
Syllogism : Possibilities

Questions based on possibilities are often asked in various competitive exams. To solve syllogism questions on possibilities, following points should be kept in mind:

- (1) When definite conclusions (either definitely true or definitely false) can be drawn from the given propositions, they are certainties. It is to be noted that conclusions can be drawn either by 'immediate inference' (implication or conversion) or by 'mediate inference' (combining pair of aligned propositions). For example, take an A-type proposition as given below:

All S are P

For this statement, following are the definite conclusions:

- (i) All S are P \rightarrow conversion \rightarrow Some P are S
[**Definitely True**]
[Since, on conversion of A-Type statement, we obtain I-type of statement]
- (ii) All S are P \rightarrow implication \rightarrow Some S are P
[**Definitely True**]
- (iii) No S are P [**Definitely False**]
- (iv) Some S are not P [**Definitely False**]

Therefore, the above drawn conclusions are cases of certainties.

- (2) When definite conclusions cannot be drawn from the pair of aligned statements (mediate inference), cases of possibilities exist.

It should be noted that there are only six cases where a conclusion can be drawn. These cases are as given below:

A + A = A

A + E = E

E + A = O*

E + I = O*

I + A = I

I + E = O

Except the abovementioned cases, in all other cases, possibilities exist.

A + I = -

A + O = -

E + E = -

E + O = -

I + I = -

I + O = -

O + [A or E or I or O] = -

Note: '-' stands for '**No conclusion**'.

Now, we analyse the different cases of possibilities in the following pages:

Immediate Possibilities

A-Type [All S are P]

I Implication

Conclusions:

(i) Some S are P [True]

(ii) Some S are not P [False]

(iii) No S are P [False]

The above three conclusions are either definitely true or definitely false.

II Conversion

We know that A-Type of statements can be converted to I-Type of statements. Therefore, All S are P \rightarrow conversion \rightarrow Some P are S

Hence, 'Some P are S' is a definite conclusion.

But 'All P are S' is a possibility.

E-Type [No S are P]

I Implication

Conclusions:

(i) All S are P [False]

(ii) Some S are P [False]

(iii) Some S are not P [True]

The above conclusions are either definitely true or definitely false.

II Conversion

No S are P (E) \rightarrow conversion \rightarrow No P are S (E).

Therefore, 'No P are S' is a case of certainty.

I-Type [Some S are P]

I Implication

Conclusions:

(i) No S are P [False]

The above conclusion is definitely false.

Cases of Possibilities:

(i) All S are P [Doubtful]

(ii) Some S are not P [Doubtful]

All the above statements are cases of possibilities.

II Conversion

Some S are P (I) \rightarrow conversion \rightarrow Some P are S (I). The above statement is a definite conclusion obtained by conversion of the given I-Type of proposition. There are some possibilities related to I-type of statements as given below:

(i) All P are S

(ii) Some P are not S

O-Type [Some S are not P]

I Implication

Conclusions:

(i) All S are P [False]

The above conclusion is definitely false.

Cases of Possibility:

(i) No S are P [Doubtful]

(ii) Some S are P [Doubtful]

The above statements are cases of possibilities.

II Conversion

We know that O-type of statements cannot be converted. Therefore, there can be no definite conclusion from the conversion of O-type of statements. However, the following possibilities exist:

(i) All P are S

(ii) No P are S

(iii) Some P are S

(iv) Some P are not S

Note: Here, for the cases of possibilities, we consider **O-Type** and **O*-Type** statements alike. For this reason we do not take up **O*-Type** as a separate case.

Summary

Cases of Possibility

A-Type [All S are P]

(i) All P are S

I-Type [Some S are P]

(i) All S are P

(ii) Some S are not P

(iii) All P are S

(iv) Some P are not S

O-Type [Some S are not P]

(i) No S are P

(ii) Some S are P

(iii) All P are S

(iv) No P are S

(v) Some P are S

(vi) Some P are not S

Mediate Possibilities

When we have been given any of the following types of pair of aligned statements, cases of possibilities exist:

A + I; A + O; E + E; E + O; I + I; I + O; O + [A or E or I or O]

Suppose, we have the following propositions:

1. A + I

All S are P

Some P are Q

2. A + O

All S are P

Some P are not Q

3. E + E

No S is P

No P is Q

4. E + O

No S is P

Some P are not Q

5. I + I

Some S are P

Some P are Q

6. I + O

Some S are P

Some P are not Q

Note: Similarly, we can write a pair of aligned statements for O + A, O + E, O + I and O + O also.

We know that from the above pairs of aligned statements, definite conclusions cannot be drawn. But some relationships between S and Q exist and we cannot say definitely that the relationships do exist. Therefore, cases of possibility arise. That is there are the possibilities that some relationships between S and Q exist. For any of the above pairs of aligned statements, following are the all standard cases of possibilities that exist between S and Q.

(a) All S are Q

(b) Some S are Q

(c) Some S are not Q

(d) All Q are S

(e) Some Q are S

(f) Some Q are not S

‘Either.....or’ Cases in Possibility

We will try to understand the ‘Either.....or’ cases of possibility by examples as given below:

Ex. 1: Statements: Some P are Q.

All Q are R.

No R is S.

Conclusions:

I All S being P is a possibility.

II All P being R is a possibility.

Explanation:

Some P are Q + All Q are R + No R is S = I + A + E = (I + A) + E = I + E = O = Some P are not S. From this O-Type of conclusion there is a possibility of all S being P. Therefore, conclusion I follows. Again, Some P are Q + All Q are R = I + A = I = Some P are R. From this conclusion, possibility of all P being R exists. Therefore, conclusion II follows. But if II is possible, I can't be possible. How? Then All P are R + No R is S = A + E = E = No P is S. Thus, both conclusions I and II can't follow simultaneously. Therefore, ‘**Either I or II follows**’ will be the correct answer.

Ex. 2: Statements: Some P are Q.

All Q are R.

No R is S.

Conclusions:

I All P being R is a possibility.

II All S being P is a possibility.

Explanation:

Some P are Q + All Q are R = I + A = I = Some P are R ⇒ All P being R is a possibility. Therefore, conclusion I follows. Again, Some P are Q + All Q are R + No R is S = I + A + E = (I + A) + E = I + E = O = Some P are not S ⇒ All S being P is a possibility. Therefore, conclusion II follows. But, conclusions I and II both cannot be true simultaneously. If I follows, All P are R + No R is S = A + E = E = No P is S. Hence II can't follow. Hence, ‘**Either I or II follows**’ will be the correct answer.