question and the following statements.

Questions on Data Sufficiency may be asked from any topics of the General Intelligence or Critical Reasoning such as Ranking/Arrangement, Coding-Decoding, Blood Relationship, Age Problems, Distance and Direction Test, Mathematical Problems and so on. However, these questions are asked in a different format and as such, somewhat different approach is required to solve the questions on Data Sufficiency.

FORMAT OF THE QUESTIONS

Directions : *Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and*

Give answer (1) : if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

Give answer (2) : if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

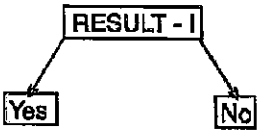
Give answer (3) : if the data either in statement I alone or in statement II alone are sufficient to answer the question.

Give answer (4) : if the data even in both statements I and II together are not sufficient to answer the question.

Give answer (5) : if the data in both statements I and II together are necessary to answer the question.

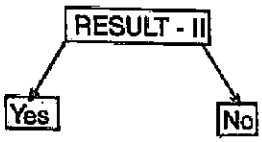
By looking at the format of the question on Data Sufficiency, it is prudent to follow the steps given below while solving such question :

Step I : Examine whether statement I alone is sufficient to answer the question.



In both the cases, move to step II.

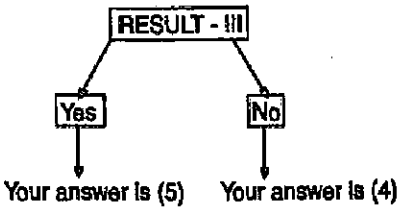
Step II : Examine whether statement II alone is sufficient to answer the question.



Step III : Try to arrive at the answer with the help of results obtained in Step I and Step II, if possible.

Result I	Result II	Inference
Yes	Yes	Your answer is (3)
Yes	No	Your answer is (1)
No	Yes	Your answer is (2)
No	No	Move to Step IV

Step IV : Examine whether both the statements together are sufficient to answer the question.



NON-VERBAL REASONING

Non-Verbal Section is a part of Abstract Reasoning. Here, verbal language is no more used. In this section of reasoning neither language nor any kind of detailed description is used. This section is meant to test your ability to argue, reasoning and thinking so that you can arrive at a valid conclusion with the help of different kinds of figures. Therefore, the purpose of this test is to find how well you understand the ideas which are not presented in words or numbers; how well you think out the problems even when there are no words to give any clue. Every man has a different level of logical and intellectual power. But more important is the ability of an individual; the ability to use his intellect and reasoning power. In this context, it should be remembered that more a person uses his reasoning ability, the higher is his level of intellect. Here, only one fact is of importance-a person's thinking and logic should be in the right direction, because once a person starts thinking in the wrong direction, his senses and intellect force him forward in the wrong direction leading to irrelevant, ineffective and useless conclusion.

Every candidate considers this section of reasoning ability to be very tough as neither word nor numeral nor any descriptive language (save Directions) is used in such questions. This section is meant to test the qualities like logical reasoning, thinking ability, ability to identify similarity and difference, identify the pattern of figures and come to a conclusion quickly on the basis of given figures, pattern and symbols. What is important in solving the questions on Non-Verbal Reasoning is to follow a logical procedure in the mind. This inherent logical procedure will help you to find out the principle on which the problem figure, i.e, the question is based.

Usually, the questions on Non-Verbal Reasoning involve the following three principles :

1. Principle of Series
2. Principle of Analogy and
3. Principle of Classification.

The above mentioned three principles are considered to be at the core of Non-Verbal Section. Different types of questions on non-verbal reasoning are mere various manifestations of these three principles.

If we take into account all types of objective-type exams generally the following topics are covered under the Non-Verbal Section :

1. Series
2. Analogy
3. Classification
4. Paper Folding, Cutting and Pieces of Paper
5. Water Image and Mirror Image
6. Completion of Figural Pattern
7. Embedded Figure
8. Deviation of Figures
9. Geometrical Designs

and so on.

However, in Bank P.O. Exams. questions relate to Series, Analogy, Classification and Finding the Missing Figure in the Series.

FUNDAMENTAL FACTS

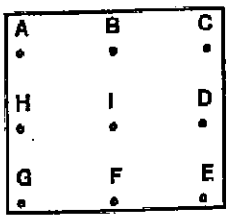
While solving the questions on Non-Verbal reasoning you must keep in mind the following points :

(i) First of all detect the main design and other secondary components,

(ii) Have on acute vision on : (a) rotation, (b) angular movement, (c) repetition, (d) reverse, (e) linear movement, (f) mirror image and (g) water image of the designs.

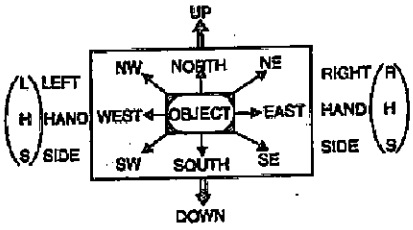
(iii) Observe addition, deletion etc. of designs.

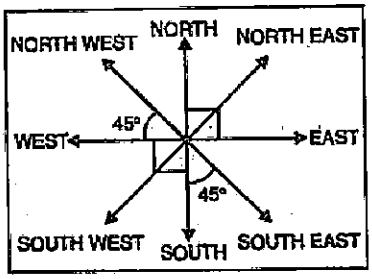
Generally, all the elements of a unit figure remain enclosed in a square box.



1. DIRECTIONS

Geographically speaking there are four main (cardinal) directions—**North, South, East** and **West** and four subsidiary directions—**North-East, North-West, South-East** and **South-West;** while **Up** and **Down** are also known as directions.





2. MOVEMENT, DEVIATION & REVOLUTION

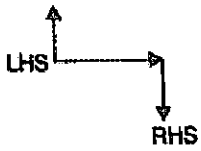
There are different ways in which objects move. The movement or deviation of figures, line segments, diagrams, symbols, designs etc. can be shown as follows :

(i) LHS ⟶ RHS And

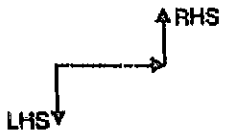
LHS ⟵ RHS

(ii) UP - DOWN And UP - DOWN

(iii) LHS UP ⟶ RHS DOWN

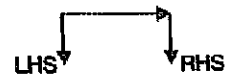


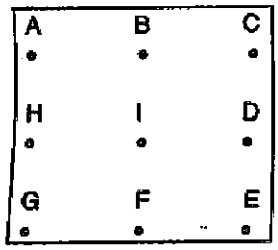
(iv) LHS DOWN ⟶ RHS UP



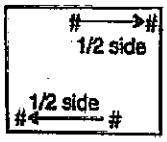
(v) LHS UP ⟶ RHS UP

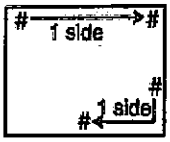
(vi) LHS DOWN ⟶ RHS DOWN





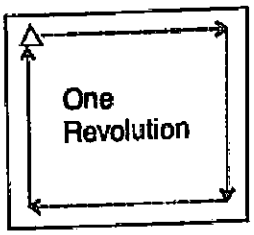
If an element moves from A to B, it is said that the element has covered a distance equivalent to half a side or step (½ side or step). Similarly, if an element moves from C to D, it covers half a side. On the other hand, if an element moves from A to C or D to F in clockwise direction, it is said that the element has covered a distance equivalent to one side or step. Thus,



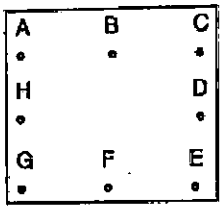


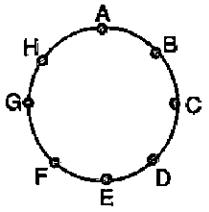
Measurement of Distance

When a body makes linear movement it travels a certain distance with certain velocity within a certain time. But in the case of non-verbal series an element covers a certain distance while moving unidirectional or being deviated forward or backward and it completes a revolution when it comes back to the initial position. Thus,



While considering the movement of an element from one position to another it is necessary to take into account the successive steps the element has covered, which is termed as the **Counting of Steps.**





When an element moves from A to B in clockwise direction, the distance covered is said to be half a step. Thus,

Movement of an element in clockwise direction :

A to B → $\frac{1}{2}$ Step;

A to C → 1 Step;

A to D → $1\frac{1}{2}$ Steps ;

A to E → 2 Steps

A to F → $2\frac{1}{2}$ Steps;

A to G → 3 Steps;

A to H → $3\frac{1}{2}$ Steps ;

A to A → 4 Steps

Similarly, we can count the number of steps when an element moves in anticlockwise direction.

Thus, it is necessary to know the number of steps involved when an element moves in a certain direction. An element moves ahead only with definite steps while showing its organised movement. Generally, an element moves in the following proportion of steps :

(1) 1 : 1 : 1 : 1 : 1 .....

(2) 2 : 2 : 2 : 2 : 2 .....

(3) 3 : 3 : 3 : 3 : 3 .....

(4) 4 : 4 : 4 : 4 : 4 .....

(5) 1 : 2 : 1 : 2 : 1: 2 .....

(6) 1 : 2 : 3 : 1 : 2 : 3 .....

(7) 1 : 2 : 3 : 4 : 1 .....

(8) 1 : 3 : 1 : 3 : 1: 3 .....

(9) $1 : \frac{1}{2} : 1 : \frac{1}{2} : 1$ .....

(10) $1 : 1\frac{1}{2} : 1 : 1\frac{1}{2} : 1$ .....

(11) $1 : 2\frac{1}{2} : 1 : 2\frac{1}{2} : 1$ .....

(12) $\frac{1}{2} : 1 : \frac{1}{2} : 1$ .....

(13) $1 : 1\frac{1}{2} : 2 : 2\frac{1}{2} : 3$ .....

(14) $\frac{1}{2} : 1 : 1\frac{1}{2} : 2 : 2\frac{1}{2}$ .....

(15) $\frac{1}{2} : 1 : 1\frac{1}{2} : \frac{1}{2} :$

$1 : 1\frac{1}{2}$ .....

(16) $\frac{1}{2} : 1 : 1\frac{1}{2} : 2 : 1\frac{1}{2} :$

$1 : \frac{1}{2}$ ...

(17) 1 : 1 : 2 : 2 : 3 : 3 .....

(18) 1 : 1 : 1 : 2 : 2 : 2 .....

(19) 1 : 1 : 1 : 3 : 3 : 3 .....

(20) 2 : 3 : 2 : 3 : 2 : 3 .....

(21) 3 : 3 : 3 : 1 : 1 : 1 .....

(22) 3 : 3 : 2 : 2 : 1 : 1 .....

(23) 1 : 1 : 4 : 4 : 1 : 1 .....

(24) 1 : 1 : 1 : 4 : 4 : 4 .....

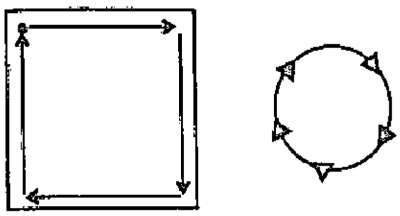
(25) $\frac{1}{2} : 1\frac{1}{2} : 2\frac{1}{2} : \frac{1}{2} : 1\frac{1}{2} : 2\frac{1}{2}$.....

In this way, the number of elements increases, decreases or remains constant while showing movement according to above mentioned pattern. Generally, the repetition of movement of elements takes place in the definite order or proportion as explained above.

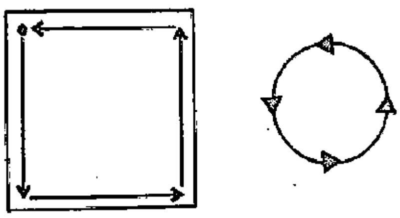
3. ROTATION

An element can be rotated on its axis or around a point only in two directions : Clockwise or Anticlockwise. The following diagrams exhibit the rotation of an element both clockwise and anticlockwise :

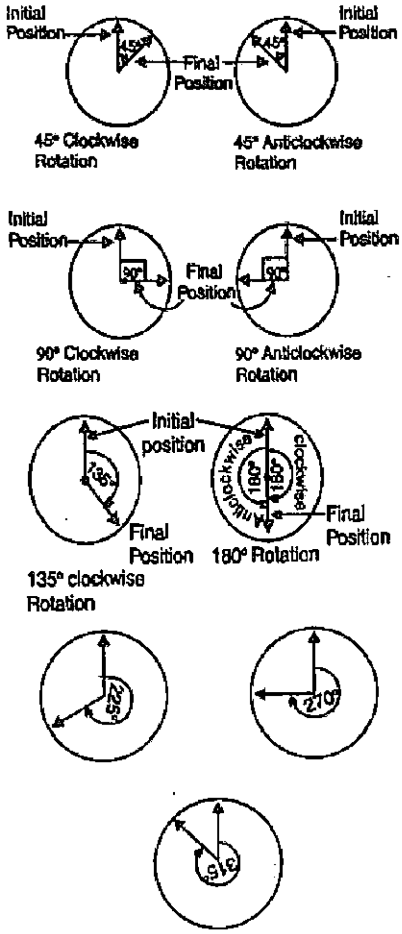
Clockwise Rotation



Anticlockwise Rotation



MEASUREMENT OF ANGLES



REMEMBER THAT

45° Clockwise Rotation	= 315° Anticlockwise Rotation
90° Clockwise Rotation	= 270° Anticlockwise Rotation
135° Clockwise Rotation	= 225° Anticlockwise Rotation
225° Clockwise Rotation	= 135° Anticlockwise Rotation
270° Clockwise Rotation	= 90° Anticlockwise Rotation
315° Clockwise Rotation	= 45° Anticlockwise Rotation

Clockwise Rotation in Degrees = 360° – Anticlockwise Rotation in Degrees

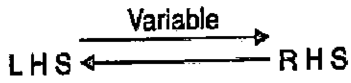
The design moves in a certain direction with making a definite rotation and sometimes assumes a new form as well. Most of the designs rotate through 45°, 90° and 180°. Some common orders of rotation of the designs have been listed below :

(1) 45°,45°,45°,45° ....
(2) 45°,90°,45°,90° ....
(3) 45°,90°,180°,45° ....
(4) 45°,90°,135°,180°, 225° ....
(5) 45°,180°,45°,180° ....
(6) 45°,135°,45°,135° ....
(7) 90°,90°,90°,90° ....
(8) 90°,180°,90°,180° ....
(9) 45°, 45°,90°,45°,45° ....
(10) 90°,180°,180°,90°,180° ....
(11) 45°,90°,135°,180°,135° ......
(12) 45°,90°,135°,180°,45° ....
(13) 45°,45°,90°,90°,45°,45° .....
(14) 0°,180°,90°, 0°, 180°,90° ....
(15) 90°,45°,90°,45° .... and so on.

While making a movement an element always rotates according to above mentioned order.

4. MIRROR IMAGE

If you can recognise the mirror image of a design, you can save your valuable time while observing the movement, rotation etc. of a design in a figure series. In a mirror image, the right part of an object appears at the left side and vice-versa, while the upper and lower parts remain constant.



But,

DIGITS	1	2	3	4	5	6	7	8	9	10
MIRROR IMAGE	1	Ƨ	Ɛ	4	5	6	7	8	9	01

ALPHABETS	A	B	C	D	E	F	G	H	I	J	K	L	M
MIRROR IMAGE	A	B	Ɔ	D	Ǝ	ꟻ	G	H	I	L	K	J	M

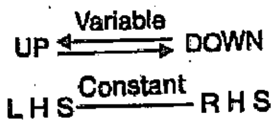
ALPHABETS	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
MIRROR IMAGE	И	O	ꟼ	Q	Я	Ƨ	T	U	V	W	X	Y	Z

Note : The letters having identical mirror images are :

A, H, I, M, O, T, U, V, W, X and Y.

5. WATER IMAGE OR UPSIDE DOWN FIGURE

When a design overturns then only upper and lower parts interchange positions and the left and the right parts remain constant.



DIGITS	1	2	3	4	5	6	7	8	9	10
OPPOSITE FIGURE	⇂	Ƨ	3	ᔭ	ƨ	ə	ㄥ	8	6	⇂0

ALPHABETS	A	B	C	D	E	F	G	H	I	J	K	L	M
OPPOSITE FIGURE	∀	ᗺ	C	D	E	Ⅎ	⅁	H	I	ſ	K	Γ	W

ALPHABETS	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
OPPOSITE FIGURE	ᴎ	O	ᑲ	Ό	ᴚ	Ƨ	⊥	∩	Λ	M	X	⅄	Z

Note : The letters whose water-images remain unchanged are :

C, D, E, H, I, K, O and X.

If you will apply the above mentioned clues of Non-Verbal reasoning on a particular problem then you could come up with appropriate answer very quickly.

SERIES

In this type of questions two sets of figures are provided. One set is called Problem Figures and the other set is called Answer Figures. You are required to point out the specific rule or pattern on which the given figure series is based and then select the one and only figure from the set of Answer Figures which would come after the set of Problem Figures if the given series were continued. In order to identify the specific rule in each case you must take into account all the possible changes in figure series whether it is movement, rotation or deviation of the unit figure. Each unit of Problem Figure generally continues to change from left to right in a specific order. This specific order provides the logical base or methodology to operate in solving the given question. The candidates are required to operate the following methods on the given Problem Figure as quickely as possible :

(a) Addition of symbols or designs

(b) Deletion of symbols or designs

(c) Rotation of symbols or designs — Clockwise or Anticlockwise

(d) Liner Movement of designs — One step (or one side), half a step, one and one-half steps, two steps and so on.

(e) Combination of Operations— Addition and deletion, Deletion plus rotation and so on.

(f) Replacement or Substitution of designs or symbols.

Some of the questions may have a jumbled set of figures consisting of several aspects in one group. Some of these will show up and down movement, some parts increasing while others decreasing, some parts rotating either clockwise or anticlockwise while others remaining static. All these parts of the jumbled set will operate in a set order and not haphazardly. In such cases, candidates are required to analyse each part carefully and then synthesise or correlate them to arrive at an Answer Figure which would continue the series as given in the Problem Figures.

On the basis of changes effected in the elements of each unit figure in the given figure series we can categorised the questions on series as follows.

(1) Rotation and Movement of Designs

(2) Addition of Designs

(3) Deletion of Designs

(4) Addition and Deletion of Designs

(5) Replacement and Movement of Designs

(6) Addition and Movement and/ or Rotation of Designs plus Replacement

(7) Small and Large Designs

(8) Designs consisting of Line Segments

(9) Deviation of Designs

(10) Miscellaneous Types of Designs

ANALOGY

Analogy means "similarity" or "having similar feature". In this type of questions a pair of related figures is provided in which the second figure in the first unit of the Problem Figures bears a certain relationship to the first figure. The Second Figures in the first unit of the problem figure can be obtained by rotating, deviating, adding to, deleting from and dividing the first figure of the first unit of the Problem Figures. In the second unit of the Problem Figures only one figure and a question marked space are provided. You are required to find out one and only one figure from the given set of Answer Figures which bears the same relationship to the first figure/second figure in the first unit of Problem Figures. In second unit of Problem Figures. In other words, you have to replace the question-mark with a suitable figure on the basis of similarity of figures.

CLASSIFICATION

In this type of questions you are required to select one and only figure out of five figures which is not similar to the other four figures. Thus, it is a process of finding out odd man out in a specific class of figures. In this type of questions only one set of figures is provided which serves the purpose of both the problem figures and answer figures. In order to find out the odd figure you should ovserve carefully the movement and/or rotation of the main design and other changes effected in the subsidiary designs. Try to pin-point the basic pattern on which the figures is based.

FINDING THE MISSING FIGURE

By analysing the format of the questions it can be concluded that such questions are somewhat variant form of questions on series, and as such you can solve this type of questions by following the same method which is applicable in the case of questions on Series. The only difference lies in the fact that in the case of questions on Series you are reguired to find out the SIXTH figure of the given series but in the case of MISSING FIGURE SERIES you have to find out either first, second, third fourth or fifth figure of the given series.