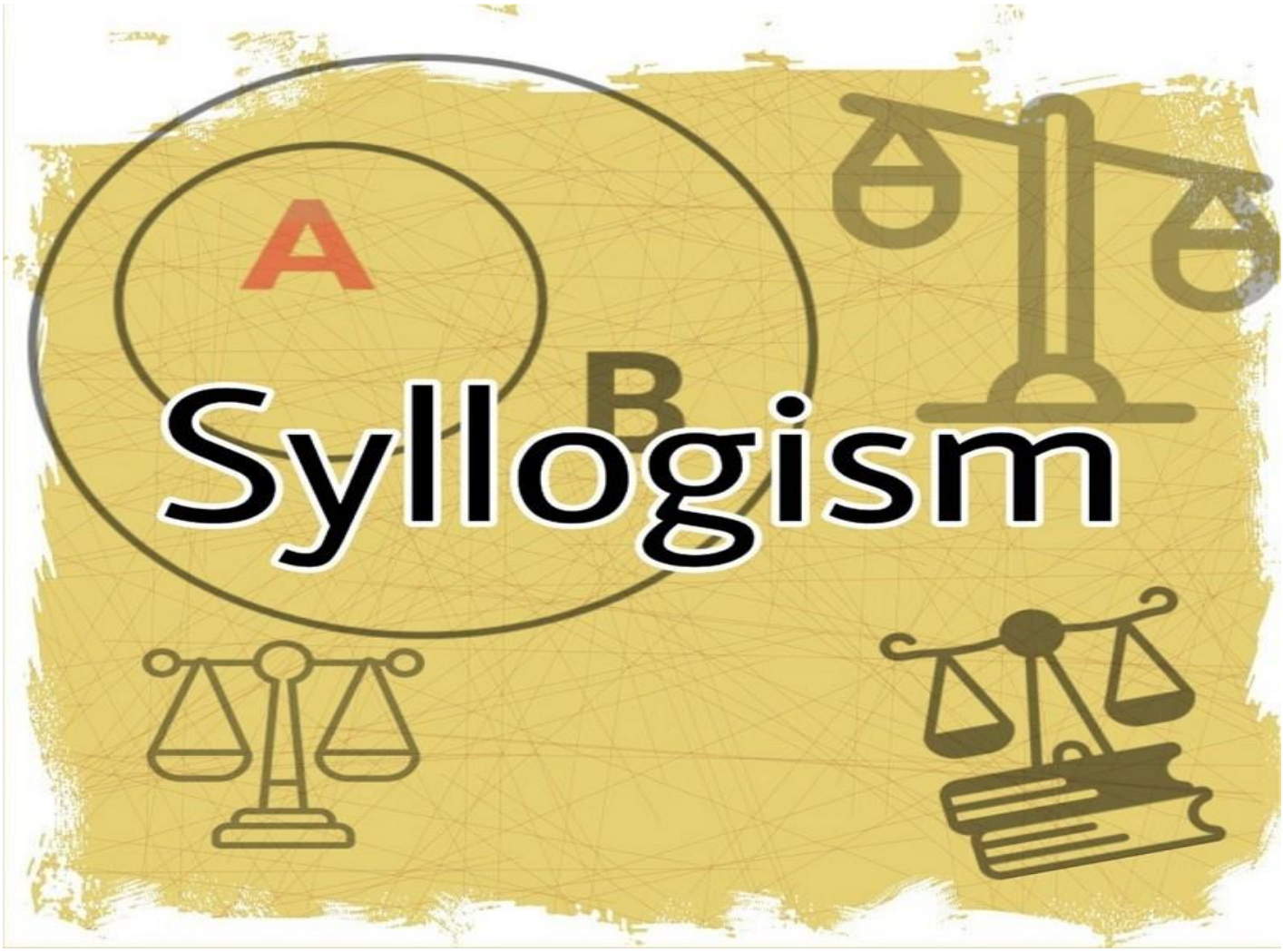


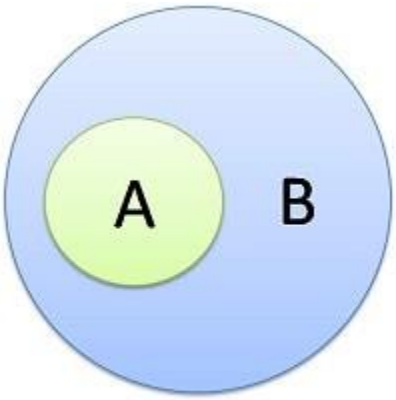
Venn Diagrams

One should know about Venn diagrams. Syllogism based questions are to be solved with the help of Venn diagram.
Different Types of Venn diagram are drawn based on statements.

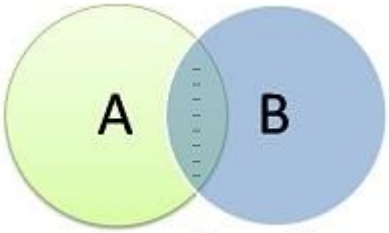
Examples:

- In all A are B i.e. first diagram, it is also true that some B are A.
- In second diagram Some A are B, it is also true that some B are A.
- In third diagram, some A are not B means Some part of A is not belongs to B i.e. that part of A is totally different from B.
- In no A are B diagram, entire part of A is different from B and vice versa.

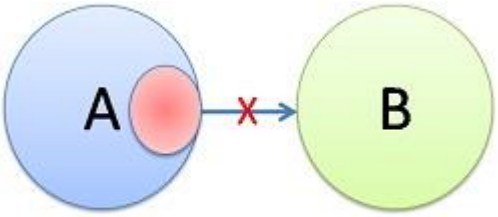
We'll need only these types of venn diagram or combination of these diagram.



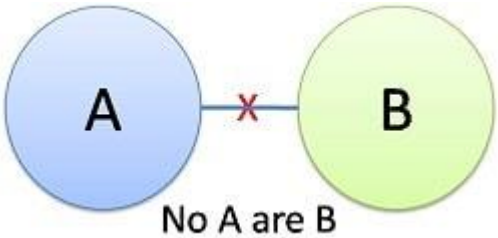
All A are B



Some A are B



Some A are not B



No A are B

There is also another way to solve this type of questions. We will see each and every type of questions with the use of Venn diagrams or different tricks.

i) Positive, negative rule

According to this rule, nature of statement(s) will decide the nature of conclusion. Let's have a look at this table

Statement – 1	Statement – 2	Conclusion
Positive(+ve)	Positive(+ve)	Positive(+ve)
Positive(+ve)	Negative(-ve)	Negative(-ve)
Negative(-ve)	Positive(+ve)	Negative(-ve)

Negative(-ve)	Negative(-ve)	Negative(-ve)

Note: Examples of all the cases.

Example:

1. Statement:

i) Some cats are white.

ii) All white are dog.

iii) No dog is snow.

Conclusion:

i) No cats are dogs.

ii) Some cats are dogs.

iii) No White is Snow.

Answer: Only conclusion (ii) and (iii) follows.

In given example, Statement one and two both are positive, so conclusion must be positive. Now, from given conclusion we can see that conclusion one is not at all correct because it is negative.

Now, in conclusion two we can say that it might be correct because conclusion is positive but we have to solve it for knowing correct conclusion.

Conclusion (iii) is Negative and relation of its elements exists in statement (ii) and (iii) and statement (iii) is Negative. So Conclusion (iii) might be Valid but we have to check other criteria.

2. Statement:

i) Some cats are white.

ii) No Snow is cat

iii) No dog is white..

Conclusion:

i) No cats are dogs.

Answer: Conclusion (i) follows.

Conclusion is Negative. Relation of given element lies in statement (ii) and (iii). As we can see that both the statements are negative. So it can be valid but we have to check other criteria.

ii) Income – Expense rule

Remember this table for quick finding of correct conclusion. We will see it in detail in examples. All we know that "Expense must be less than and equal to Income".

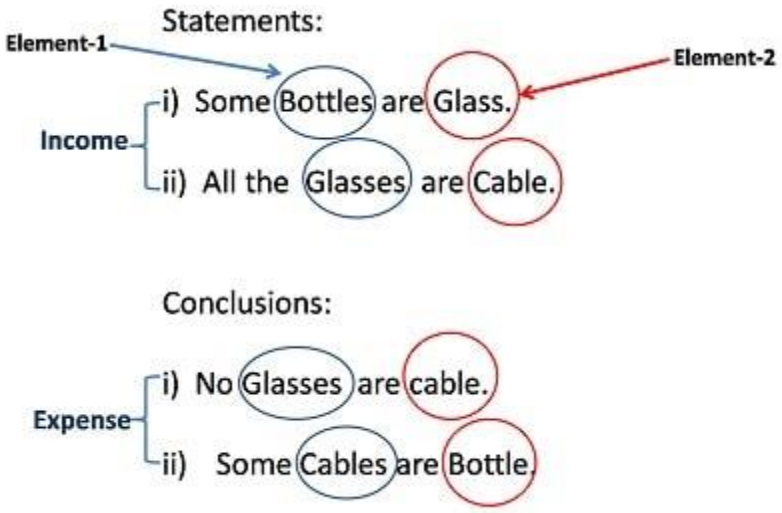
Expense must be less than and equal to Income.

Term	Element – 1	Element – 2
ALL	100	50
SOME	50	50
NO	100	100
SOME – NOT/ NO	50	100

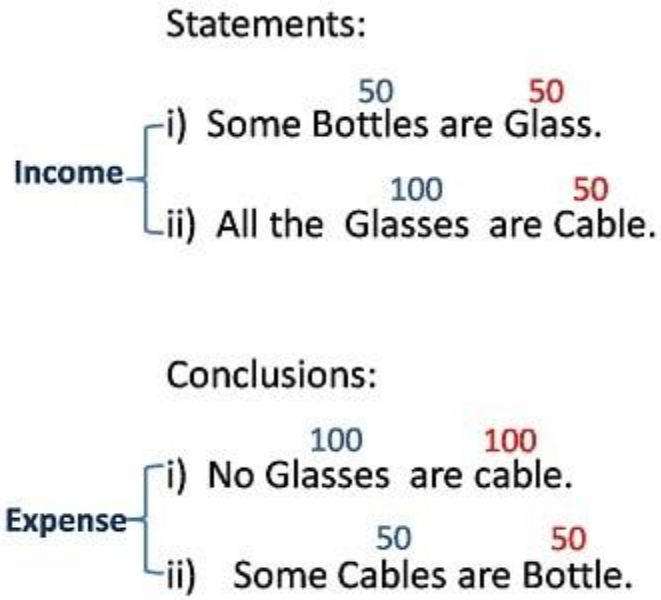
Example:

Step-1: Identify Element 1 and 2.

Element-1: First entity in the sentence (Either in statement or in conclusion).
Element-2: Second entity in the sentence (Either in statement or in conclusion).

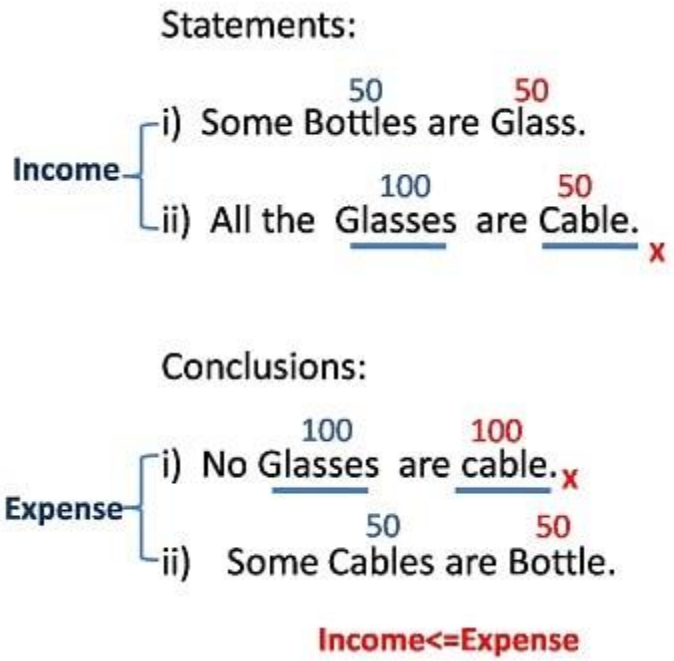


Step-2: Assign value to the elements based on given term (From Income-Expense table).



Step-3: Now, We have to find out relation between two elements for individual conclusion. Relation might exist in one or more statements.

In first conclusion elements are Glasses and Cable. Both elements have relation in second statement only.

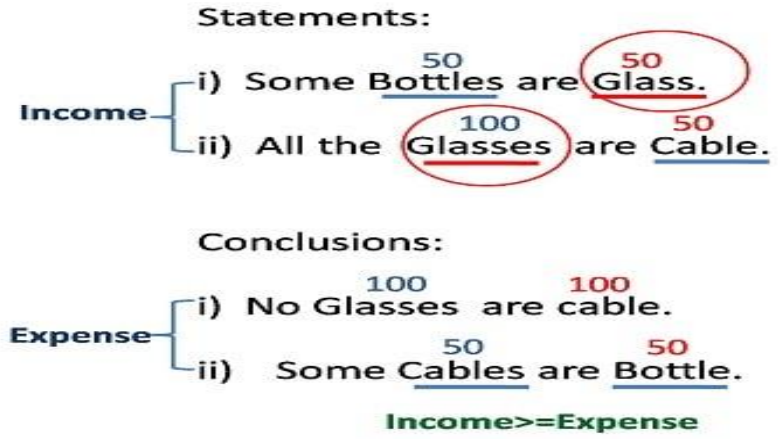


In Second conclusion elements are Cables and Bottles. If we combine statement one and two, we will get relation between cable and bottle.

In such cases, we have to find out common element between those statements. Here, we have Glass element, which is common in both statements.

If common element doesn't exist then that conclusion is not valid.

If common element exists then it must have 100 value (Income) in at least one of the statement. After that, we have to calculate income and expense.



Step-4: In this step, we have to calculate Income – Expense of the element one and two.

Income - Maximum amount of the element in Statements which are having relation.
Expense - Amount of the element in Conclusion which we are going to check.

Now,
In conclusion one – Elements are Glasses and Cables; Expense of each element is 100. Income of glass is 100 but income of Cable is 50. So from this we can see that Expense of element cable is more than its Income. So Conclusion one is not valid.

Conclusion two- Elements are Cables and Bottles; Expense of each element is 50. Income of Cable is 50 and Income of Bottle is 50. So from this we can see that expense is equal to its income. So conclusion two follows.

Question format

In Syllogism concept, question and options pattern is same. Like, set of statements, set of conclusions and options.
Options are in following manner only.

i) If only (i) conclusion follows
ii) If only (ii) conclusion follows
iii) If either (i) or (Ii) follows
iv) If neither (i) nor (ii) follows and
v) If both (i) and (ii) follow.

Now, we will see examples of different types.

A) General

In this general type of statements and conclusions. only all, no, some type of simple sentences is given.

Example:

a) Statements:

i) All the humans are instruments.

ii) All the instruments are flutes.

Conclusions:

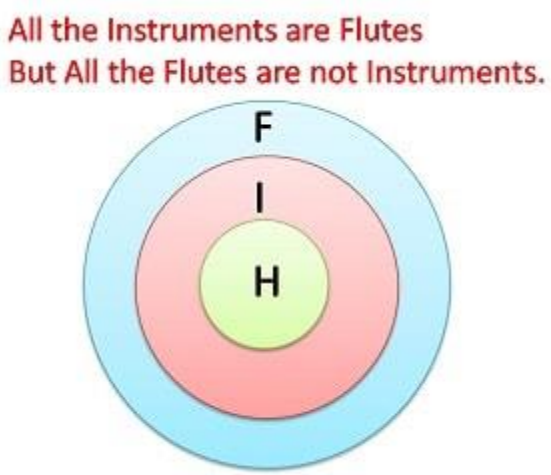
i) All the flutes are instruments.

ii) All the humans are flutes.

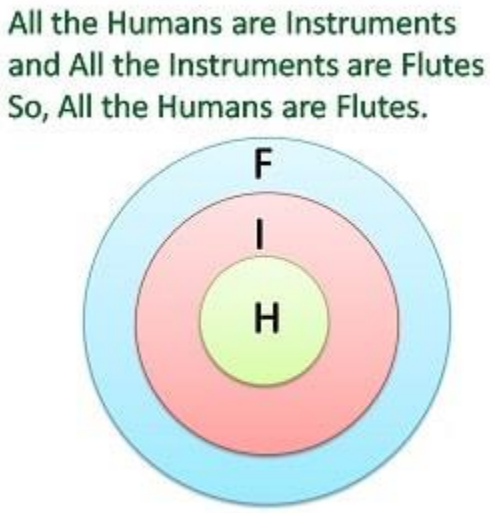
Answer: Only (ii) follows.

Diagram:

For Conclusion (i)



For Conclusion (ii)



At the beginning, we have to draw a venn diagram, from that we can easily get to know about correct conclusion.

b) Statements:

i) Some laptops are keyboard.

ii) All the cables are keyboard.

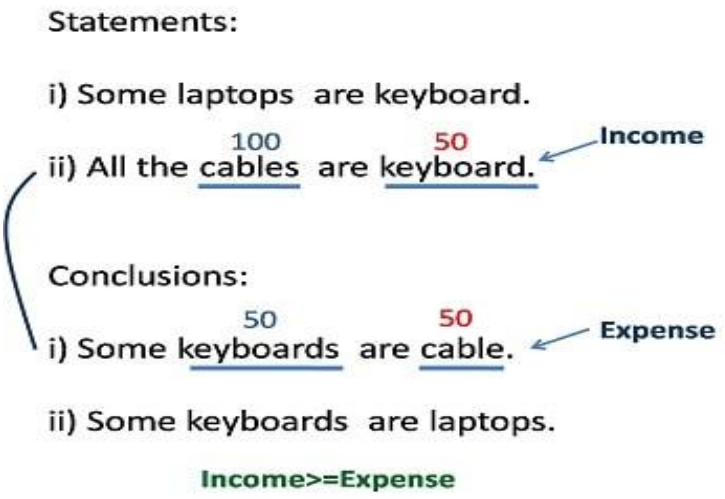
Conclusions:

i) Some keyboards are cable.

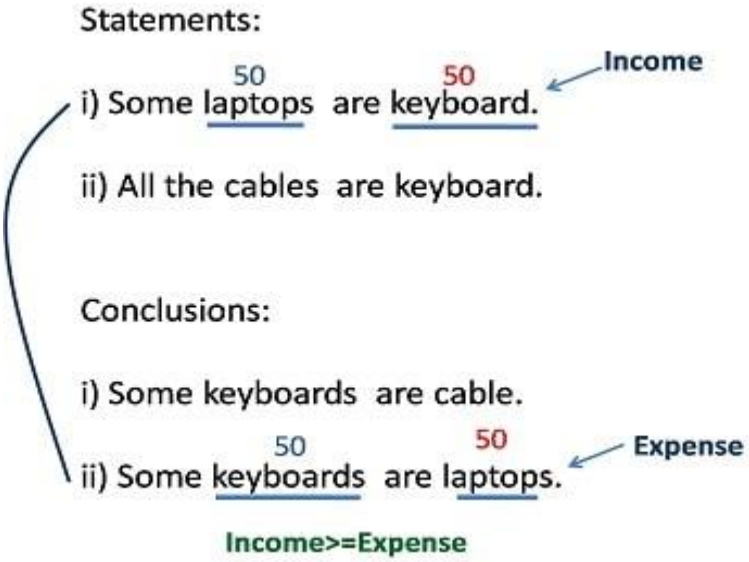
ii) Some keyboards are laptops.

Answer: Both conclusion follow.

For Conclusion (i)



For conclusion (ii)



c) Statements:

i) No girl is boy.

ii)All boys are female.

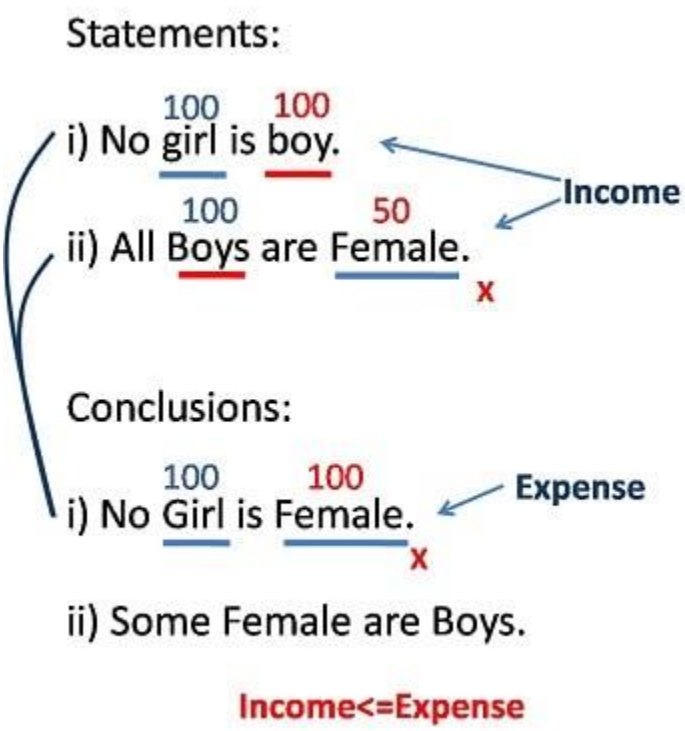
Conclusions:

i) No girl is female.

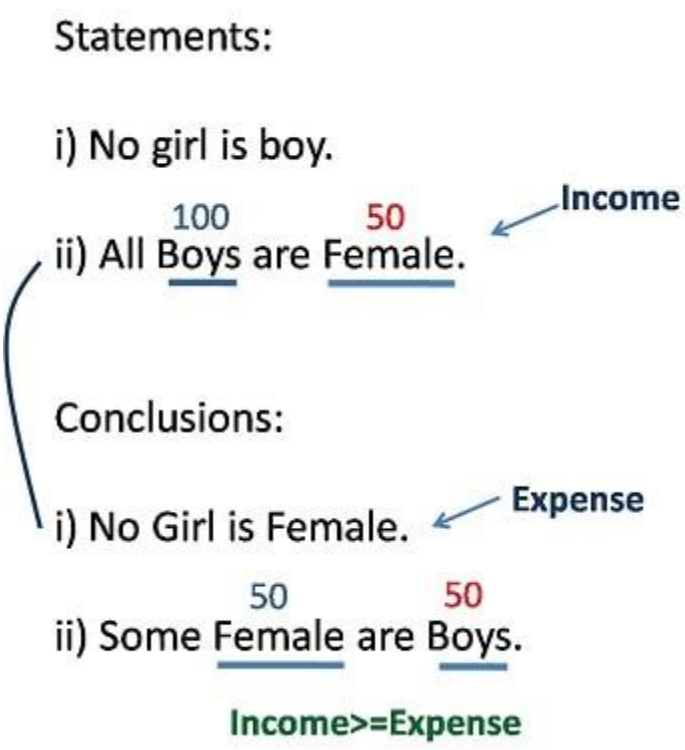
ii) Some female are boys.

Answer: Only (ii) follow.

For conclusion (i)



For conclusion (ii)



We will solve this question by Income – Expense rule.

B) Possibility case

In this Possibility type of statements and conclusions, there must be "can be" and "is possibility" type of words in conclusions. There are some cases that can be asked in this type of questions. We will see different types of cases with the help of diagram in following examples.

1) "All" Case

In, "All" type of possibility case we will have "All" scenario in both statement.

Statements:

i) All A are B.

ii) All B are C.

Conclusions:

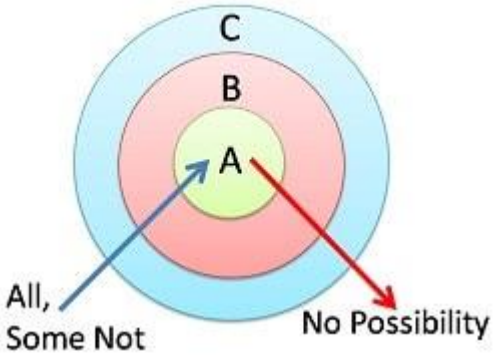
i) All B can be A.

ii) Some C not being B is a possibility.

iii) Some C can be B.

iv) Some A can be C.

Diagram:



Answer: (i) and (ii) follow.

If we go from A to B or B to C (i.e. Going Outside) then there will be no possibility.
If we come from C to B or B to A (i.e. Coming Inside) and if there is "All" or "Some.. Not" in the conclusion then it is a valid conclusion.

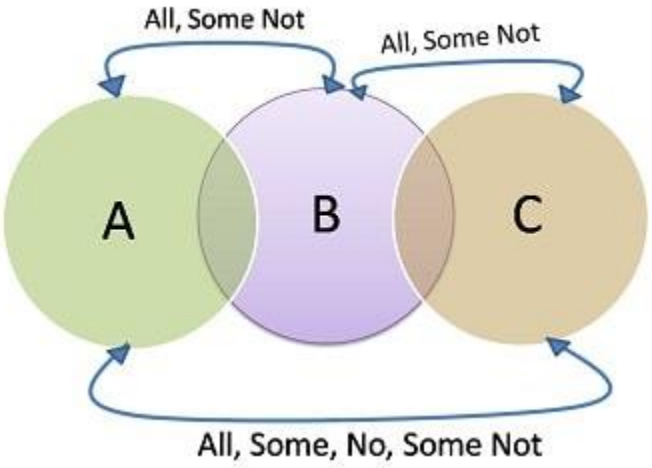
2) "Some" Case

In, "Some" type of possibility case we will have "Some" scenario in both statement.

Statements:
i) Some A are B.
ii) Some B are C.

Conclusions:
i) All A can be C.
ii) Some C not being B is a possibility.
iii) All B can be A.
iv) No A can be B
v) Some B can be A

Diagram:



Answer: (i), (ii) and (iii) follow.

If we go from A to B or B to A and if there is "All" or "Some.. Not" in the conclusion then it is a valid conclusion (Same case for B to C or C to B).
If we go from A to C or C to A (i.e. Far from each other) and if there is "All", "Some.. Not", "Some", "No" in the conclusion then it is a valid conclusion.

Note: Give explanation in words.

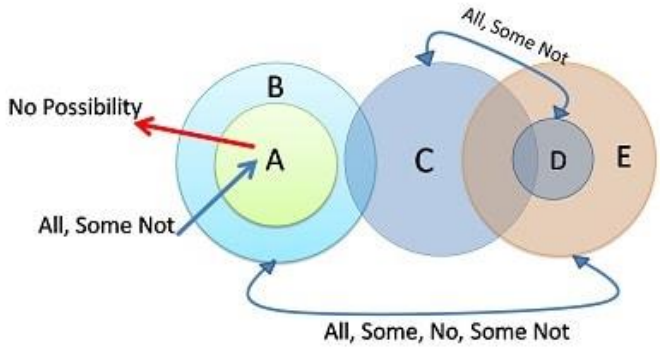
3) "All" + "Some" Case

In, "All" + "Some" type of possibility case we will have "All" in one statement and "Some" in another statement.]

Statements:
i) All A are B.
ii) Some B are C.
iii) Some C are D.
iv) All D are E.

Conclusions:
i) Some A can be B.
ii) Some D can be C.
iii) All B being E is a possibility.

Diagram:



Answer: Only (iii) follows.

If we go from C to D or D to C and if there is "All" or "Some.. Not" in the conclusion then it is a valid conclusion.

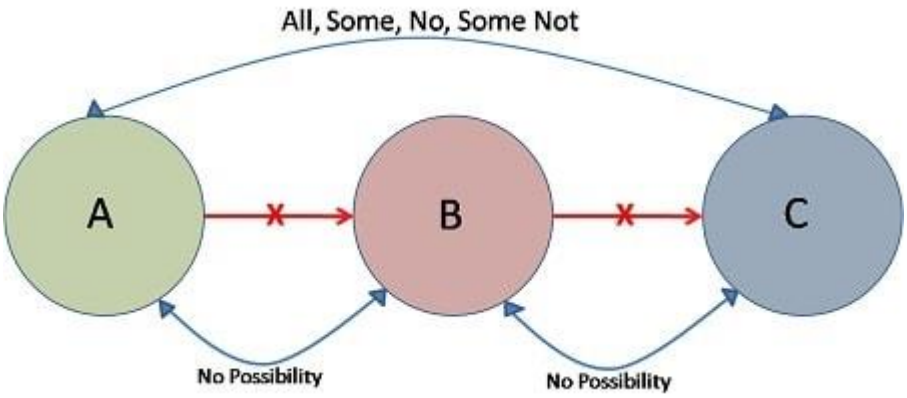
4) "No" case

In this case we will have "No" scenario in both the statements.

Statements:
i) No A is B.
ii) No B is C.

Conclusions:
i) Some A can be B.
ii) All B can be C.
iii) Some C not being A is a possibility.

Diagram:



Answer: Only (iii) follows.

If we go from A to B or B to A then there will be no possibility (Same case for B to C

or C to B).

If we go from A to C or C to A (i.e. Far from each other) and if there is "All", "Some.. Not", "Some", "No" in the conclusion then it is a valid conclusion.

5) "Some… Not" Case

In "Some… Not" case, we will have "Some" and "Not" in same sentence. Like, "Some Pens are Not Pencils.

Statements:

i) Some A are not B.

ii) Some B are not C.

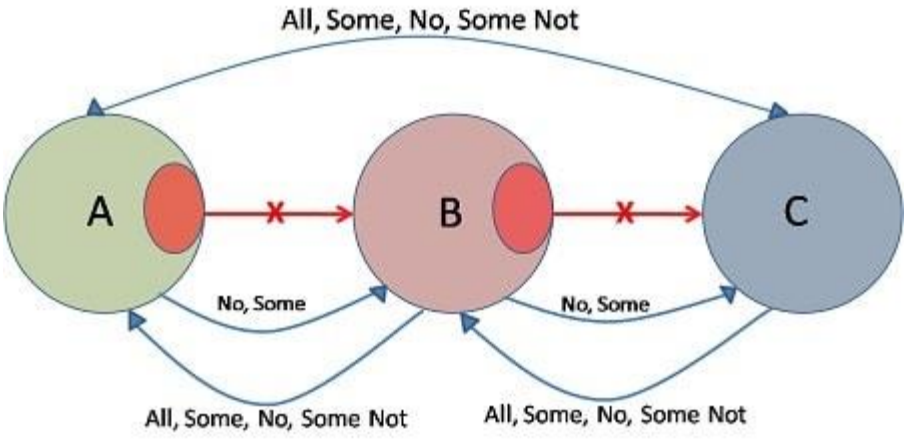
Conclusions:

i) Some A can be C.

ii) Some B can be A.

iii) Some A not being B is a possibility.

Diagram:



Answer: (i) and (ii) follow.

If we go from A to B and if there is "No", "Some" in the conclusion then it is a valid

conclusion (Same case for B to C).

If we go from A to C or C to A (i.e. Far from each other) and if there is "All", "Some.. Not", "Some", "No" in the conclusion then it is a valid conclusion (Same case for B to A or C to B).

6) "All" + "No" Case

In this "All" + "No" case of possibility, we will have "All" in one statement and "No" in another. This is an exception possibility case.

Statements:

i) All A are B.

ii) All B are C.

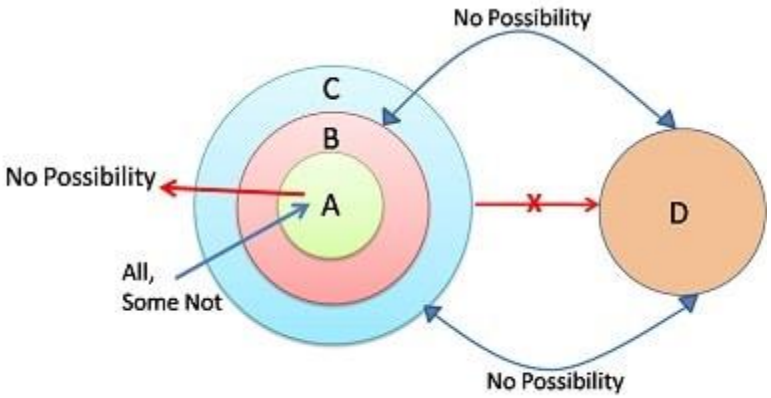
iii) No C is D.

Conclusions:

i) No B can be D.

ii) Some A being D is a possibility.

Diagram:



Answer: Neither (i) nor (ii) follow.

If we go from B to D or from D to B then there will be no possibility (Same case for C to D or D to C).

7) "Some" + "No" Case

In "Some" + "No" type of exception possibility case, we will have "Some" in one statement and "No" in another statement.]

Statements:

i) Some A are B.

ii) No B are C.

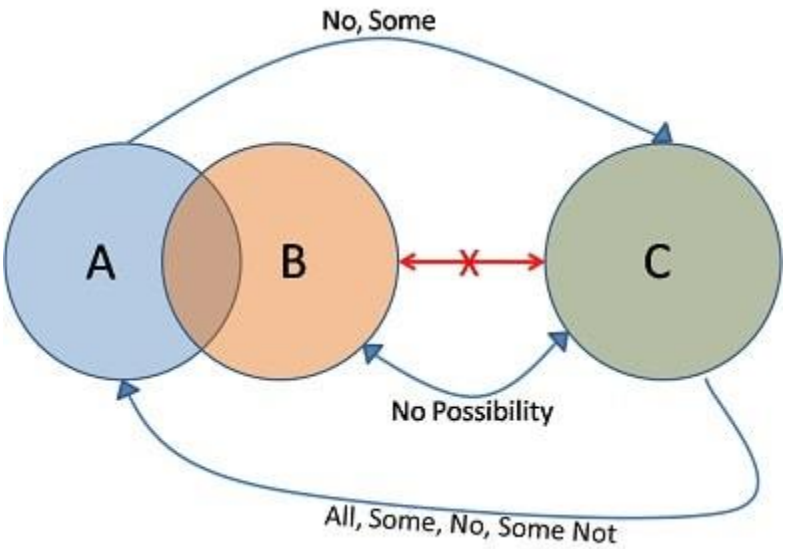
Conclusions:

i) Some A being C is a possibility.

ii) All A being C is a possibility.

iii) No C being A is a possibility.

Diagram:



Answer: (i) and (iii) follow.

If we go from A to C and if there is "No" or "Same" in the conclusion then it is valid conclusion.

If we go from B to C or from C to B then there will be no possibility.

If we go from C to A and if there is "All", "Some.. Not", "Some", "No" in the conclusion then it is a valid conclusion.