SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution
Coimbatore-35

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

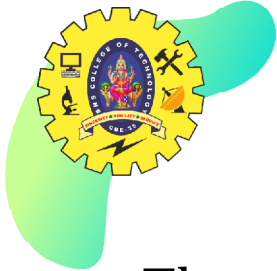# DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

19GET276 – VQAR II

II YEAR/ IV SEMESTER

UNIT 3 – VERBAL REASONING   II

TOPIC – **Syllogisms**

SYLLOGISMS

The word syllogism is derived from the Greek word "syllogismos" which means "conclusion, inference". Syllogisms are a logical argument of statements using deductive reasoning to arrive at a conclusion. The major contribution to the filed of syllogisms is attributed to Aristotle.
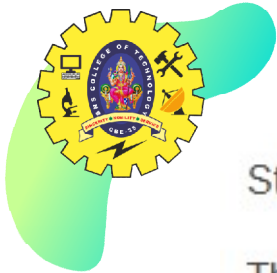
SYLLOGISMS

The questions which are asked in this section contain two or more statements, and two or more conclusions follow these statements. One has to find out which of these conclusions logically follow the given statements. The statements have to be taken true even if they seem to be at variance from the commonly known facts.

There are many ways of solving questions of syllogisms. The most effective and efficient method of all is using a Venn diagram. Based on the given statements, one should draw all the possible diagrams and then solve each of these diagrams separately. Finally, the answer common to all the diagrams is taken as the correct one.

SYLLOGISMS

Statements of syllogisms

The questions of syllogisms of three main parts.

1. Major premise
2. Minor premise
3. Conclusion

The central premise is a statement in general, believed to be true by the author.

Example: All women are smart.

The minor premise is a specific example of the major premise.

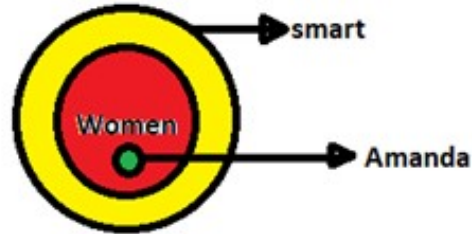**Example:** Amanda is a woman.
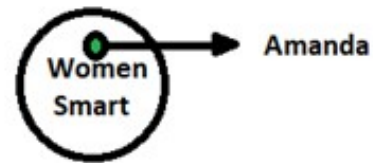
SYLLOGISMS

Example: Amanda is smart.

Application of Venn diagrams

To identify whether the given conclusion is correct or not draw the Venn diagrams according to major and minor statements.

Non overlapping
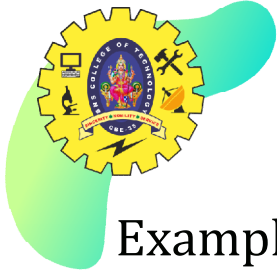
Case 1

Over lapping

Case 2

SYLLOGISMS

Steps to solve syllogism questions:

Note the number of variables present in the given statements

Ex: Man, doctor, pilot, etc.

a. Draw a Venn diagram corresponding to each variable; several Venn diagrams is equal to the number of variables.

b. Deduce the logical level by reading the statements and draw the corresponding Venn diagram

c. Check the conclusions given by comparing it with the Venn diagram obtained

d. Select the correct conclusion.

Example 1:

Major premise: All Actors are right-handed.
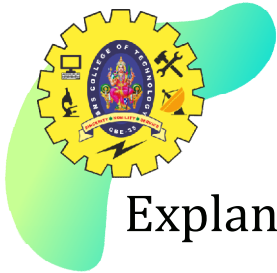
Minor premise: All right-handed are Artists.

The conclusion is: Some Artists are Actors.

A. Correct

B. Incorrect

Explanation:

Case 1:

The Venn diagram of actors is inside right-handed and which in turn is inside the Venn of artists. According to the diagram, the portion of the red Venn diagram overlapping with green indicates that some actors artist are actors. Hence the conclusion is correct according to this diagram, but can not be concluded as the final answer until the second case is checked.

Case 2:

Since all the Venn diagrams are overlapping with each other, according to the diagram all the artists are actors or all the actors are artists.
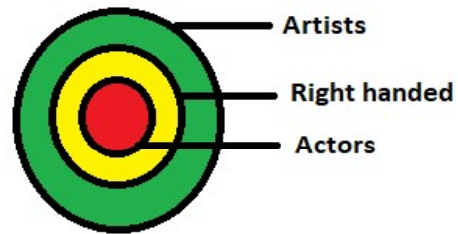
Hence the conclusion is " some artists are actors" is wrong. Since the conclusion is wrong according to the second Venn diagram.

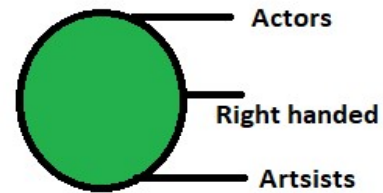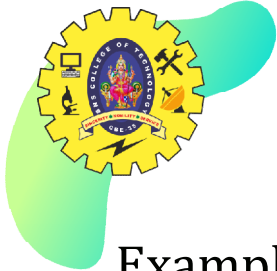The correct answer will be option B incorrect.

SYLLOGISMS

Case 1: Non overlapping

Case 2: Overlapping

Example 2:

Major premise: No pencil is cloth.

Minor premise: No sweaters are pencils.

The conclusion is: All sweaters are cloth

A. Correct

B. Incorrect

Solution:

Explanation:

In this case, as can be seen, there are three possible scenarios.

Since " No pencil is cloth" The diagram of pencil and cloth do not have any overlapping. Hence, they are just touching each other(the diagram can also be represented by keeping them apart, but that will not affect the logical conclusion). According to the minor premise, since no sweaters are pencils, the diagrams of sweaters and pencil do not overlap.

SYLLOGISMS

Case 1: If no sweaters are pencil, one possibility is there can be no sweater which is no cloth also.

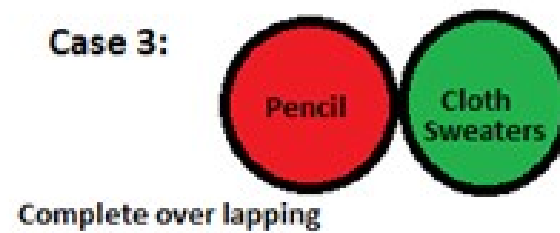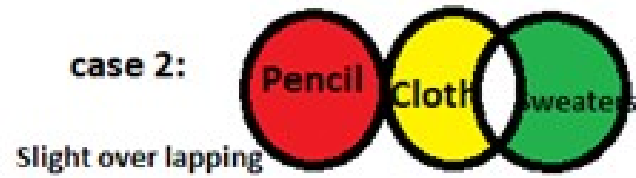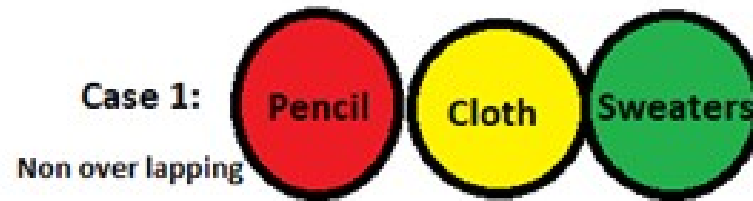Case 2: There can be a sweater which is also cloth. Hence a part of sweater and cloth overlap with each other.

Case 3: All clothes can be a sweater, as there is not any promise which says this combination is not possible.

The conclusion "all sweaters are cloths" is correct only according to 3rd case but not with respect to the 1st and 2nd case. Hence the conclusion is incorrect.

SYLLOGISMS

Case 1:
Non over lapping

Pencil   Cloth   Sweaters

case 2:
Slight over lapping

Pencil   Cloth   Sweaters

Case 3:
Complete over lapping

Pencil   Cloth Sweaters

Example 3:

Major premise: All engineers are innovative.

Minor premise: All students are engineers.

Conclusions:

All innovative are students

All students are innovative

No innovative are students

No engineers are students

THANK YOU