

LOGIC—METHODOLOGY AND CONCEPTS

Statement: Statement is generally meant group of words that have meaning but in Logic statement means group of words that has two terms, first term is used under subject and the second term under predicate. The statements in logic are called propositions or premises.

Premises: The premises that has the major term is called major premise and the premise that has the minor term is called minor premise.

Term: The predicate of major premise is called major term and is denoted by P and its subject is called minor term and is denoted by S and the terms which are common in both the premises are called middle term which is denoted by M, for example,

Example:

All men are mortal. (Major Premise)

Ram is man. (Minor Premise)

Ram is mortal (Conclusion)

Here 'mortal' is major term and its subject is not minor term here because it is in minor premise also so it is middle term. Minor term here is 'Ram'.

In logic unit of argument is called proposition or premise and unit of thought is called term. A proposition is different from a sentence that its predicate either affirm or deny the subject, i.e., if we say that I have taken food. In this sentence predicate neither affirms nor denies the subject but if we say that man is mortal then the word mortal affirms the man so this is a proposition and "I have taken food" is just a sentence. Now the question is how will we identify the major and minor premises in a syllogism (group of logical statements). It is possible by identifying the major and minor terms. For this purpose study the 1st and 2nd premises and identify the predicate which has vital and wide concept. It will be the major term and the terms which come in both the premises

will be the middle terms. A term may have one word or more than one word. Moreover, minor term will be used as subject of the conclusion and its predicate will be the major term.

Types of Syllogism:

1. Categorical:

Here all the propositions are categorical in positive or negative form and no doubtfulness is seen at all, e.g.

All graduates are eligible (Major)

All eligible are men (Minor)

Some men are graduates. (Conc.)

2. Hypothetical:

The syllogism of this type uses premise of conditions "if he works hard, he will succeed". Here the first part is called antecedent and the second part is called consequent. In this type of syllogism the major premise is hypothetical being some thing and the minor premise will be categorical, e.g. If he comes, I shall meet him. In this syllogism,

If he comes, (Major)

I shall meet him. (Minor)

3. Disjunctive:

In this type of syllogism the major premise is disjunctive and the other two premises are categorical, e.g.

Either he is an honest man
or a thief. (Major)

He is an honest man. (Minor)

He is not a thief. (Conclusion)

In disjunctive statements two terms opposite in meaning are used. If first is affirmed the second must be denied.

4. Relational:

Here relations between various terms are shown orderly, e.g.

$A > B, B > C, C > D,$

So $A > D$ (conclusion)

5. Dilemma:

In such type of syllogisms the major premise is double hypothetical and minor premise is of disjunctive type and the conclusion will be either disjunctive or categorical, e.g.

- (i) If these books confirm to Quran they are reliable if they do not they are superfluous.
 - (ii) Either they confirm to Quran or they do not.
 - (iii) Either they are reliable or superfluous.
- In the above example the second and third premises are disjunctive.

6. Copula:

The verb used in the premises in logic is called copula. For this purpose "is" and "are" are generally used and logicians do not use 'was' and 'were' as copula because logicians always talk in terms of the present.

Types of Propositions:

1. From the qualitative point of view—
from the quality point of view it is of two types:

- A. Affirmative - i.e., All graduates are men.
- B. Negative - i.e., No man is hard-working.

2. From the quantitative point of view:
From the quantity point of view it is of two types:

- (a) Universal—in which the subject is universal and refers to all without exception. i.e., human being are mortal.
- (b) Particular - in which the subject does not refer to all, i.e., some people are hard-working

The proposition which begins with proper noun will also be treated as universal. Similarly, the propositions which uses phrases like "all but one", "90% about 50%", etc. will be treated as particular propositions. The words like some times, often, generally, etc. also make the propositions particular.

The propositions which use words like few, little, hardly, scarcely, etc. are considered to be negative proposition. Similarly if there are double negatives used in a proposition then the proposition will become affirmative. On the basis of above divisions we can say that there are four types of categorical propositions in logic.

1. Universal affirmative - it is called "A" propositions, i.e.,
 - All labourers are hard-working.
 - All children are true speaking
2. Universal Negative—They are called "E" propositions, i.e.,
 - No minister is dedicated.
 - No human being is happy etc.
3. Particular Affirmative - They are called "I" propositions, i.e.,
 - Some men are hard-working.
 - Some people are labourers.
4. Particular Negative: They are called "O" propositions, i.e.,
 - Some men are not hard-working.
 - Some ministers are not honest.

Distribution of terms in propositions:

- In case of A propositions only subject is distributed.
- In case of "E" proposition both subject and predicate are distributed.
- In case of "I" proposition neither subject nor predicate is distributed.
- In case of "O" proposition only predicate is distributed.

Now, the question is how will the terms be distributed. Take the example of 'A' proposition "Man is mortal". Here the term man has two meaning. The first is, man means human being and the second, is man means animality. If the term 'man' has been used as denotation, i.e., man means human being, the term man will be distributed. On the other hand if man means animality, i.e., connotation of the term, it will not be distributed because there are other animals besides man and the proposition will not remain universal.

Similarly, in case of 'E' proposition both subject and predicate are distributed, i.e., no man is happy. Here no man refers to all human being and happy also refers to all without exception. So both can be distributed for logical conclusions. In the third case of I proposition neither subject nor predicate can be distributed, i.e., "some men are hard-working. Here neither the term men refers to 'all' neither the term hard-working" refers to all so both of them cannot be distributed.

In the last case of "O" proposition only predicate is distributed, i.e., some men are not honest. Here the term 'men' does not refer to all but the term honest may refer to all so it can be distributed.

Distribution of the middle or other terms helps us to arrive at logical conclusion.

Types of Logical Inferences:

- A. Immediate Inference
- B. Mediate Inference

A. Immediate Inferences:

Sometimes promises are arranged in different forms. Out of them some are true and some are false, i.e., 'some students are industrious', is a promise. If it is considered to be true then 'some students are not industrious' is also true but if we say that 'no student is industrious' it is false. All these arrangements are based on certain rules. This is called immediate inference. We shall discuss here only two methods of immediate inference:

1. Conversion:

Here we derive conclusions by taking the following rules into account:

- (a) Predicate becomes the subject and the subject becomes the predicate.
- (b) Quality of proposition does not undergo any change, i.e., Affirmative Proposition will lead to affirmative conclusion and negative proposition will lead to negative conclusion.
- (c) "A" proposition is converted into 'I' proposition. 'I' proposition is converted into 'I' and 'E' into 'E' itself.
- (d) Proposition 'O' can not be converted at

all. Examples will illustrate these points.

- (i) All ministers are politicians" (A Proposition). Its converted form is Some politicians are ministers (I proposition)
- (ii) Some men are hard-working (I proposition) Its converted form is Some hard-working are men (I proposition)
- (iii) No man is immortal. (E proposition). Its converted form is "No immortal is man. (E proposition)
- (iv) Some students are not intelligent. (O proposition). It can't be converted in the following way. Some intelligents are not students.

2. Obversion:

Obverted form of inference is based on the following rules:

- (a) Subject does not undergo any change but predicate is changed into contradictory. Here contradictory does not mean the antonym of the term. It is not used in logic. For making contradictory of the term 'not' should be added before it, i.e., contradictory of 'kind' is not 'cruel' but "not kind" is the real contradictory of 'kind'.
- (b) Negative propositions are changed into affirmative and vice-versa, i.e., A is obverted into E and E is obverted into 'A' proposition.
- (c) The quantity of the proposition will remain the same. If the proposition is universal it will remain universal and if it is particular it will remain particular in the obverted form of the conclusion.

Following examples will illustrate these points clearly.

- (i) All religious people are contented people. (Proposition 'A').

No religious is not contended people. (E).

(ii) No man is fully impartial. (E proposition).

Its obverted form is

All men are not fully impartial. (A)

(iii) Some men are hard of hearing. (I).

Its obverted form is

Some men are not hard of hearing. (O)

(iv) Some doctors are not good. (O)

Its obverted form is

Some doctors are good. (I)

Validity Table:

In order to test the validity of the conclusions we may also use the following table:

Here T and t = truth

f and F = false

d = doubtful

A	E	I	O
T	f	t	F
f	T	F	t
d	F	T	d
F	d	d	T

How to use the table:

'All men are honest' is a proposition 'A'. If it is considered to be true then in the conclusion proposition, E i.e., "no man is honest" will be false, "Some honest are men" will be true and conclusion of O proposition will also be false. Now if this proposition is considered to be false then proposition E, i.e., 'no man is honest' is doubtful and propositions I, i.e., 'some men are honest' is also doubtful but the proposition O, i.e., 'some men are not honest' is true.

"Some students are active" is an "I" proposition if it is considered to be true then conclusion of "E" proposition is false, and conclusion of A and O propositions are doubtful which is clear from the third column of the table. If the same proposition is considered to be false then conclusions of E and O proposition will be true and "A" proposition will be false which is evident from the second column of the table.

H. Mediate Inference:

Arriving conclusion on the basis of the middle term is called mediate inference. There

are two premises—one is major and the other is minor with one conclusion. This group of arguments is technically known as syllogism. An example will illustrate the point.

All mammals are vertebrates. (Major)

The whale is a mammal. (Minor)

The whale is a vertebrate. (Conclusion)

Here the word 'mammal' is common in both the premises. It is middle term. This does not occur at all in the conclusion even if on the basis of it conclusion has been drawn.

The categorical syllogism is thus essentially a process of comparison. Each of the terms in the conclusion is compared with the middle terms in the premises and conclusion is arrived at on the basis of the middle term.

The rules of categorical syllogism:

For arriving at right and valid conclusions following rules or canons must be kept in view.

1. In every syllogism there must be three terms and not more than three, i.e., the major term, the minor term and the middle term e.g.

Good characters are liked by the people.

J.B. Shaw uses good characters in his novels.

There are four terms in the above two premises because 'good character' has two different meaning in the two premises. So no valid conclusion can be drawn here. The middle term must have the identical meaning in both the premises and it must be able to be distributed.

2. Every categorical syllogism must contain only three premises - major, minor and the conclusion. e.g.

Man is mortal (1)

Cow is mortal (2)

Ram is a man (3)

There are three premises excluding conclusion so no conclusion can be drawn from them.

3. The middle term must be distributed in at least one of the premises. It is a must because it is the standard of comparison.

It must be used in at least one premise to its universal extent, e.g.

sedimentary rocks are **stratified substances**. Some metamorphic rocks are **stratified substances**.

Here the term **stratified substances** is not distributed at all because sedimentary rocks agree with one part of the stratified substance and metamorphic rocks agree with another part. Thus there are four terms.

4. The term not distributed in the premises can not be distributed in the conclusion. An example will illustrate the point.

All rational beings are responsible for their action. (1)

Brutes are not rational being. (2)

Brutes are not responsible for their action. (3)

Here the major term **responsible for their action** is distributed in the conclusion but it was not distributed in the major premise because it means that only those are responsible for their action who are rational being.

- 5 & 6. Two negative premises yield no conclusion and if one of the premises is negative, the conclusion must be negative e.g.

No student dislikes games. (1)

No game is fully satisfactory. (2)

No conclusion can be drawn from these two premises.

No human being dislikes justice. (1)

Students are human being. (2)

Students do not dislike justice.

(Conclusion)

Here one of the two premises is negative that makes the conclusion negative. But double negatives used in a premise makes it affirmative and conclusion based on it will be correct, e.g.

No one who is not thoroughly upright is to be trusted.

This man is not thoroughly upright.

This man is not to be trusted.

7. No conclusion can be drawn from two particular premises.

8. If one of the premises is particular the conclusion must be particular.

Four possible Arrangements in Logic:

Figure 1

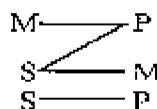


Figure 2

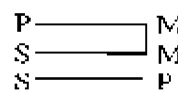


Figure 3

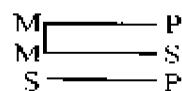
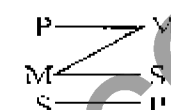


Figure 4



S = Subject or minor term

P = Predicate or major term

M = Middle term

On the basis of the four figures shown above and four types of propositions there are $4 \times 4 \times 4 \times 4 = 256$ types of syllogisms possible. But there are only 19 valid syllogisms which are given below and other are invalid. These four figures and their numbers must be kept in view, because they will be referred in later chapters of logic every now and then.

Figure 1

1. AAA

2. EAE

3. AII

4. EIO

Figure 3

9. AAI

10. IAI

11. AII

12. EAO

13. OAO

14. EIO

Figure 2

5. EAE

6. AEE

7. AIO

8. AOO

Figure 4

15. AAT

16. AEE

17. IAI

18. EAO

19. EIO

Some examples will illustrate these points.

1. M — P All spirituals love humanity. (A)

Σ

S — M All Indians are spirituals. (A)

S — P All Indians love humanity. (A)

AAA syllogism is here. Thus conclusion is correct according to figure No.1.

2. M — P All students are hard-working. (A)
 \sum
 S — M Anil is a student. (I)
 S — P Anil is hard-working. (I)
 Syllogism No. 3 (AII) is here according to Figure No. 1.
3. P — M No human being is animal. (E)
 \sum
 M — S All animals have four legs. (A)
 S — P No man has four legs. (E)
 This conclusion is not valid because EAE is not there in Figure No. 4
4. M — P Some students are faithful.
 \sum
 M — S All students are Indians.
 S — P Some Indian students are faithful.
 Syllogism No. 10 (IAI) is here. Thus it is valid according to Figure No. 3
5. P — M All animals like grass.
 \sum
 S — M Lion does not like grass.
 S — P Lion is not an animal.
 This conclusion is valid because AOO is their in the Figure No. 2 so this conclusions is correct.

Rules of Hypothetical Syllogism:

It is based on the connection between a supposition or condition and its consequence. It starts by the word, if, supposing, granted that, as, etc. The part of the syllogism which expresses the condition is called antecedent and the clause

stating the result is called consequent. In such type of syllogism the hypothetical premise is the major premise and the categorical proposition is the minor premise. Following rules must be kept in view while arriving at valid conclusions in such cases.

Either affirm the antecedent or deny the consequent e.g.

1. If he were well, he would leave the place.
2. He has not left the place.

(Con). He is not well.

Here the consequent is denied. In the following example antecedent is affirmed.

1. If it rains today, he shall not go to school.
2. It is raining.

(Con). He shall not go to school.

So always affirm the antecedent or deny the consequent as the case may be for valid conclusions. If by mistake, consequent is affirmed the following invalid conclusion will be drawn.

1. If perfect justice prevailed, the rich would not be permitted to exploit the poor.
2. The rich are not permitted to exploit the poor.

(Con). Perfect justice is prevailing.

The above rule is also followed in disjunctive syllogisms.

FALLACIES OR POSSIBLE ERRORS IN LOGICAL CONCLUSIONS

1. **Fallacy of ambiguity:** If middle term or phrase are ambiguous wrong conclusion may be drawn. e.g.,

1. Partisans are not faithful. (1)
2. Republicans are partisans. (2)

(Conclusion)

Republicans are not faithful.

Here middle term partisans has two

meaning in the two premises. In the premises No. 1, it means those who are prejudicially interested in some cause but in the second premise it denoted the members of a particular party.

2. **Fallacy of composition:**

When we accept a thing or term to be true of a whole which just holds true of its

1. All the angles of a triangle are less than 180° . (1)
 2. A, B and C are the angles of this triangle. (2)
- (Conclusion)**
A, B and C are less than 180° .

Here all the angles in the first premise means each and every angle taken separately but in the second premise it means A, B and C taken collectively. It means what is true of part can not be necessarily true of the whole.

3. Fallacy of division:

It is the opposite of composition. If we consider that what is true of the whole will be true of parts when taken separately it will also give wrong conclusion, e.g.

1. All the birds fly in the sky. (1)
 2. Ostrich is a bird. (2)
- (Conclusion)**
Ostrich fly in the sky.
Ostrich is an exception which does not fly in the sky.

4. Fallacy of irrelevant conclusion:

We some time assume as wrong conclusion to be right if it is near to the right conclusion. This makes our efforts futile e.g.

- sometimes butchered by the rich. (1)
 2. Rich people are always antagonistic to those who live in slums. (2)
- (Conclusion)**
Rich butcher the poor because they hate them.

5. Fallacy of Consequent:

It occurs when the conclusion does not really follow from the premises and it is wrongly drawn due to lack of logical knowledge e.g.

1. Everyone desires happiness. (1)
 2. Virtuous people are happy. (2)
- (Conclusion)**
Everyone desires to be virtuous.

6. Fallacy of Accident:

The happening which occurs very rarely can never be regarded as a regular phenomenon of occurrence and conclusion will be wrong.

1. A body which is propelled moves. (1)
 2. This body moves. (2)
- (Conclusion)**
This body is propelled.

QUESTIONS

Type I

Directions: In each of the following questions there are two statements followed by several conclusions. Choose the best one after applying logical reasoning. These statement may be at variance from the commonly known facts.

1. (i) All sisters are mothers.
(ii) Some mothers are children.
(a) All children are sisters.
(b) Some sisters are children.
(c) Some mothers are sisters.
(d) None of these
2. (i) Painters like beauty.
(ii) Rita is a painter.
(a) All those who like beauty are painters.
(b) Rita likes beauty.

- (c) Rita does not like beauty.
(d) None of these
3. (i) Gold is ductile.
(ii) This substance is not ductile.
(a) This substance is not gold.
(b) Gold is not ductile.
(c) Ductiles are not gold.
(d) All of these.
4. (i) The cabinet passed the bill.
(ii) He is a member of the cabinet.
(a) He passed the bill.
(b) The bill was passed by him.
(c) A member of the cabinet can pass the bill.
(d) None of these
5. (i) All religious people hate corruption.

- (ii) He hates corruption.
 (a) He is a religious man.
 (b) Corruption hates religious people.
 (c) Those who hate corruption are religious.
 (d) None of these
6. (i) All men are liable to commit mistakes.
 (ii) All priests are men.
 (a) All priests are liable to commit mistakes.
 (b) Committing mistake is human.
 (c) Some priests don't commit mistake.
 (d) None of these
7. (i) If it is cloudy lion will roar.
 (ii) Lions don't roar.
 (a) It is not cloudy.
 (b) It is cloudy.
 (c) Lions roar only in cloudy night.
 (d) None of the above
8. (i) We are dependent on our motor cars.
 (ii) Our motor cars are dependent on petrol.
 (a) We are dependent on petrol.
 (b) Petrol is dependent on us.
 (c) Petrol is the dependent of motor cars.
 (d) None of these
9. (i) All planets are round.
 (ii) A car wheel is round.
 (a) A wheel is a planet.
 (b) Planets are wheels.
 (c) The thing which is round is a planet.
 (d) None of these
10. (i) All tigers have four legs.
 (ii) No cats are tiger.
 (a) No cat has four legs.
 (b) No four leggers are cats.
 (c) Tigers are cats.
 (d) None of the above
11. (i) Humans can not live without atmosphere.
 (ii) The moon is without atmosphere.
 (a) The man can not live on the moon.
 (b) Some men can not live on the moon.
 (c) There is no life possible on the moon.
 (d) All of these
12. (i) Some triangles are figures.
 (ii) Some triangles are pentagons.
 (a) Some pentagons are figures.
 (b) Some figures are pentagons.
- (i) No triangle is a square.
 (d) None of these
13. (i) All lawyers are uncles.
 (ii) All girls are lawyers.
 (a) All girls are uncles.
 (b) All uncles are girls.
 (c) Some girls are not uncles.
 (d) None of the above
14. (i) Some roots are ships.
 (ii) Some roots are apples.
 (a) Some apples are ships.
 (b) Some ships are apples.
 (c) No root is a ship
 (d) None of these
15. (i) All the English speaking people are fool.
 (ii) Mohan speaks English.
 (a) Mohan is a fool.
 (b) Mohan is not a fool.
 (c) Some English speaking people are not fool.
 (d) None of the above
16. (i) Water is a liquid.
 (ii) Ice is water.
 (a) Ice is liquid. (b) Ice is not liquid.
 (c) No ice is liquid. (d) None of these
17. (i) Honest men are respected.
 (ii) Bhola is an honest man.
 (a) Bhola is respected.
 (b) Bhola may probably be respected.
 (c) People like Bhola are respected.
 (d) All of these.
18. (i) India includes Bengal.
 (ii) Bengal does not include UP.
 (a) India does not include UP.
 (b) UP is also a part of India.
 (c) Bengal includes UP.
 (d) None of the above
19. (i) All the express trains stop here.
 (ii) Rajdhani does not stop here.
 (a) Rajdhani is a passenger train.
 (b) Rajdhani is a fast train.
 (c) Rajdhani is not an express train.
 (d) None of these
20. (i) All chairs are stars.
 (ii) Some chairs are round.
 (a) Some rounds are stars.
 (b) Some stars are round.
 (c) No star is round.
 (d) None of these

1. (d):
$$\begin{array}{l} P \text{ --- } M \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$$
 (a) = AIA
(b) = AII
(c) = AII
Thus all the three syllogisms are invalid according to the Figure No. 4

2. (b):
$$\begin{array}{l} M \text{ --- } P \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

Option (a) is irrelevant, (b) is correct because it follows the rules of valid syllogism AII. Moreover the term 'Painters' is distributed in the major premise as well as in the conclusion.

3. (a):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

Valid conclusion AOO is here.
Option (c) can not be correct because minor term must come as a subject of the conclusion.

4. (d): Conclusion (a) logically follows but because of the fallacy of division it is invalid, i.e., collective action can not be considered an individual's action.

5. (d): Option (a) can not be valid because it suffers from fallacy of division. Option (b) and (c) are also invalid. Now correct syllogism is

(i) All religious people hate corruption.

(ii) He is a religious man.
(Con.) He hates corruption.

6. (d): The option (a) which seems to be correct is actually not correct because of the fallacy of accident (b) is also not logical inference and (c) is irrelevant.

7. (a): Here the consequent is denied (which must be) and positive antecedent will become negative. (In hypothetical syllogism either antecedent is affirmed or consequent is denied as the case is here).

8. (d): Here the option (a) seems to be correct but because of the fallacy of the middle term it is wrong. Middle term is not

distributed either in the major or minor premises and thus there are four terms.

9. (d):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } P \\ S \text{ --- } P \end{array}$$

Had the middle term 'round' been distributed the conclusion would have been right, i.e., "AII" combination is not there in figure No. 2. So option (a) or (b) is not true.

10. (d):
$$\begin{array}{l} M \text{ --- } P \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

Combination of AEE is not there in Figure 1.

11. (a):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

The conclusion (a) is logically valid because if one of the premises is negative the conclusion will also be negative.

12. (d):
$$\begin{array}{l} M \text{ --- } P \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$$

Combination EEE is not there in Figure No. 3 so option (a) is not correct (Rule No. 7). Moreover no conclusion can be drawn from two 'I' premises.

13. (a):
$$\begin{array}{l} M \text{ --- } P \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

Valid syllogism of AAA is here which is there in Figure No. 1.

14. (d): Two particular premises yield no conclusion. (Rule No. 7).

15. (d): Option (a) is not correct because it suffers from the fallacy of divisions Mohan speaks English but it is not clear that Mohan does not speak any other language. So option (d) is correct.

16. (d): Option (a) seems to be correct but it suffers from the fallacy of accident so it is invalid.

conclusion must be based on probability.

18. (d): There are four terms. India, Bengal, Bengal and U.P. Thus middle term has double meaning in both the premises.

19. (c): P ——— M
S ——— M
S ——— P

20. (b): M ——— P
M ——— S
S ——— P

Here the second premise is the major premise and the first one is the minor one and the valid syllogism of IA1 is here.

Type II

Directions: One statement is given followed by several conclusions in each question. Choose the right one among the alternatives given.

1. He is an historian, so he can not write novels
(a) No historian can write novels
(b) Some historians can write novels
(c) Historians can seldom write novels
(d) All of these
2. This man can't succeed because he is not truthful
(a) Those who can get success are truthful
(b) All truthful persons succeed
(c) Only successful persons are truthful
(d) None of these
3. He does not go to the mosque so he is not a true Muslim
(a) Only true Muslims go to the mosque
(b) All true Muslims must go to the mosque
(c) Some who go to mosque are true Muslims
(d) None of these
4. Devil is an enemy because he deceives the people
(a) Those who deceive the people are enemies
(b) All those who deceive the men are devils
(c) Enemies deceive the people
(d) All of these
5. All right thinking people believe in fate
(a) Some who believe in fate are right thinking people
(b) No right thinking people do not believe in fate
(c) Those who believe in fate are right thinking people
(d) All of these
6. It is obviously false that dictators always retire voluntarily
(a) Some who retire voluntarily are not dictators
(b) Many who retire voluntarily are other than dictators
(c) Dictators rarely retire voluntarily
(d) All of these
7. All that glitters is not gold
(a) Many things that shine are other than gold
(b) Whatever shines is other than gold
(c) Gold is not the only glittering substance
(d) All of these
8. Some students are disturbing
(a) Some disturbing are students
(b) Some students are not disturbing
(c) Both of the above
(d) None of these
9. All students are not geniuses
(a) Many students are not genius
(b) All geniuses are students
(c) No students is genius
(d) None of these
10. Some doctors are not policemen
(a) Some doctors are policemen
(b) Some policemen are not doctors
(c) Both of the above
(d) None of these

1. (a): The word 'so' declares that all historians can not write novels.
2. (b): The sentence is exclusive. Had he been truthful he would have succeeded. It otherwise means all truthful persons succeed. Double negatives used in a sentence make it affirmative.
3. (b): Option (a) cannot be correct because there may be other reasons to go to the mosque but option (b) is correct.
4. (a): If devil ceases to deceive the people he will not remain the enemy. So option (a) is only correct.
5. (d): Option (a) is the converted form of the premise and (b) is the obverted form of the premise and (c) is the distorted form.
6. (d): In logic always is the converted form of rarely.
7. (d): Option (c) is the converted form of the premise and option (a) is the obverted form. Option (b) means that glittering is not the quality of gold but it is some thing else that makes gold glitter.
8. (c): Option (a) is the converted form and option (b) is the obverted form of the premise.
9. (a): Here premise 'E' is converted into premise 'E' which is logically valid according to the validity table.
10. (c): Option (a) is the obverted form and (b) is the converted form of the premise.

Type III

Directions: Assuming the statement given against each question to be true determine whether the conclusion that follows is true, false, doubtful or irrelevant. Option (a) is for true, (b) for false, (c) for doubtful, and (d) for irrelevant.

1. **Statement:** All students are not lazy.
Conc.: No student is lazy.
2. **Statement:** A few of those who are willing to tell their age are fools.
Conc.: A few fools refuse to tell their age.
3. **Statement:** Some who are not very confused are other than politicians.
Conc.: Any one who is a politician is very confused.
4. **Statement:** Few politicians can stop a popular revolt.
Conc.: A few who are able to stop a popular revolt are other than kings.
5. **Statement:** All who are immensely skillful are cricketers.
Conc.: Some cricketers are immensely skillful.
6. **Statement:** Some blinds are very intelligent.
Conc.: Intelligents are blinds.
7. **Statement:** All snakes are poisonous.
Conc.: No snake is non-poisonous.
8. **Statement:** Some of those who are able to talk are leaders.
Conc.: Some leaders are not unable to talk.
9. **Statement:** Few people read 'The Times of India'.
Conc.: A few people read 'The Times of India'.
10. **Statement:** Students never study early in the morning.
Conc.: Those who study in the morning are other than students.
11. **Statement:** Only treaty breakers are communists.
Conc.: Treaty breaking is the part of communism.
12. **Statement:** All that glitters is not gold.
Conc.: Some glittering objects are gold.
13. **Statement:** Babies cannot manage crocodiles.
Conc.: Few babies can manage crocodiles.
14. **Statement:** No marriage is unsuccessful.
Conc.: Some marriages are successful.
15. **Statement:** Some dogs can not swim in the river.
Conc.: River is for swimming.
16. **Statement:** No teacher commits

- mistake.
Conc.: All teachers commit mistakes.
17. **Statement:** Old soldiers never die.
Conc.: Some old soldiers don't die.
18. **Statement:** Every criminal has his day.
Conc.: Some criminals have their day.
19. **Statement:** Students never fail to be diligent before their exams.
Conc.: A few students fail to be diligent before their exams.
20. **Statement:** A few of the wise lack formal education.
Conc.: Many of the wise do not lack formal education.

Directions: Assuming the statement given against each question to be false determine whether the conclusion that follows is true, false, doubtful or irrelevant. Option (a) is for true, (b) for false, (c) for doubtful and (d) for irrelevant.

21. **Statement:** Few of the braves lack humility.
Conc.: Many of the braves do not or do lack humility.
22. **Statement:** Almost every one favours liquor on campus.
Conc.: Every one favours liquor on campus.
23. **Statement:** Whoever is just never fail to be happy.
Conc.: The just always fail to be happy.
24. **Statement:** Witchcraft is seldom practised legally.
Conc.: Witchcraft is always practised legally.
25. **Statement:** At least a few exercises in logic are tough.
Conc.: At least a few exercises in logic are not tough.
26. **Statement:** All students are not dishonest.
Conc.: A few students are dishonest.
27. **Statement:** Arguments are never won.
Conc.: Arguments are always won.

28. **Statement:** A few acts of aggression are not unjustified.
Conc.: At least one act of aggression is unjustified.

29. **Statement:** All soldiers are not brave.
Conc.: Some soldiers are brave.

30. **Statement:** A few lions are not vicious.
Conc.: No lion is vicious.

Directions: Two statements are given followed by a conclusion in each of the following questions. Mark (a) if conclusion is true, (b) if it is false, (c) if it is doubtful, and (d) if it is irrelevant.

31. I. During puja days people visit those houses where puja is performed they go there even if they are not invited.
 II. Rama visited the house of Raja, his office colleague during puja days.
Conc.: In Raja's house puja was performed.
32. I. If there is a calamity, leaders go around the affected area.
 II. They meet the victims and promise to help them.
Conc.: Such sympathetic visits give assurance to victims.
33. I. Indian students who go abroad do well.
 II. They are offered a job there as well.
Conc.: Those countries want to retain such master minds, so do not let them return.
34. I. Hindus are allowed to have only one wife.
 II. Muslims are allowed to have four wives.
Conc.: In Hindus the ratio of men and women is almost equal but in Muslims it is 1 : 4.
35. I. Rabindra Nath Tagore wrote many poems.
 II. Rabindra Sangeet is very sweet.
Conc.: Tagore himself composed tunes for his poems which are known as Rabindra Sangeet.

EXPLANATORY ANSWERS

1. (b): If premise 'A' is true premise 'B' will be false.
2. (a): If a few are willing, a few must refuse.
3. (d): Correct conclusion is 'politicians are

generally confused.

4. (d): The word 'king' makes it irrelevant. The correct conclusion is 'No politician can stop a popular revolt.'

6. (c): Conclusion is doubtful.
7. (a): 'A' has been obverted into 'E'.
8. (a):
9. (b): Few means no and thus it is premise 'E'. If it is correct premise 'I' can not be correct. The correct conclusion is 'No' people read "The Times of India".
10. (b): Students seldom study early in the morning is the correct conclusion.
11. (c): The right conclusion is those who do not break the treaty are not communist.
12. (a): 'All that' means 'some' and the conclusion is an obverted form of the premise.
13. (b): See the validity table column first where 'A' is correct but 'E' is false. Conclusion is premise E because 'few' means 'no'.
14. (b): The statement is the obverted form of "all marriages are successful". It means that some successful are marriages. Here the premise 'E' is true so the premise 'I' will be false.
15. (d): It's a premise 'O'. Its obverted form "some dogs can swim in the river" is doubtful according to the table and "dogs can swim in the river" (premise A) is false.
16. (b): If premise 'E' is true premise 'A' will be false but premise 'O', i.e., "some teachers don't commit mistake" is true.
17. (a): If premise 'E' is true premise 'O' will also be true according to the validity table.
18. (b): If premise 'E' is true premise 'I' will also be true.
19. (b): If premise 'E' is true conclusion 'I' will be false. Its true form is a few students do not fail to be diligent before their exams. (premise 'O').
20. (c): If premise 'I' is true conclusion 'O' will be doubtful but it is near to be true.
21. (a): If premise 'I' is false, conclusion 'O' will be true.
22. (b): If premise 'I' is false conclusion 'A' will also be false according to the validity table.
23. (c): If premise 'E' is false conclusion 'A' will be doubtful but near to be true.
24. (a): It is most likely to be true because seldom is the inverse of always.
25. (a): If premise 'I' is false conclusion 'O' must be true.
26. (a): If premise 'E' is false conclusion 'I' will be true.
27. (c): If premise 'E' is false conclusion 'A' will be doubtful.
28. (a): If premise 'O' is false conclusion 'I' will be true.
29. (b):
30. (b):
31. (c): Rama might have gone there for other purposes.
32. (a): Promises always give assurance.
33. (c): It is only a long drawn one.
34. (b): Very few muslims have more than one wives even if they are allowed to have four.
35. (d):

Type IV

Directions: In each of the following questions there are two statements followed by two conclusions. Disregarding the commonly known facts and applying the rules of logic mark (a) if only conclusion I follows from the statements, mark (b) if only conclusion II follows from the statements mark (c) if both follow from the statements and mark (d) if neither I nor II follows.

1. Statement:

- (i) Footballers are generally healthy.
(ii) Rashid is a good footballer.

Conc.:

- (I) All healthy persons are footballers.
(II) Rashid is healthy.

2. Statement:

- (i) All men are chairs.
(ii) All chairs are tables.

- Conc.:**
(I) All men are tables.
(II) Some chairs are men.
3. **Statement:**
(i) All boys are rivers.
(ii) Some rivers are girls.
Conc.:
(I) Some girls are boys.
(II) Some boys are girls.
4. **Statement:**
(i) Some bags are white
(ii) Some non bags are toothpastes.
Conc.:
(I) Some bags are tables.
(II) Some whites are bags.
5. **Statement:**
(i) Some pots are cups.
(ii) All cups are rats.
Conc.:
(I) Some pots are rats.
(II) All pots are not rats.
6. **Statement:**
(i) All apples are bananas.
(ii) All bananas are sweets.
Conc.:
(I) Some apples are sweets.
(II) Some bananas are apples.
7. **Statement:**
(i) Some poets are fools.
(ii) All fools are rich.
Conc.:
(I) Some rich are poets.
(II) Some fools are poets.
8. **Statement:**
(i) All graduates are typewriters.
(ii) All typewriters are boats.
Conc.:
(I) All graduates are boats.
(II) All boats are graduates.
9. **Statement:**
(i) All cinema stars are rivers.
(ii) All rivers eat stone chips.
Conc.:
(I) Some cats are cinema stars.
(II) All cinema stars eat stone chips.
10. **Statement:**
(i) All the honest people are mats.
(ii) All the mats are politicians.

- Conc.:**
(I) All the honest people are politicians.
(II) Some politicians are honest.
11. **Statement:**
(i) All the dogs are cats.
(ii) Some cats are white.
Conc.:
(I) Some dogs are white.
(II) Some cats are dogs.
12. **Statement:**
(i) Some tables are glasses.
(ii) All trees are tables.
Conc.:
(I) Some trees are glasses.
(II) Some glasses are trees.
13. **Statement:**
(i) No man is a cat.
(ii) Hamid is a man.
Conc.:
(I) Hamid is not a cat.
(II) All men are not a cat.
14. **Statement:**
(i) Some chairs are lions.
(ii) Table is a chair.
Conc.:
(I) Some lions are chairs.
(II) Table is not a lion.
15. **Statement:**
(i) All planes are buses.
(ii) All buses are cars.
Conc.:
(I) All buses are planes.
(II) All planes are cars.
16. **Statement:**
(i) If footballs are made of iron cricket bats are made of wood.
(ii) Cricket bats are not made of wood.
Conc.:
(I) Footballs are not made of iron.
(II) Footballs are made of iron.
17. **Statement:**
(i) General rules the army.
(ii) General's wife rules him.
Conc.:
(I) His wife rules the army.
(II) Army is ruled by a General.
18. **Statement:**
(i) All birds have wings.
(ii) Bats have no wings.

- (I) Bats are not birds.
(II) Those who have not wings are other than birds.
19. **Statement:**
(i) All wives are women.
(ii) She is a woman.
Conc.:
(I) She is a wife.
(II) Only she is wife.
20. **Statement:**
(i) Teachers are soldiers.
(ii) Soldiers are farmers.
Conc.:
(I) Teachers are farmers.
(II) Farmers are teachers.
21. **Statement:**
(i) Some apples are yellow.
(ii) Golden is an apple.
Conc.:
(I) Golden is yellow.
(II) Some apples are green.
22. **Statement:**
(i) All cars fly.
(ii) Some bikes fly.
Conc.:
(I) All cars are bikes.
(II) Some bikes do not fly.
23. **Statement:**
(i) Some crows are dogs.
(ii) All dogs are faithful.
Conc.:
(I) Some faithful are crows.
(II) Some faithful are dogs.
24. **Statement:**
(i) All tables are ants.
(ii) Some ants are chairs.
Conc.:
(I) Some tables are chairs.
(II) Some chairs are tables.
25. **Statement:**
(i) Some cooks are lazy.
(ii) All boys are lazy.
Conc.:
(I) Some boys are cooks.
(II) Some cooks are boys.
26. **Statement:**
(i) Most trains are gentlemen.
(ii) Some gentlemen are tanks.
- Conc.:**
(I) Some tanks are trains.
(II) Some trains are tanks.
27. **Statement:**
(i) All flowers are beautiful.
(ii) All flowers are girls.
Conc.:
(I) Some beautifuls are girls.
(II) Some girls are beautiful.
28. **Statement:**
(i) All prisoners are educated.
(ii) No man is educated.
Conc.:
(I) No man is a prisoner.
(II) No prisoner is man.
29. **Statement:**
(i) All potatoes are birds.
(ii) Some potatoes are books.
Conc.:
(I) Some books are potatoes.
(II) All books are birds.
30. **Statement:**
(i) All dogs bark.
(ii) Some dogs bite.
Conc.:
(I) Those dogs who do not bark also bite.
(II) Barking dogs seldom bite.
31. **Statement:**
(i) Some offices are hotels.
(ii) All hotels are clubs.
Conc.:
(I) Some clubs are offices.
(II) Some offices are not clubs.
32. **Statement:**
(i) Some roads are footpaths.
(ii) Some highways have footpaths.
Conc.:
(I) Some highways do not have footpaths.
(II) Some highways have roads.
33. **Statement:**
(i) All workers are teachers.
(ii) All writers are teachers.
Conc.:
(I) Some writers are workers.
(II) Some teachers are workers.
34. **Statement:**
(i) All Americans are either Canadians or Mexicans.

(ii) Most of the Mexicans are not white.

Conc.:

(I) No Canadian is Mexican.

(II) Some Americans are not white.

35. Statement:

(i) Some plates are cups.

(ii) Some cups are spoons.

Conc.:

(I) Some plates are spoons.

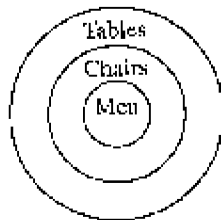
(II) Some cups are not spoons.

EXPLANATORY ANSWERS

1. (d):
$$\begin{array}{l} M \text{ --- } P \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

Conclusion (I) is irrelevant and conclusion (II), 'AII' combination which seems to be valid suffers from the fallacy of accident because of the word 'generally' used in the statement.

2. (c):

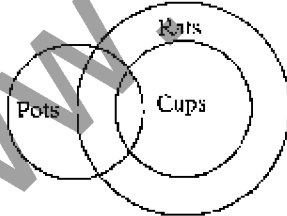


3. (d):
$$\begin{array}{l} P \text{ --- } M \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$$

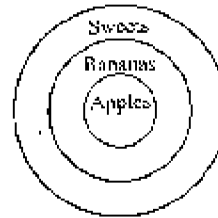
Both the conclusions are not correct because 'AII' is not a valid syllogism according to figure No. 4. Here major premise is 'A' premise, minor premise is 'I' one and conclusions are also premises.

4. (d): No conclusion can be drawn from two particular premises. (According to rule No.7) More-over propositions 'I', i.e., 'some bags are white' is converted into 'some whites are bags' so second conclusion is also not correct.

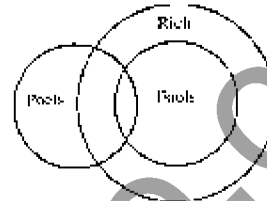
5. (c):



6. (c):

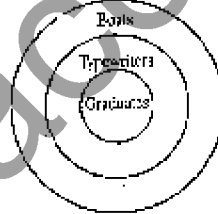


7. (c):

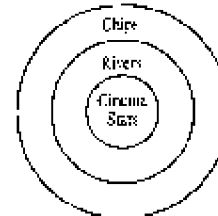


'IAI' is a valid syllogism here.

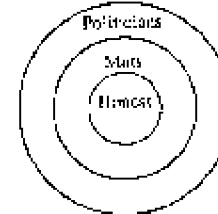
8. (a):



9. (b):



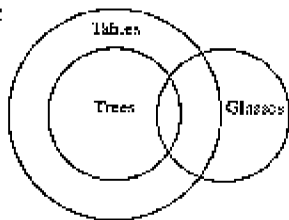
10. (c):



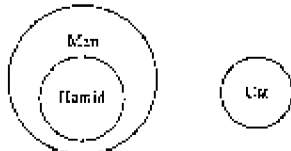
11. (b):
$$\begin{array}{l} P \text{ --- } M \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$$

11. Conclusion is correct because it is the converted form of the statement first but statement I can't be correct because the major term cannot be the subject of the conclusion.

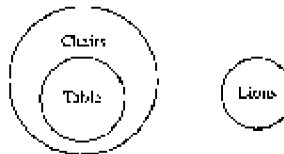
12. (c):



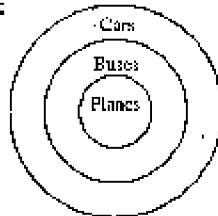
13. (c):



14. (a):



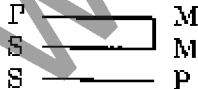
15. (d):



16. (a): In a hypothetical syllogism consequent is denied that is the case here and if both the causa are in affirmative then antecedent will also be in negative term because of the conditional phrase.

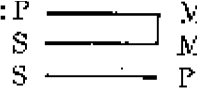
17. (d): There are four terms in the two statements so no conclusion can be drawn because of the fallacy of the middle term.

18. (c):



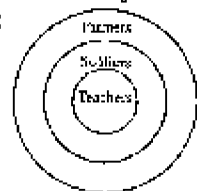
Conclusion (I) is correct because AEE is a valid syllogism. According to figure No. 2 Conclusion (II) is also correct.

19. (d):



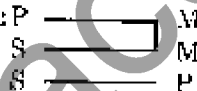
Conclusion I is wrong because AII is not valid. Conclusion II is also wrong because it can not be exclusive as the word 'only' here shows.

20. (a):



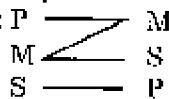
21. (d): Conclusion (I) is not correct because 'III' is not a valid syllogism and conclusion (II) is irrelevant. Moreover no conclusion can be drawn from two particular affirmative (I) premises.

22. (b):



Conclusion I is not correct because the major term can not be the subject of the conclusion and conclusion II is the converted form of the second statement of premise I into 'E'.

23. (c):



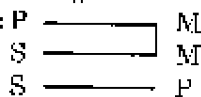
Conclusion I is correct because valid syllogism of IAI is here and second conclusion is the converted form of the second statement.

24. (d):



Conclusion (II) 'AII' is not valid according to figure No. 4 and Conclusion (I) makes major term as the subject of the conclusion so it is also wrong.

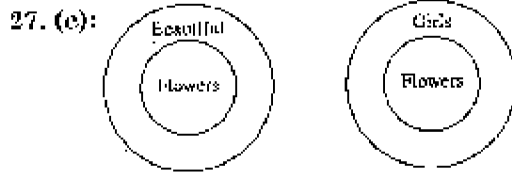
25. (d):



Conclusion I is not valid (IAI) according to the figure and conclusion (II) makes

the major term as subject of the conclusion.

26. (d): No conclusion can be drawn from two particular premises.



28. (a): P ——— M
S ——— M
S ——— P

Valid syllogism AEE is there in figure 2. And conclusion (II) can not be correct because major term is the subject of the conclusion.

29. (a): M ——— P
M ——— S
S ——— P

Conclusion I is correct because valid syllogism of AII is there in Figure No. 3 but 'AIA' is not a valid syllogism according to the figure so conclusion II is not correct.

30. (d): Middle term dogs is not distributed here so no conclusion can be drawn. And conclusion (II) is a phrase only.

31. (c): P ——— M
M ——— S

S ——— P

Valid syllogism of IAI is here and (II) conclusion is the obverted - converted form of the statement (I).

32. (a): No conclusion can be drawn from two particular (I) premises so conclusion (II) does not follow but conclusion I is the obverted form of the statement second.

33. (b): P ——— M
S ——— M
S ——— P

Middle term 'teachers' is not distributed at all so no conclusion can be drawn. Moreover AAI is not a valid syllogism according to figure No. 2. And conclusion II is the converted form of the statement (i) so it is correct.

34. (c): If Americans are not Canadians, they are Mexicans, if some Mexicans are not white, it means some Americans are also not white. Conclusion (II) also follows because of the word 'm' used in the statement.

35. (b): Conclusion I does not follow because (a) no conclusion can be drawn from two particular premises (b) major term can not be the subject of the conclusion. And conclusion II is just the obverted form of the statement (i).

Type V

Directions: In each of the following questions there is a statement or short paragraph followed by two conclusions I and II. Assuming the statement to be true mark -

- If only conclusion I follows.
- If only conclusion II follows.
- If both I and II follow.
- If neither I nor II follows.

1. **Statement:** If you are a good doctor we have definitely a case for you.

Con. I: You are a good doctor.

Con. II: We are in need of a good doctor.

2. **Statement:** Miser people seldom help the poor.

Con. I: Those who are miser never help the poor.

Con. II: Poor are very rarely helped by the miser.

3. **Statement:** Since the feeling of superiority is built in wherever there is social development, there is a little that can be done to arrest it except at the cost of social development.

Con. I: To maintain social development complex should be allowed to continue.

Con. II: Social development and complex run side by side.

4. **Statement:** Recent researches have shown that pimples have their root cause in the liver.
Con. I: The medication for pimples should be administered to the liver.
Con. II: Inhaling of steams is of no use for this purpose.
5. **Statement:** It is written in history books that most of the battles which took place among rulers were fought for amassing wealth and beautiful women. World War I has a background very near to it.
Con. I: If money minded people will flourish, World War III may start.
Con. II: In olden days wealth and beautiful women were the major concerns for rulers.
6. **Statement:** The oceans are store house of practically every mineral including $^{238}\text{U}_{92}$. But like most other minerals it is found in extremely low concentration about 3 grams per 1000 tons of water.
Con. I: Sea water contains silver and iron.
Con. II: Gold is found about 3 grams per 1000 tons of water.
7. **Statement:** It is evident from the historical information that even in ancient India both the masters and disciples valued not the quantity of education but its quality.
Con. I: There was an identity in educational values between teachers and students in ancient India.
Con. II: Quality of education is valued and given more importance than quantity of education today.
8. **Statement:** Domestic demand has been increasing faster than the production of indigenous crude oil.
Con. I: Deficiency demand will have to be met by import.
Con. II: There is no need to cut domestic demand of crude oil.
9. **Statement:** The disparities between the problems of rich and the poor do not stand out clearly when we compare the attitude of the law making bodies towards these two strata of the society.
Con. I: Parliament do not discriminate between rich and poor while formulating policies for them.
Con. II: Law makers do not have identical attitude towards the haves and have nots.
10. **Statement:** A maladjusted is a non-criminal who commits crime for the sake of adjustment.
Con. I: Some crimes have their root cause in adjustment problems.
Con. II: Maladjustment and delinquency go hand in hand.
11. **Statement:** Constitutional morality is not a natural sentiment.
Con. I: Sentiments are always innate.
Con. II: Constitutional morality can be cultivated.
12. **Statement:** In a police encounter 5 terrorist and 2 soldiers were killed and one injured seriously.
Con. I: The clash was not unexpected.
Con. II: The only injured was the terrorist.
13. **Statement:** No new tax has been proposed in the budget of 1997-98. It is still a surplus budget.
Con. I: The budget of 1997-98 may be considered a good budget.
Con. II: 1997-98 budget is a surplus budget because no new tax has been proposed.
14. **Statement:** It does not matter what type of food you eat. What matters is whether you can digest it.
Con. I: Any type of food is equally good as long as it is digested.
Con. II: The type of food one eat, is immaterial.
15. **Statement:** Now you need not have an import licence to own a software computer today.
Con. I: Computer softwares are made indigenously.
Con. II: Duty free computers are now available.

16. **Statement:** If blue is heavy then yellow is light. If red is light then green is medium but blue is heavy or red is light.
Con. I: Yellow is light or green is medium.
Con. II: Yellow is red.
17. **Statement:** The best way to escape from a problem is to solve it.
Con. I: Your life will be dull if you don't face a problem.
Con. II: To escape from a problem demand some solution of the problem.
18. **Statement:** Good is the enemy of best.
Con. I: You should be good to your best enemy.
Con. II: Best do not like the good.
19. **Statement:** The essence of one day cricket is the ability to score runs fast and to bowl with a mixture of control and aggression which adroitly handled can tie the opponent hand and foot.
Con. I: Kapil Dev who won the World Cup in 1983 had all the above qualities.
Con. II: Aggressive bowling as well as fast scoring of runs are equally indispensable to win a one day cricket match.
20. **Statement:** Majority rules in a democracy.
Con. I: In a democracy candidates are elected by a majority of votes.
Con. II: Majority have the power to amend a law in parliament in democratic set up.
21. **Statement:** Whereabout of my brother is not known since he left this place last year by that unlucky bus which collided with a truck near Paizabad.
Con. I: My brother was killed in the accident.
Con. II: Collision of the bus and the truck is the reason behind my brother's missing.
22. **Statement:** Strikes are the inherent rights of workers for the purpose of securing justice.
Con. I: Workers can not get justice unless they go on strike.
Con. II: Every worker must defend his/her inherent right.
23. **Statement:** The greatest need of India today is not of good researchers but well trained teachers.
Con. I: India does not need researchers today.
Con. II: Researchers are least attached with the universalization and popularization of quality education.
24. **Statement:** It is risky to travel from Jammu to Baramulla because of the zig-zag road.
Con. I: Jammu and Baramulla are connected by bus services.
Con. II: There is no other means of transportation from Jammu to Baramulla.
25. **Statement:** Books without knowledge of life are useless.
Con. I: All books contain knowledge of life.
Con. II: People should be anxious to acquire the knowledge of life.
26. **Statement:** All that glitters is not gold.
Con. I: Judgement should not exclusively be made on the basis of the appearance.
Con. II: Gold does not shine at all.
27. **Statement:** This book is too costly to be worthless.
Con. I: When books fall short of supply their prices go up.
Con. II: The higher the selling price, the superior is the quality of the commodity.
28. **Statement:** Apart from the educational value of newspapers their recreational values should also be kept into account.
Con. I: People take newspapers to be a means of imparting education.
Con. II: The entertainment value of newspapers is also of paramount importance.
29. **Statement:** I have nothing except the reality of ignorance.

Con. I: The world of knowledge is too vast to be explored by a single person.

Con. II: The writer is ashamed of his poor knowledge.

30. Statement: Books are like friends who give rich and lasting rewards.

Con. I: Always choose rich friends like books.

Con. II: Books give us eternal satisfaction.

EXPLANATORY ANSWERS

1. (b): The consequent is related with the antecedent. The word 'definitely' clarifies that we need a doctor.
2. (c): The word 'seldom' is very close to never the 'very rarely' is also very near to it and II conclusion is the passive form of the statement.
3. (c): If we remove superiority complex from the mind of the people we will jeopardise social development.
4. (a): Conclusion II does not follow because there is no reference of steam in the statement.
5. (b): The statement clarifies that there were some exceptions to this purpose of war so nothing can be definitely said about a war in future. Moreover money minded people and kings are not the same things.
6. (a): Every mineral is found in oceans and also in low concentrations but second conclusion does not follow because all minerals are not found in the same concentration. 3 grams per 1000 tons of water concentration has been used exclusively for $^{238}\text{U}_{92}$.
7. (c): Conclusion II also follows because of the word "even" in the statement that makes it a reported speech of indirect narration.
8. (a): Conclusion II is not correct because in order to keep a balance between production of oil and domestic demand, the later must be cut.
9. (a): Study the attitude of parliamentarians towards rich and poor separately. If it is identical then it will be difficult to distinguish rich and poor on the basis of their problems.
10. (c): Both the conclusions can be drawn from the statement but only one conclusion will be correct at one time.
Thus either I follows or II follows.
11. (b): Sentiments are natural and cultivated both according to the statement.
12. (d): Encounters are always unexpected, and the persons who was injured among them, may either be a soldier or a terrorist.
13. (a): If burden of tax does not increase even then it is able to meet the budgetary requirement of the government, it is a good budget.
14. (a): Immaterial is the opposite of material not of matter.
15. (d): Liberalization does not necessarily mean that people have started producing computers indigenously and custom duty and import licence are not identical in nature.
16. (c): In hypothetical affirmative syllogism, if antecedent is affirmed its consequent must be denied.
17. (d): Conclusion I is irrelevant. Second is also not implicit because there are ways other than its solution for escape.
18. (d): Conclusion I and II both are not implied, e.g., if we don't like someone it does not mean that we are enemy of that person.
19. (b): Conclusion I is not implicit because there is no reference of a particular cricketer in the statement.
20. (c): Both the conclusions follow from the statement separately. So either I or II is correct.
21. (c): I and II both the conclusions probably follow from the statement.
22. (d): Correct inference may be:
 - (i) If justice is not being given to workers, they have the right to go on strikes.
 - (ii) No one has the right to prevent workers going on strike.

23. (b): Conclusion I is wrong because the statement does not talk exclusively but refers "the greatest need of India" and II is also probably true.
24. (a): No such problems arises in rail or air services so 'bus services' is the only possible option. And there are other means also and land ways is risky among them.
25. (d): I and II both don't follow from the statements.

- inference and II one is a logical one.
27. (b): It otherwise means that the books are so expensive that it can not be worthless (transformation).
28. (c): Both I and II follow from the statement.
29. (d): Every one in this world is ignorant in many respects, so there is nothing to be ashamed of.
30. (b): Conclusion I is irrelevant.

Type VI

Directions: In each of the following questions a statement is given followed by two Arguments.

Mark your answer (a) if only I is strong.

Mark (b) if only argument II is strong.

Mark (c) if both the arguments are strong, and

Mark (d) if neither I nor II is strong.

1. **Statement:** Should education be given by the government free of charge?
Arg. I: Yes, it will help in universalization of education in the country.
Arg. II: No, there will be budgetary deficit creating some new problems.
2. **Statement:** Should caste system be banned in the Indian society?
Arg. I: Yes, it is a heavy barrier in the way of speedy development of the country.
Arg. II: No, it will give chance to low caste people to run the government through elections.
3. **Statement:** Should private sector be permitted to enter into the public utility services?
Arg. I: Yes, they are doing well in advanced western countries.
Arg. II: No, it is risky to put these services in private hands.
4. **Statement:** Should the government stop aiding to minority institutions of education?

Arg. I: Yes, their poor quality as well as quantity of education is wasting the fund.

Arg. II: No, ruling party will lose its vote bank in the coming elections.

5. **Statement:** Should articles of only deserving authors be allowed to be published?

Arg. I: Yes, it will save a lot of paper which falls short of supply.

Arg. II: No, it is not possible to draw a demarcation between the deserving and the undeserving authors.

6. **Statement:** Should military training be made incumbent on all school and college going students?

Arg. I: Yes, it will inculcate discipline among them.

Arg. II: No, it will bring regimentation in education.

7. **Statement:** Should the political parties be banned?

Arg. I: Yes, it is necessary to teach a lesson to the politicians.

Arg. II: No, it will lead to an end of democracy.

8. **Statement:** Should India support economic liberalization?

Arg. I: Yes, it will boost up industrial development leading to more supply of the commodity and low price.

Arg. II: No, it is against the Nehru's dream of democratic socialism.

- the world.
- Arg. II:** No, the quality of health care services will deteriorate.
10. **Statement:** Should the duration of the parliamentary government be increased?
- Arg. I:** Yes, it will reduce the expenses on elections and also reduce inflation.
- Arg. II:** No, it will take longer time to change a ruling party even if it is corrupt.
11. **Statement:** The educated people should work in villages.
- Arg. I:** Yes, because they can revolutionize agriculture and revamp the rural atmosphere.
- Arg. II:** No, because their education might wastes there in villages.
12. **Statement:** Should movies full of violence be telecasted?
- Arg. I:** Yes, because children will adopt such behaviour from films.
- Arg. II:** No, because violence is the heart and soul of all pictures.
13. **Statement:** Should guides published by private agencies be banned?
- Arg. I:** Yes, because only then students will start reading text books.
- Arg. II:** No, because they are of immense help for weak students at the eleventh hour.
14. **Statement:** Computer based technology is very fruitful for industrial development in India.
- Arg. I:** Yes, accuracy, fast production and fineness are possible through computer technology.
- Arg. II:** No, it will increase unemployment in the country.
15. **Statement:** Agriculture in India should be mechanized.
- Arg. I:** Yes, it would lead to higher production.
- Arg. II:** No, many villagers would be left

participate in the management of factories in India?

Arg. I: Yes, it is the present management theory.

Arg. II: No, many workers are illiterate and their contribution will not be of value.

17. **Statement:** Should there be women chief ministers in states?

Arg. I: Yes, only then the plight of women will be removed and their condition will improve.

Arg. II: No, a woman is not capable of ruling a state.

18. **Statement:** Should public meeting and conferences be banned in the country?

Arg. I: Yes, it is the place where opponents are abused.

Arg. II: No, it is against fundamental rights given to citizens of India.

19. **Statement:** Should mass media be fully controlled by the government?

Arg. I: Yes, the contradictory news only confuses the people.

Arg. II: No, its credibility will be doubtful if mass media is controlled by government.

20. **Statement:** Should sex education be given in schools?

Arg. I: Yes, it is given in western countries.

Arg. II: No, it is naturally gained when children grow into adolescence.

21. **Statement:** Should religion be banned?

Arg. I: Yes, it develops fanaticism among people.

Arg. II: No, religion binds people together.

22. **Statement:** Should India have nuclear weapons?

Arg. I: Yes, it is necessary to protect the sovereignty and integrity of the country.

Arg. II: No, this will disturb the balance of power in the region.

- Arg. I: Yes, it damages the liver and the lung.
Arg. II: No, it will drive millions of tobacco workers out.
24. **Statement:** Should drivers be prohibited to consume liquors?
Arg. I: Yes, it reduces the chance of uncontrolled driving of vehicles.
Arg. II: No, it adds to stamina in them.
25. **Statement:** Should competitive tests be objective in nature?
Arg. I: Yes, it gives fair and impartial assessment of the examinees.
Arg. II: No, writing and organizing ability can not be assessed through this test.
26. **Statement:** Should income tax be evaded by the people?
Arg. I: Yes, the rate of income tax is very high.
Arg. II: No, it is illegal and unlawful.
27. **Statement:** Should sales tax be abolished?
Arg. I: Yes, it will eliminate an important source of corruption.
Arg. II: Yes, it will bring the prices of commodities down and hence consumers will be benefited.
28. **Statement:** Should state lotteries be stopped?
Arg. I: Yes, government should not promote gambling habits.
Arg. II: No, government will have to suffer loss of revenue.
29. **Statement:** Should higher education be restricted to the most deserving students?
Arg. I: Yes, only deserving people are entitled to this luxury.
Arg. II: No, it is against the principles of equality of educational opportunity.
30. **Statement:** Should primary teacher's
Arg. I: Yes, it will encourage and motivate them to teach in a better way.
Arg. II: No, it will increase financial pressures on the government.
31. **Statement:** Do good quality products need wide publicity?
Arg. I: Yes, in the present day world of competition, customers can not know about a new product without proper publicity.
Arg. II: No, good quality products automatically attract customers and thus speak for themselves.
32. **Statement:** Does the survival of the fittest dictum fit today?
Arg. I: Yes, weak have very poor chance of achieving anything in the present day world of competition.
Arg. II: No, we are not living in the stone age now.
33. **Statement:** Has the medical science really lengthened the span of life?
Arg. I: Yes, the new drugs have been able to combat the diseases and increase the span of life.
Arg. II: No, the eternal truth that every person's days are numbered can not be denied.
34. **Statement:** Is the youngest child happy when a new baby takes birth in the family?
Arg. I: Yes, it is exciting for him to have a new member in the family.
Arg. II: No, he becomes jealous of the new born.
35. **Statement:** Should students study in early hours of morning?
Arg. I: Yes, mind is fresh and alert at that time.
Arg. II: No, early risers feel sleepy throughout the day.

EXPLANATORY ANSWERS

1. (c): Argument I follows because those who are unable to get education due to monetary problems, will get, if it is made free of charge, and argument II is also strong because it will require additional budget increasing financial burden on the government.
2. (a): Division of society on the basis of caste is really a hard stone in the way of speedy flow of social and political functioning so argument I is strong but argument II does not follow because

- people are already running the government at various levels thus caste system bear little impact on this issue.
3. (d): The condition of a developing country is entirely different as compared to a developed nation. So argument I is not strong and argument II is also weak because private sector is doing well in many economic areas and their credibility is unquestionable.
4. (a) It is a fact based on researches that quality as well as quantity of education in minority institutions, barring a few, is extremely poor because of many reasons as compared to governments' institutions. If we compare the achievement with money invested it is less than 1/10th. So argument first is strong. Second argument is not strong because ruling party must act in accordance with the general welfare of the people disregarding its vote bank.
5. (b): It is clear from the second argument that there is no way of identifying deserving authors. If the criteria of deserving and non-deserving authors are the significance of their articles, the question of investigating into the author does not arise. So argument I is weak and II one is strong.
6. (b): Argument I is weak which is evident from the II argument which is really strong. Moreover, the discipline which is there in military, is different from the discipline that we want in colleges as well as in the society. It will definitely increase regimentation because every one does not like military training and his freedom of choice is challenged here.
7. (b): Argument II is strong because where there are no political parties there is no democracy.
8. (c): First argument is based on economic principles and laws while the second one has its origin into history and polity.
- model can not be the base of an argument and nationalized health care services are not always attached with poor health service. So argument II is also weak.
10. (b): Expenses on elections are not the sole cause of inflation so argument I is weak but argument II is strong because when a ruling party is not acting satisfactorily we can charge it through elections and do away with it by popular votes.
11. (a): Argument I is strong because by using their education properly they can revolutionize agriculture and revamp rural atmosphere. It does not mean that their education is being wasted there.
12. (a): Only argument I is strong, because such movies create the attitude of violence especially in adults.
13. (b): If agencies stop publishing guide books it is not necessary that students will go through text books. Study habits are related to other variables like intelligence, socio-economic status, aim of life etc. On the other hand there is no doubt that guides are helpful for weak students. So argument II is strong.
14. (c): There is no doubt at all about the first argument and II is also strong because India is a populous country where labour intensive technique is more suitable than capital intensive technique.
15. (a): Mechanization in agriculture does not mean that many people will lose their jobs. Mechanization generally helps in reducing the use of animals in agriculture.
16. (b): A rule which is supported by a theory does not suit to all circumstances. So argument I is not strong but argument II is really a fact at least in India where literacy is not more than 50% while management require fine piece of education.

of women were stopped by men and so is the case even today. So argument I is weak and argument II is also weak because many of the women happened to be the rulers of states and nations and they are ruling well even today.

18. (b): Right to freedom of expression is a fundamental right. So argument I is strong but argument II is weak because it rarely happens that opponents are abused in public meetings and conferences.
19. (h): Argument I is not strong because whenever there is a contradiction in a news it is not because newspapers or TV are in private hands but other reasons are responsible for it. Even in government controlled newspapers, one news sometime contradicts the other news. Government's controlled mass media generally speak the language of the ruling party and thus its credibility becomes doubtful.
20. (d): The culture of India is very much different from that of the western countries. So whatever is liked there may not be necessarily regarded good here. Moreover, children need not such type of education but they are adults who should be imparted sex education. Knowledge of sex in real sense is not an innate process.
21. (b): There is no doubt in the fact that religion binds people together but it is doubtful that it develops fanaticism. All religious people like humanity in general and love human being. Only those who are exhibitory and believe in crocodile's tear are fanatical.
22. (a): Having a nuclear weapon is one thing and using it indiscriminately is another thing. So argument I is strong but II one is not strong because some other countries of the region does also have it.
23. (a): Argument I is based on scientific researches but argument II is not logical. Its reason is given in argument I.
24. (a): Controlled driving can not be done in is strong but argument II is weak. Consuming liquor does increase stamina for a while but after that it crashes the nervous system.
25. (c): Argument I is the advantage of this type of test and argument II is really the weak aspect of the test. It is not possible to measure writing ability, speed, spelling, organizational ability etc. through multiple choice tests.
26. (b): The rate of income tax is really very high but even then we should not evade it because it is against law.
27. (a): Corruption is involved not only in tax collecting but sellers of the commodities are also habitual with several types of corrupt activities like black marketing, fake receipts etc. So argument I is strong. But argument II is weak because in a free market prices are determined by the forces of demand and supply. If tax is eliminated from the commodity its price will go down and its demand will increase that will result into a rise in the prices again.
28. (d): Both the arguments are not strong.
29. (d): Equality of educational opportunity does not mean that everyone must be given the chance of getting education irrespective of his talents. It simply means that any citizen of India will not be discriminated on the basis of his caste, creed, colour or profession. Higher education entails higher costs so scrutiny is a must here.
30. (b): Study shows that salary of the teacher has little impact on their professional ability and motivation. Most of the teachers are doing well in private schools on small salaries. So argument I is not strong but argument II is really strong because heavy finance will be needed for paying salaries to teachers.
31. (c): Without proper publicity we cannot tell our customers about the quality of our products but once it is introduced in the market after small publicity, people choose it because of its high quality and other people are informed by those who

survival of the fittest.

33. (a): Assumption II is not strong because its meaning is entirely different from that

that of the I.

35. (a): After sound sleep mind becomes fresh and alert.

Type VII

Directions: There are two statements *P* and *Q* each followed by an inference. Now determine which of the statements supports its inference. Mark (a) if only statement *P* is true, Mark (b) if only statement *Q* is true, mark (c) if both *P* and *Q* are true and mark (d) if neither of them is true in accordance with logic.

- (P) Water boils at 100°C. This liquid boils at 100°C. Therefore, this liquid is water.
(Q) Every bottle with a green label contains apple juice. Apple juice is safe to drink. Therefore, it is harmless to drink from every bottle with green label.
- (P) All, that twinkles, are stars. Moon does not twinkle. Therefore moon is not a star.
(Q) All the metals are not in solid forms. Mercury is in a liquid form. Therefore, mercury is also a metal.
- (P) Girls play chess—Chess is a difficult game. Therefore, girls play a difficult game.
(Q) Sheela is a duck. All ducks are naughty. Therefore, Sheela is naughty.
- (P) Monkeys like mango. All men like mangoes. Therefore, all men are monkeys.
(Q) Planets are stationary. Earth is a planet. Therefore, earth is stationary.
- (P) Some mangoes are apples. All guavas are mangoes. Therefore, all apples are guavas.
(Q) Some mangoes are apples. All apples are grapes. Therefore, some mangoes are grapes.
- (P) Some tables are grass. All stools are grass. Therefore, some stools are tables.

- (Q) Every sensible person likes music. Indians are sensible people. Therefore, Indians like music.
- (P) All fish can fly. Some fish are birds. Therefore, some birds can fly.
(Q) All fish are birds. All birds are naughty. Therefore, all fish are naughty.
- (P) No policeman likes beauty. He is a policeman. Therefore, he does not like beauty.
(Q) Some musicians are not rich. All musicians are polite. Therefore, all polite persons are not rich.
- (P) All musicians are rich. No rich person is polite. Therefore musicians are not polite.
(Q) Only a Newton can solve this problem. He is Newton. Therefore, he can solve this problem.
- (P) All caps are red. All students wear caps. Therefore, all students wear red caps.
(Q) All wives are women. Kamla is a woman. Therefore, Kamla is a wife.
- (P) All gold shines. All silver shines. Therefore, all gold is silver.
(Q) All gold shines. All silver shines. Therefore, all that shines is either gold or silver.
- (P) Some philosophers are intelligent. All philosophers are men. Therefore, some men are intelligent.
(Q) Some books can read. All books are pencils. Therefore, no pencil can read.
- (P) Either he is happy or rich. He is rich. Therefore, he is not happy.
(Q) Those who are rich commit suicide. He is not rich. Therefore, he will not commit suicide.

crow. Therefore, no fox is jackal.

- (Q) All crows are not jackals. Some crows are monkeys. Therefore, some monkeys are not jackals.

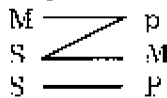
He did not stumble down. Therefore, he did not run fast.

- (Q) $A > B$, $B > C$ but not D . Therefore, $A > D$.

EXPLANATORY ANSWERS

1. (b): No conclusion can be drawn from two 'I' premises so statement P is wrong. Statement Q is correctly based on valid syllogism because of the word "every bottle" used in the statement provided we assume "safe" and "harmless" as synonymous.

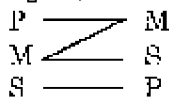
2. (d): 'All that' twinkles are stars means some stars twinkle. So moon may or may not be a star. See the figure below:



Here the syllogism is AOO which is not valid according to figure number 1. So P is not true.

In the statement Q, there are four terms (i) all the metals (ii) solid form (iii) mercury and (iv) liquid form. So no conclusion can be drawn.

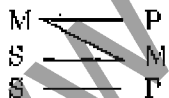
3. (b): P is true only paradoxically not logically. Q is logically true because valid syllogism "AII" is here. (See figure)



Hence II premise is major premise.

4. (b):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

"AAA" is not a valid syllogism according to the above figure so statement P is not true.



"AII" is a valid syllogism according to the above figure so statement Q is true.

5. (d):
$$\begin{array}{l} M \text{ --- } P \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

P is not true because if one of the premises is particular its conclusion must be particular. If inference is made, 'I' premise, i.e., 'some guavas are apples' even then it will be wrong because 'IAI' is not there in the figure below. So far as statement Q is concerned its figure will be:



According to the figure, the conclusion should be "some grapes are mangoes". So the inference of this statement is also not true, i.e., the major term can not be the subject of the inference.

6. (b):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

IAI is not a valid syllogism because it is not there in Figure No. 2. So statement P is not true. So far as statement Q is concerned its figure will be as follows:



Thus 'AAA' is a valid syllogism according to the figure given above.

7. (a):
$$\begin{array}{l} M \text{ --- } P \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$$

AII is a valid syllogism according to the Figure No. 3 so statement P is true. The figure for statement Q will be

S ——— P

And AAA is not a valid syllogism according to the Figure No. 4

8. (a): The figure for statement P will be

M ——— P
 S ——— M
 S ——— P

Here the conclusion is based on EIO Which is valid according to Figure No. 1. So P statement is correct. The figure for Q statement will be

M ——— P
 M ——— S
 S ——— P

It means syllogism is OAE which is not valid according to figure No. 3 But "some polite persons are not rich" is the correct conclusion, i.e., OAO is a valid syllogism.

9. (d): Statement P is wrong because major term can not be the subject of the conclusion. In the statement Q there are four terms (i) a Newton, (ii) solve this problem, (iii) He and (iv) Newton. Here 'a Newton' is a common noun while Newton is a proper noun.

10. (a): M ——— P
 S ——— M
 S ——— P
 AAA

P ——— M
 S ——— M
 S ——— P
 All

P statement is true because AAA is a valid syllogism but statement Q is not true because All is not a valid syllogism. The correct syllogism will be

.....
 "All wives are women. Kamla is a wife. Kamla is a women."

11. (d): P ——— M
 S ——— M
 S ——— P
 AAA

S ——— P
 AAA

Both the statement are false because AAA is not a valid syllogism according to figure No. 2.

12. (a): M ——— P
 M ——— S
 S ——— P
 IAI

M ——— P
 M ——— S
 S ——— P
 IAE

Here both the statements are based on figure No. 3. P is true because IAI is a valid syllogism but Q is false IAE is not a valid syllogism. In this statement the inference 'I, i.e., "some pencils can read" is correct.

13. (a): Statement P is correct because it is a disjunctive syllogism but statement Q is not true because it says that those who are rich commit suicide. It does not mean that only rich commit suicide. There may be people other than rich who commit suicide. Its figure is

M ——— P
 S ——— M
 S ——— P
 AOO

This AOO syllogism is not valid according to figure No. 1

14. (b): No conclusion can be drawn from two particular premises so statement P is false but Q is true because it is based on valid syllogism EIO. Its figure is

M ——— P
 M ——— S
 S ——— P

15. (a): In a hypothetical syllogism if consequent is denied then antecedent will also be denied in an affirmative statement. So statement P is true and Q is not correct because relation between A and D is not clear from the statement, i.e., A > B, D > B > C.

Type VIII

Directions: In each of the following questions two statements are given followed by an inference. Mark (a) if the inference is definitely true, mark (b) if the inference is definitely false, mark (c) if the inference is probably false or true and mark (d) if inference can not be drawn.

1. (a) My son is not old enough to vote.
(b) My son has handsome personality.
Inference: My son is a boy under 18 years of age.
2. (a) Those who are honest are good teachers.
(b) Hard working people are honest.
Inference: Hard work is the necessary quality of a good teacher.
3. (a) All wives are women.
(b) She is a woman.
Inference: She is a wife.
4. (a) All monkeys wear rings.
(b) All rings are blue.
Inference: All monkeys wear blue rings.
5. (a) Cats like rats.
(b) Rats like bread.
Inference: Bread is liked by cats.
6. (a) Happy is one who is contended.
(b) Religious people are contended.
Inference: Religious people are happy.
7. (a) Glass is a brittle.
(b) This substance is not brittle.
Inference: This substance is not glass.
8. (a) Either he is happy or he is poor.
(b) He is happy.
Inference: He is poor.
9. (a) Metals are generally malleable or ductile.
(b) X is neither malleable nor ductile.
Inference: X is not a metal.
10. (a) Birds fly in the sky.
(b) Nightingale fly in the sky.
Inference: Nightingale is a bird.
11. (a) As we go higher, we feel cold.
(b) As we go higher, there is a decrease in atmospheric pressure.
Inference: We feel cold on the decrease of atmospheric pressure.
12. (a) Mice eat cheese.
(b) Cheese is used in omelette.
Inference: Mice can eat omelette.
13. (a) P is behind M and N.
(b) Q is behind P.
Inference: Q is behind M.
14. (a) $A < C$ but not D.
(b) $B < C$.
(c) $A = E$.
Inference: $E > D$.
15. (a) L is the brother of K.
(b) K is the friend of M.
Inference: L is the friend of M.
16. (a) Mammals cause their young ones to drink milk.
(b) Rabbit causes their young ones to drink milk.
Inference: Rabbit is a mammal.
17. (a) To rise early in the morning is useful for health.
(b) Geeta rises early in the morning.
Inference: Geeta should be healthy.
18. (a) This is the bus for route No. 10.
(b) Buses of route No. 10 generally go to Connaught Palace.
Inference: This bus goes to the Connaught Place.
19. (a) There should be no more than three children to any sensible person.
(b) Raheem has three children.
Inference: Raheem is certainly a sensible person.
20. (a) I know a professor of a university.
(b) He has beard.
Inference: All the professors of the university have beard.
21. (a) Some intelligent people are happy.
(b) Some intelligent people are rich.
Inference: Some who are rich are happy.
22. (a) No student likes football.
(b) Football is not a good game.
Inference: No student likes good game.

23. (a) Honesty is valuable for businessmen.
 (b) Some businessmen are not honest.
Inference : Some businessmen are not valuable.

24. (a) Two and two makes four.
 (b) Four is a numerical figure.
Inference : Two and two is a single numerical figure.

EXPLANATORY ANSWERS

1. (c): The voting age has not been given here. So we can not definitely say about the age of the child. We can only assess the boy on the basis of the voting age common in India and boys of this age generally have handsome personality.
2. (c): All hard working people are honest and honest are good teachers. So hard work is the quality of a good teacher but it is not the only quality that he must have. There are other qualities needed by him to be a good teacher. It is probably not true because the criteria of necessary qualities have not been given here.
3. (c):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \\ \text{All} \end{array}$$

 All is not a valid syllogism.
 She may or may not be a wife.
 The inference is more close to probably true.
4. (c): This is not a valid syllogism according to figure No. 4 where AAA is not there. So it is probably true because all the rings are blue which monkeys wear. Moreover the major term cannot be the subject of the conclusion.
5. (b): There are four terms in the statement so conclusion drawn on the basis of them will be definitely false.
6. (c): The inference is not definitely true because of the fallacy of division.
7. (a):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$$

 Valid syllogism of AOO follows here.
 So the inference is definitely true.
8. (b): The correct inference is "he is not poor".
9. (c): The word 'generally' used in the

statement (a) makes the inference probably true or probably false. It means that there is at least one metal which is neither malleable nor ductile.

10. (c):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \\ \text{All} \end{array}$$

All is not a valid syllogism because it is not there in figure No. 2. Even then it is not definitely false because some that fly in the sky are birds and nightingale may be from among them.

11. (c): The major term cannot be the subject of the conclusion so it is not true. There are other reasons also that causes cold and atmospheric pressure is one of them. So the inference may be probably true or probably false.
12. (b): The major term can not be the subject of the conclusion.
13. (a): Q P M N
14. (a):
$$\begin{array}{ll} D < A < C & (1) \\ B < C & (2) \\ D < A < B < C & (3) \\ A = E & (4) \\ E > D & (5) \end{array}$$
15. (c): There are four terms.

16. (c):
$$\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \\ \text{All} \end{array}$$

All is not a valid syllogism according to figure No. 2 so inference is false. Since "mammals cause their young ones to drink milk". It does not mean that only mammals do that. There may be others that cause their young ones to drink milk. If rabbit belongs to the latter category the inference is false but if he belongs to the category of mammal who feed their young ones the inference will

be true. In this way we say that the inference is probably true or probably false.

17. (c): There may be other ways of being healthy besides rising early in the morning. So because of the fallacy of composition the inference is probably true or probably false.
18. (c): The word 'generally' clarifies that the inference is not definitely true.
19. (c): The inference "Raheem is a sensible person" is probably true because of the fallacy of division but the word 'certainly' makes it more near to false. So the inference is probably false or probably true.

20. (b): I know only one professor who has heard and other professors are not known to me. So the conclusion must be false. And the inference that "some professors of the university have heard" is probably false or probably true.
21. (b): No conclusion can be drawn from two particular premises (Rule No. 7).
22. (d): No conclusion can be drawn from two negative premises (Rule No. 5).
23. (d): There are more than three terms in the two premises. So no conclusion can be drawn.
24. (d): Major term is not distributed at all. So conclusion can not be drawn. (Fallacy of the middle term).

Type IX

Directions: One statement is given in each of the following questions followed by two assumptions. Mark (a) if assumption I is implicit, mark (b) if assumption II is implicit, mark (c) if both I and II are implicit and mark (d) if neither of them is implicit.

1. Go by aeroplane from Delhi to Chennai to reach quickly.
Assumption I: Delhi and Chennai are connected by air services.
Assumption II: There is no other means of going from Delhi to Chennai.
2. Himalaya drugs improve haemoglobin keeping the complexion fair and glaring.
Assumption I: People like fair and glaring complexion.
Assumption II: Complexion becomes dull and dark owing to the deficiency of haemoglobin.
3. Opening a sports centre in Aligarh is of no use.
Assumption I: Inhabitants of Aligarh have no interest in games.
Assumption II: Sports have lost its credibility today.
4. You don't get to be on top overnight.
Assumption I: People desire to be on top.
Assumption II: Sustained efforts are necessary to be on top.
5. Although the city was under knee deep of water for a week in this monsoon, there was no outbreak of cholera.

Assumption I: Cholera spreads usually in monsoon.

Assumption II: Water concentration at a place leads to cholera.

6. Ravi is too intelligent to fail in the examination.

Assumption I: Very intelligent boys do not fail in the examinations.

Assumption II: Those who are not intelligent at all may fail in the examinations.

7. The present education system needs overhauling.

Assumption I: The present education system has become obsolete.

Assumption II: Changes result in improvement.

8. TV, X—The neighbour's envy. The owner's pride—a TV advertisement.

Assumption I: People are envious of their neighbour's superior possession.

Assumption II: One can tease one's neighbour by purchasing a TV.

9. You have to study hard for qualifying JRF.

Assumption I: Qualifying JRF is desirable.

Assumption II: Hard work leads to success.

10. In a world, in a rush, Book Digest becomes indispensable.

- Assumption I:** Book Digest should not be used when there is no rush.
Assumption II: Book digest is useful only in normal time.
11. Crop condition continues to be critical before rains.
Assumption I: It is expected to improve after rain.
Assumption II: Unless it rains no change in crop condition is likely to be.
12. You know that your suit is excellent when people ask you about your tailor who sewed it.
Assumption I: People do not ask about your tailor if your suit is not good.
Assumption II: Your tailor has made excellent suit for you.
13. Successful man has the ability to judge himself correctly.
Assumption I: Successful man can not make a wrong judgement.
Assumption II: To judge others is of no use for successful man.
14. Delink degrades with job. Then boys will think twice before joining colleges.
Assumption I: Boys join colleges for getting jobs.
Assumption II: Degree is of no use for getting jobs.
15. If you have any problem, bring them to me.
Assumption I: I am able to solve any of your problems.
Assumption II: You don't have any problem.
16. Consult me before taking any decision on investment.
Assumption I: You may take a wrong decision if you don't consult me.
Assumption II: It is important to take right decision on investment.
17. Everybody likes reading "Alif Laila".
Assumption I: Alif Laila is the only important reading material.
Assumption II: Alif Laila is an interesting story.
18. Holy scriptures are worth reading. However we don't read them.
Assumption I: People don't understand them that is why they are not reading it.
- Assumption II:** People are themselves guilty for their actions.
19. Warning : Cigarette smoking is injurious to health.
Assumption I: Non-smoking promotes health.
Assumption II: This warning is not necessary at all.
20. This book is so prepared that even a layman can study science in the absence of teachers.
Assumption I: Layman wants to study science without teacher.
Assumption II: This book is a good substitute for a teacher.
21. Let the government increase the present rate of taxation to recover the deficit in the budget.
Assumption I: Present rate of taxes is very low.
Assumption II: If government wants to get away with the budgetary deficit it should increase tax rate.
22. Every mature citizen of India exercises adult franchise.
Assumption I: Children are entitled to cast their votes.
Assumption II: Adult suffrage is related to those who are grown up.
23. Everybody loves 'Popular Magazine'.
Assumption I: People love no other magazine.
Assumption II: It is incumbent on everyone to love this magazine.
24. Of all the newspapers published in India 'The Hindu' has the largest number of readers.
Assumption I: The volume of readership of all newspapers in India is known.
Assumption II: No newspaper in India other than 'The Hindu' has a large readership.
25. The new education policy envisages major modification in the educational system.
Assumption I: The present education system needs improvement.
Assumption II: The present education system is inconsistent with the national needs.

26. Ghosts haunt desert places only.
Assumption I: They do not want the interference of human being.
Assumption II: Every deserted residence is haunted.
27. Some patients die because of sheer negligence.
Assumption I: Negligence kills the patient.
Assumption II: They are neglected by doctors nor by their family.
28. Computer education should start at schools.
Assumption I: Learning computer is easy.
Assumption II: Computer education fetches jobs easily.
29. An Indian beautician is opening a beauty parlour in New York.
Assumption I: New York lacks beauty parlours.
Assumption II: There are better business prospects in New York.
30. Indian scientists working abroad do not come back and serve their motherland.
Assumption I: India lacks such highly sophisticated labs, instruments and other amenities as they have there.
Assumption II: India can not afford to pay them as much as they get there.
31. "Children who get encouragement usually perform better". A note by the principal to the parents.
Assumption I: Some parents do not encourage children.
Assumption II: Parents may follow principal's advice.
32. Some businessmen are supposed to have a Midas Touch.
Assumption I: Every business, they put their hands into gives excellent returns.
Assumption II: Midas was a businessman.

EXPLANATORY ANSWERS

1. (a): One is suggested to go to Chennai from Delhi by aeroplane. It means both the cities are connected by air services. But the word 'quickly' used in the statement clarifies that there are other means of transportation also. So only assumption I is implicit.
2. (c): Complexion is directly related to haemoglobin. Those who do not have fair and glaring complexion feel concern over the problem and uses Himalaya drugs in order to improve haemoglobin and hence maintain complexion.
3. (a): Here only assumption I is implicit because people of Aligarh have no interest in games so sports centre is of no use here. Assumption II does not relate with the statement at all so this is not implicit.
4. (b): Assumption I is not implicit because statement is 'I' premise while assumption is 'A' premise but assumption II is implicit because no one can get on top overnight. If he wants to be on top he should do sustained efforts.
5. (c): Although there was water logging, yet there was not outbreak of cholera. It means water logging leads to cholera. And water logging is usually seen in monsoon so cholera and monsoon are also related.
6. (c): Too intelligent means very intelligent so assumption I is implicit. On the other hand if some one is very much intelligent he rarely fails and that who is not intelligent at all may fail. So assumption II is also implicit.
7. (a): If a thing is outdated it should be overhauled. So assumption I is implicit. But changes does not necessarily result in improvement even if it is outdated.
8. (a): Assumption I is implicit because if someone owns a TV, X his neighbour may be envious of him because of this. But assumption II is not implicit because covying and teasing do not mean the same thing.
9. (c): If you want to qualify JEE you will have to study hard. It is hard work that leads to success. Assumption I is also

at that juncture. The person is needing it and he is being suggested.

10. (d): Book Digest become necessary only when we are in rush and want to save time. So both assumptions are not implicit.
11. (c): Crop is dependent on rains. Whatever problem the crop faces ceases to be after rains. Thus any improvement in crop condition is directly related to rains. If it does not rain its condition will continue to be critical. Thus both the assumptions are implicit.
12. (c): If people ask you about your tailor it means your suit is excellent and your tailor is an excellent tailor. So both the assumptions are implicit.
13. (d): Successful man judge himself correctly but it does not mean that he will never have wrong judgement. Assumption II is also not implicit because if he judges others he may or may not be a successful man.
14. (a): If degree is not given importance for job, then no one would care for college education. Thus boys go to college education for jobs and importance of degree is secondary to job. Thus only assumption I is implicit.
15. (a): If someone is able to solve a problem only then he will say like that, but assumption II is not implicit at all.
16. (c): You are not competent enough to take any right decision on investment which is very important. Thus both the assumptions are implicit. A person consults others only when he need it or he is not able to take a right decision on important issues.
17. (b): Assumption I is not implicit because 'only' is not there in the statement but assumption II is implicit because reading a material is liked by all only when it is interesting or significant from any point of view.
18. (b): Only conclusion II is implicit.
19. (d): Both of the assumptions are not implicit because those who are not

in doubt, ill effect on health but non-smoking does not necessarily promote health, because of this reason warning is necessary.

20. (b): This book is good because no teacher is needed to teach it. Thus assumption II is implicit but assumption I is not implicit because it is we who want to acquaint the layman with the knowledge and its converse is not true according to the statement.
21. (b): There are many reasons behind budgetary deficits. Thus if the rate of tax is low even then it can not be said that deficit is the product of low tax rate. In this way first assumption is not implicit but II one is implicit as taxes are a good source of finance to cover the deficit.
22. (b): Adult sufferage is related to youths so children are not entitled to it. But assumption II is implicit because grown up means those adults who are grown up.
23. (d): Popular Magazine, is the name of a magazine. If everyone loves it, it does not mean that he does not love other magazines. Thus both assumption I and II are not implicit.
24. (a): Assumption I is implicit because unless we know the volume of readership of all newspapers we can not conclude about the popularity of a particular newspaper. Here the study is comparative in nature so we can not say on the basis of only this meagre information that other newspapers has less number of readers. Thus assumption II is not implicit.
25. (c): Major modification in a system is done only when it has become outdated and improvement can be made by modification. Thus both assumption I and II are implicit.
26. (a): Desert place means the place where no one lives. So only assumption I is implicit but the word 'every' used in the second assumption makes it non-

- implicit.
27. (b): The assumption I is not implicit because statement is "T" premise while assumption is A premise.
28. (a): Assumption I is implicit because had computer education not been easy it would not have been suggested for school boys, but it is not necessarily true that we can get job easily after

computer education.

29. (b): It is implicit because only then someone will go for business there.
30. (c): Both are the genuine reasons that is why they do not come back here.
31. (c)
32. (a): Assumption II is irrelevant because a proverb has been used in the statement which has close meaning to assumption I.

Type X

Directions: Two statements followed by a conclusion are given in each question that follows. Mark (a) if only first statement supports the conclusion, Mark (b) if only second statement supports the conclusion. Mark (c) if both the statements together support the conclusion and Mark (d) if neither of them supports the conclusion.

1. (i) All rivers are mountains.
(ii) All rivers are stones.
Conclusion : Some mountains are stones.
2. (i) All mangoes are bananas.
(ii) Some bananas are sweets.
Conclusion : Some sweets are mangoes.
3. (i) Deficit financing is responsible for rise in prices.
(ii) Deficit financing is essential for development.
Conclusion : Rise in prices is essential for development.
4. (i) Some vegetables are fruits.
(ii) Fruits are good for health.
Conclusion : Some vegetables are good for health.
5. (i) All elements are ductile.
(ii) All elements are fragile.
Conclusion : No element is non-ductile.
6. (i) All dolls are beautiful.
(ii) All dolls are fine source of recreation.
Conclusion : There is no doll which is not beautiful.
7. (i) All reading material is useful.
(ii) Some reading material is knowledgeable.
Conclusion : Some reading materials do not give knowledge.

8. (i) There is dampness in the climate of Congo forests.
(ii) Too much dampness in the climate is harmful to the health of its inhabitants.
Conclusion : Dampness in Congo forest is harmful to the health of its inhabitants.
9. (i) The water level of the Gomti is rising.
(ii) Some people live near the Gomti.
Conclusion : There is a danger to those living near the Gomti to lose life and property.
10. (i) Pandit Nehru was born in U.P.
(ii) Maulana Azad was born in U.P.
Conclusion : All freedom fighters were born in U.P.
11. (i) Carbohydrates are helpful for the formation of the body.
(ii) Growing children need good nutrition.
Conclusion : Carbohydrates are needed for growing children.
12. (i) Warriors generally do not marry.
(ii) He is a warrior.
Conclusion : He should be Bachelor.
13. (i) Boys take interest in music and dancing.
(ii) Radha has no interest in music and dancing.
Conclusion : Radha is not a boy.
14. (i) Many Hindus go to Lahore for pilgrimage.
(ii) Many Muslims come to India for Urs.
Conclusion : There is a mutual agreement between Hindus and Muslims.
15. (i) Most of the murderers leave any proof.
(ii) Mr. Gupta was killed by some one.
Conclusion : His murderer will be arrested soon.

1. (d): $\begin{array}{l} M \text{ --- } P \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$

The correct conclusion will be "some stones are mountains."

2. (d): $\begin{array}{l} P \text{ --- } M \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$

"All" is not a valid syllogism here.

3. (d): Both the statement do not support the conclusion.

4. (d): $\begin{array}{l} P \text{ --- } M \\ M \text{ --- } S \\ S \text{ --- } P \end{array}$

Conclusion is not logically true, because major term 'some vegetables' can not be the subject of the conclusion.

5. (a): It is the obverted form of the statement (i).
 6. (a): It is the obverted form of the statement (i).
 7. (b): It is the obverted form of the statement (ii).

8. (d): The word "too much" used in the statement (ii) makes the conclusion wrong.

9. (a): Second statement is not needed at all to draw this conclusion.

10. (d): Due to fallacy of composition the conclusion is wrong. We can not generalize a thing on the basis of just a few incidents.

11. (a): Growing children passes through the stage of the formation of the body. So statement II is not needed to draw the conclusion.

12. (d): The word 'generally' used in the first statement makes the conclusion false.

13. (c): $\begin{array}{l} P \text{ --- } M \\ S \text{ --- } M \\ S \text{ --- } P \end{array}$

Valid syllogism of AOO is here.

14. (c): 'Go and come' clarifies that there is mutual agreement.

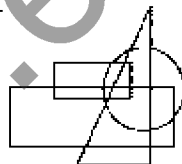
15. (d): It may be probably true.

Type XI

1. On the basis of the diagram shown which statement do you consider correct?

- (a) Some farmers who are investors, they are either backward or illiterates or both.
 (b) Some non investor farmers are backward and illiterates.
 (c) Those backwards who are not illiterates are either farmers or investors or both.
 (d) All of these

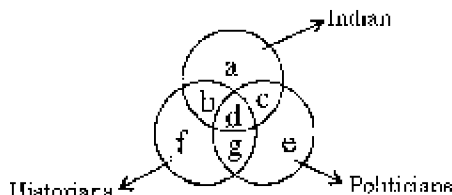
Square — Investors
 Rectangle — Illiterates
 Circle — Backward
 Triangle — Farmers



2. In a group of five person A, B, C, D and E one plays Tennis, one plays Chess and one Hockey. A and D are unmarried women and play no game. There is a couple among them where E is husband of C. No woman plays either Chess or Hockey. B is the brother of C and he neither plays

Tennis nor Chess. Who plays Hockey here?

- (a) A (b) B
 (c) C (d) E
3. Points out the letter which represents Indians and historians but not politicians on the basis of these three circles?
- (a) b (b) f
 (c) b and f (d) b and g



4. On the basis of the figure in question 3 which of the following statements is not correct?
- (a) The area that represents the Indian historian who is a politician also is d.
 (b) f and e areas do not represent Indians.

- (c) c area represents Indian politician but not historian.
 (d) c is not an area representing politicians.

5. A, B and C are intelligent, A, D and E are laborious and D, C and E are honest and A, B, and E are ambitious. Which of the following are not honest?

- (a) A and B (b) C and A
 (c) A and D (d) C, A and B

6. On the basis of the information given in question No. 5 who is neither laborious nor honest?

- (a) A and D (b) B only
 (c) E only (d) C only

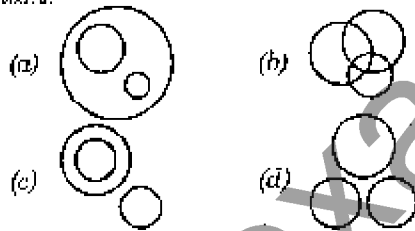
7. Anita and Geeta are experts in dancing and music. Seeta and Geeta are expert in music and painting. Anita and Neeta are expert in debate and dancing. Neeta and Seeta are expert in Painting and debate. Which girl is not expert in painting.

- (a) Anita only (b) Seeta only
 (c) Anita and Geeta (d) Neeta only

8. On the basis of question No. 7 which girl is expert in all fields.

- (a) Anita (b) Seeta
 (c) Geeta (d) None of these

Directions: Questions from 9 to 12 are based on the following figures. Which of the following figures represents the best relationship among the three terms used in the question.



9. Players, students and girls

- (a) A (b) B
 (c) C (d) D

10. Player, Uncle and Aunt

- (a) A (b) B
 (c) C (d) D

11. India, Calcutta and Islamabad

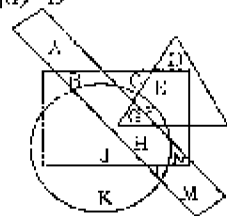
- (a) A (b) B
 (c) C (d) D

12. Teacher, Principl, Son

- (a) A
 (c) C

- (b) B
 (d) D

Square = Clerk
 Triangle = Bachelor
 Rectangle = Player
 Circle = Male



Directions: Question from 13 to 16 is based on the above figure. Various letters represent various types of persons.

13. The bachelor clerk who is a male player is represented by the letter.

- (a) G and F (b) G only
 (c) H only (d) I only

14. Persons who are neither bachelor nor male but player and clerk are represented by

- (a) B and N (b) B and C
 (c) B and L (d) L and H

15. Which of the following group of letters have at least one property common?

- (a) ADKM (b) ADMIN
 (c) ADIK (d) KMAC

16. The male clerk who is a player but not bachelor is

- (a) B (b) H
 (c) J (d) I

17. A, B, C, D, E and F were playing cards. A's father, mother and uncle were in the group. There were two females also: B was the mother of A who scored higher than her husband. D scored higher than E but less than F. E's nephew scored minimum. A's father scored more than F but even then he could not win. Who win the game?

- (a) E (b) B
 (c) C (d) F

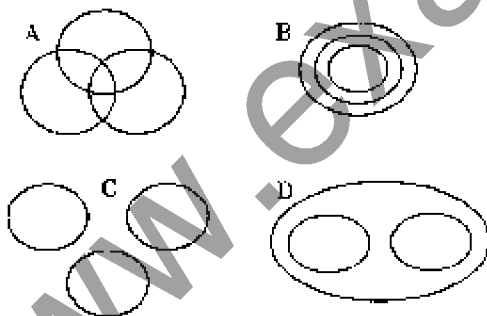
18. From the informations given in Question 17 who is the father of A

- (a) C (b) D
 (c) F (d) None of these

19. Branches of five nationalized banks A, B, C, D and E in M.P are as follows: A, B, and C are in Indore and Bhopal, A, B and E are in Indore and Gwalior, B, C, and D are in Raipur and Bhopal, A, E and D are in Gwalior and Jabalpur, C, E and D are in Raipur and Jabalpur which bank has branches in all cities except Raipur.

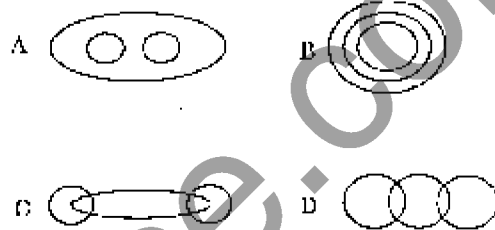
- (c) A (d) F
20. From the data given in question No. 19, which bank has branches in minimum number of cities?
 (a) A (b) B
 (c) C (d) None of these
21. There are five players A, B, C, D and E in a group. One of them plays Football, one plays Tennis and one plays Chess. A and D are maids and play no game. No woman plays either Chess or football. There is a married couple in the group where E is husband. C's brother is B who is neither Chess player nor Tennis player - Who plays Chess?
 (a) E (b) B
 (c) C (d) F
22. From the data given in question No. 21 who is Tennis player?
 (a) E (b) D
 (c) C (d) F
23. List of the females from the information given in question 21.
 (a) A and D and C
 (b) B and C
 (c) B and C and D
 (d) None of these

Directions (Qs. 24-28): Questions here are based on the following figures. Study the figures and relate them to the terms and concepts given in questions.



24. Hard bed, Sofa, Furniture
 (a) A (b) B
 (c) C (d) D
25. Crocodile, Eagle, Lion
 (a) A (b) B
 (c) C (d) D
26. Country, State, Chief Minister

- (c) C (d) D
27. Teacher, Writer, Philosopher
 (a) A (b) B
 (c) C (d) D
28. Father, Son, Daughter
 (a) A (b) B
 (c) C (d) D
29. Which of the following figures correctly expresses the relationship between language, Oriya and Urdu.



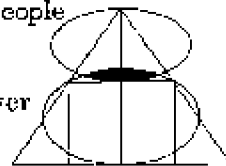
- (a) A (b) B
 (c) C (d) D
30. Which of the above figures correctly expresses the relationship between tree, bee and housebird.
31. Study the figure and answer the question.

Triangle = Educated people

Square = Policemen

Circle = Road Tax payer

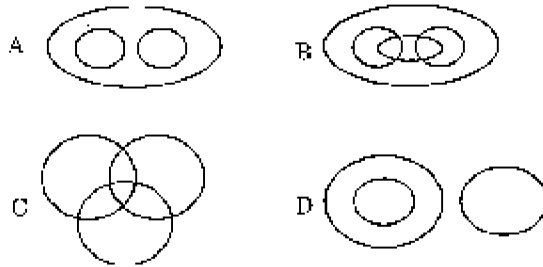
Eclipse = Shopkeeper



Which of the following conclusions is not correct on the basis of the figure given above?

- (a) All road tax paying policemen are educated
 (b) Some educated people are not policemen but pays road tax
 (c) None of the educated shopkeeper is a policeman nor an educated policeman is a shopkeeper
 (d) All educated policemen pay road tax
32. On the basis of the figure given in question No. 31 we can say that:
 (a) policemen don't pay road tax
 (b) shopkeepers do not pay road tax
 (c) some shopkeepers are educated
 (d) some policemen are shopkeepers

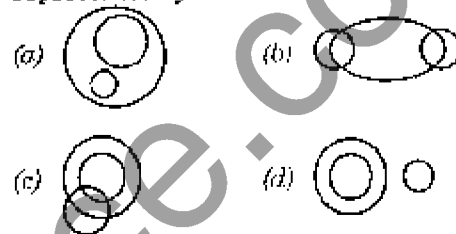
Directions: Questions from 33 to 35 are based on the following figures. Which figure represents the exact relationship with the variables given in questions.



33. Man, Teacher, Tailor master
 (a) A (b) B
 (c) C (d) D
34. Animal, Dog, Cat
 (a) A (b) B
 (c) C (d) D
35. Male, Horse, Man
 (a) A (b) B
 (c) C (d) D
36. A group of 30 students play cricket and football. 20 plays cricket and 15 plays football. Each student plays at least one game. How many of them plays both?
 (a) 5 (b) 10
 (c) 0 (d) 15
37. There are six books A, B, C, D, E and F. B, C, and F have blue covers while the rest have red covers. D and F are new books while the rest are old books. A, C and D are law reports while the rest are of physics. Which is the red covered new law report book?
 (a) A (b) B
 (c) C (d) D
38. Which two are old physics books and have blue cover from the data given in Q. 37?
 (a) B and F (b) B and E
 (c) B and C (d) E and F
39. Which is blue covered, old and a law report book from the data given in Q. 37?
 (a) C (b) B
 (c) E (d) F
40. In a group of five persons A, B, C, D and E one is a farmer, one is a physicist, one is a journalist, one is an industrialist and one is a doctor. A, C + doctor prefer tea to

coffee and two of them B + Journalist prefer coffee to tea. Industrialist + D + A are friends but two of those prefer tea to office. The farmer is C's brother. Who is a farmer.

- (a) A (b) B
 (c) C (d) D
41. From the information given in Q. 40 who is a physicist?
 (a) A (b) B
 (c) C (d) D
42. Who is a journalist according to the information given in Q. 40?
 (a) A (b) E
 (c) C (d) D
43. Players, father and mother can be represented by



44. Ram, Mahesh and Mohan play badminton. Mahesh, Ramesh and Pramod play tennis. Mahesh, Ramesh and Ram play chess, who plays chess and badminton but not tennis?
 (a) Ram (b) Mahesh
 (c) Pramod (d) Ramesh
45. From the information given in Q. 44 who plays all the games?
 (a) Pramod (b) Mahesh
 (c) Ram (d) Ramesh
46. Snake, reptile and rat can be represented by
-
- (a) (b)
-
- (c) (d)
47. Cattle, goat and sheep can be represented by
-
- (a)



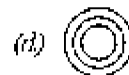
48. Air, water and sand can be represented by



49. Human, women, and educated, can be represented by



50. Shirt, garment and cloths, can be shown by



51. Five friends Lalit, Feroz, Shahid, John and Manjeet are painter, singer, dancer, poet, or sculpture. Lalit and Feroz are not sculpture or dancer. John and Manjeet are not poet or painter. Shahid is neither painter nor dancer. Manjeet is not a dancer. Feroz and Shahid are not poet or singer. Who is poet?

- (a) Manjeet (b) Lalit
(c) Shahid (d) Feroz

52. A team of four from A, B, C, D, E, F and G is to be selected according to the following conditions:

- | | |
|---------|----------------------|
| B and C | must be together |
| D and E | must not be together |
| A and G | must be together |
| F and D | must be together |
| C and G | will not be together |
| C and E | must be together |

The team will have

- (a) ADFG (b) ABCE
(c) BCAG (d) None of these

53. A group of 25 students play Hockey, Football and Cricket. 5 plays all the three games, 12 plays hockey and football only, 13 plays football and cricket only. How many of them do not play any game?

- (a) 5 (b) 7
(c) 8 (d) 11

54. On the basis of the data given in Q. 53 how many students do not play football

- (a) 8 (b) 13
(c) 10 (d) 12

EXPLANATORY ANSWERS

1. (c): Those backwards who are not illiterates are out of the rectangle that part belongs to triangle and square both.

2. (b): Out of five three are players. A and D

are unmarried women and play no game. No women play chess or hockey. C is only woman excluding A and D. So she must be playing Tennis — B neither plays tennis nor chess. It

means he must be playing hockey. The only player after B (male and C (female) is E so his game is chess. It is clear from the following table.

G	T	C	H	Un	Br	Hu	Wi
A	x	x	x	✓	x	x	x
B	x	x	✓		✓		
C	✓	x	x				
D	x	x	x	✓	x	x	x
E		✓				✓	

3. (a): h letter is in the top circle as well as in the left hand circle but right hand circle is away from this letter.
 4. (d): Area C is a part of the right hand circle so the statement is wrong.
 5. (a): Put a right mark on the qualities that a particular member possesses as is done in the table here.

	Intelligent	Laborious	Honest	Ambitious
A	✓		✓	✓
B		✓		✓
C		✓		
D			✓	✓
E			✓	✓

6. (b): B is neither laborious nor honest.
 7. (a): See the following table.

	Painting	Music	Debate	Dance
Anita		✓	✓	✓
Seeta	✓	✓	✓	
Neeta	✓		✓	✓
Geeta	✓	✓		✓

8. (d):
 9. (b): Some players may be students and girls and some girls may be players and students. So figure B is most suitable.
 10. (d): Some players may be uncles and some may be aunts. Similarly, some uncles may be players and some aunts may be players. But uncles may not be aunts and aunts may not be uncles. So figure D is most suitable.
 11. (c): Calcutta is a city of India which is represented by a big circle with a small circle in it and Islamabad is not the part of India.
 12. (a): Teacher may be the principal of the college and may have a son.

13. (b): The letter is inside the circle, square, triangle and rectangle.

14. (a): These two letters are inside the square and the rectangle but outside the circle and triangle.

15. (c): A is neither clerk, nor bachelor nor male but only a player. D is bachelor but he is neither male clerk nor a player. Same is the case with I and K. Thus they all belong to four different fields.

16. (b): It is outside the triangle but inside the circle, square and rectangle.

17. (b): B is the mother of A > her husband (1)
 $F > D > E$ (2)
 K's nephew was A who scored minimum (3)
 B's husband > F (4)
 B's husband is A, B, C, D, E, K. —
 $B, F, D, E, A = C$ (5)
 $B > C > F > D > E > A$ (6)

18. (a): B's husband is C and A is the son of B so C is the father of A.

19. (c): See the table given below:

	Banli	Indore	Bhopal	Gwalior	Raipur	Jabalpur
A	✓	✓		✓		✓
B	✓	✓		✓	✓	
C		✓	✓		✓	✓
D			✓	✓	✓	✓
E	✓			✓	✓	✓

20. (d):

21. (a): A and D (maids) play no game.

22. (c): A, B, C, D and E - A & D = BCE are players

23. (a): E is the husband of B or C
 B is the brother of C
 E is the husband of C
 B neither plays chess nor tennis
 B plays football (1)
 No woman plays chess or football.
 C does not play chess or football
 C plays tennis (2)
 E plays Chess (3)

24. (d): Both Sofa and hard bed come under the category of furniture.

25. (c): Crocodile lives in water, lion on land and eagle in the air. So all of them are totally different.

are run by the chief ministers.

27. (a): There are some teachers who are writers and philosophers. There are writers who are teachers and philosophers and there are some philosophers who are also teachers and writers.

28. (d): Father is represented by the big circle

29. (a): Oriya and Urdu are two languages represented by small circles in a big one.

30. (a): Both bee and housebird make nests on trees.

31. (d): First conclusion is correct because square is in the circle and some part of the circle is in the triangle. Second conclusion is correct which is clear from the shaded area. Third statement is also correct because square is just touching the eclipse and last one is wrong.

32. (c): Triangle covers some parts of eclipse.

33. (b): A man can be a teacher as well as a tailor master with half-half job.

34. (a):

35. (d):

36. (a): $15 + 20 = 35 - 30 = 5$.

37. (d):

A	B	C	D	E	F
Red	Blue	Blue	Red	Blue	Red
Old	Old	Old	New	Old	New
Law	Phy	Law	Law	Phy	Phy

38. (b):

39. (c):

40. (a): $A + C + \text{Doctor} = \text{Tea}$
 $D + A + \text{Industrialist} = \text{Coffee}$
 (only two of them)
 $D + \text{Industrialist} = \text{coffee}$
 $B + \text{Journalist} = \text{coffee}$
 $B = \text{Industrialist}$
 $D = \text{Journalist}$
 Subtracting $B + D$ from $A + B + C + D + E$
 $A + C + E = \text{Tea}$
 $A + C + \text{Doctor} = \text{Tea}$
 $E = \text{Doctor}$
 C 's brother is a farmer
 $A = \text{Farmer}$
 $C = \text{Physicist}$ is the last professional.

42. (d):

43. (b): Father and mother are of equal rank and two small circles represent them and big circle representing players is related to both in equal status.

44. (a):

Game	Ram	Mahesh	Framod	Hanesh
Badminton	✓	✓	✓	
Tennis		✓	✓	✓
Chess	✓	✓		✓

45. (b):

46. (c): Snake is a reptile but vat is a different animal.

47. (c): Goat and sheep both are cattle.

48. (a): All the three are entirely different things represented by three independent circles.

49. (b): All women are humans but only some of them are educated.

50. (d): All garments are made of cloth and shirt is a garment.

51. (b):

Name	Painter	Singer	Poet	Dancer	Sculpture
Lalit			✓	×	×
Feroz	✓	×	×	×	×
Shahid	×	×	×	×	✓
John	×		✓	✓	
Manjeet	×	✓	×	×	

52. (a): $B + C + D$

(1)

$B + C + E$

(2)

$C + G$ not possible

(3)

$G + D$

(4)

$A + G - D + F$

(5)

53. (a): 5 plays all. So $25 - 5 = 20$

12 plays H and F. So $20 - 7 = 13$

13 play F and C. So $13 - (1 + 8) = 4$

5 do not play any game.

54. (d):

H	F	C
5	5	5
7	7	
		1
		7

So $25 - 13 = 12$