Syllogism - Notes & MCQs for MAH MCA CET Exam

What is Syllogism?

Syllogism is a logical reasoning concept used to determine conclusions based on given statements. It consists of:

- **Statements** (Premises)
- **Conclusions** (Deductions based on the statements)

Example:

- **Statements:**
  1. All cats are animals.
  2. Some animals are dogs.
- **Possible Conclusions:**
  - Some cats are dogs. (**False**)
  - Some animals are cats. (**True**)

Types of Statements in Syllogism

1 **Universal Affirmative (A-type)** → "All A are B"

- Example: **All apples are fruits.**
- Implication: Every apple is inside the category of fruits.

2 **Universal Negative (E-type)** → "No A is B"

- Example: **No dog is a cat.**
- Implication: There is no overlap between dogs and cats.

3 **Particular Affirmative (I-type)** → "Some A are B"

- Example: **Some cars are electric.**
- Implication: At least one car is electric.

4 **Particular Negative (O-type)** → "Some A are not B"

- Example: **Some birds are not eagles.**
- Implication: At least one bird is not an eagle.

Venn Diagram Approach

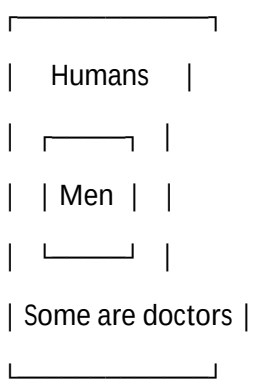
Using **Venn Diagrams** is the easiest way to solve syllogism questions.

1. Draw circles for each category.

2. Place elements as per the statements.
3. Check if the conclusions logically follow.

Example:

- **Statements:**
  1. All men are humans.
  2. Some humans are doctors.
- **Venn Diagram Representation:**



- **Conclusions:**
  - Some men are doctors. (**False**)
  - Some doctors are humans. (**True**)

Rules to Identify Valid Conclusions

- **Golden Rules:**

✓ If **All A are B**, then **Some B are A** is always true.
✓ If **No A is B**, then **No B is A** is always true.
✓ If **Some A are B**, then **Some B are A** is always true.
✗ **Conversion is not valid** for "Some A are not B."

MCQs on Syllogism

1. Based on Universal Affirmative (A-type)

- **Statements:**
  1. All books are papers.
  2. All papers are trees.
- **Conclusions:**

A) Some trees are books.

B) No book is a tree.
C) Some papers are books.
D) Both A and C.

☑ **Answer: D (Some trees are books, and Some papers are books).**

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2. Based on Universal Negative (E-type)

- **Statements:**
  1. No lion is a tiger.
  2. All tigers are cats.
- **Conclusions:**

A) No lion is a cat.
B) Some cats are tigers.
C) No cat is a lion.
D) None of these.

☑ **Answer: B (Some cats are tigers).**

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3. Based on Particular Affirmative (I-type)

- **Statements:**
  1. Some apples are oranges.
  2. Some oranges are bananas.
- **Conclusions:**

A) Some apples are bananas.
B) Some bananas are apples.
C) No conclusion follows.
D) Some oranges are apples.

☑ **Answer: C (No conclusion follows directly).**

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4. Based on Particular Negative (O-type)

- **Statements:**
  1. Some laptops are not HP.
  2. All HP are Dell.
- **Conclusions:**

A) Some Dell are HP.
B) All HP are laptops.

C) Some laptops are Dell.
D) None of these.

☑ **Answer: A (Some Dell are HP, as given in the second statement).**

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5. Based on Mixed Statements

- **Statements:**
  1. All birds are animals.
  2. Some animals are fish.
- **Conclusions:**

A) Some fish are birds.
B) Some birds are animals.
C) No fish is a bird.
D) Both B and C.

☑ **Answer: B (Some birds are animals, which is directly given).**

Shortcut for Solving Syllogism

📌 **Try Venn Diagrams First!**
📌 **Remember the Four Types of Statements.**
📌 **Use the Golden Rules to Eliminate Incorrect Conclusions.**
📌 **Check for the Universal and Particular Conversions.**