

Syllogism

Basic Quantifier	Premise	Quantifier	Subject	Predicate
All	Affirmative	Universal	✓	✗
No	Negative	Universal	✓	✓
Some	Affirmative	Particular	✗	✗
Some Not	Negative	Particular	✗	✓

Question 1:

✓ ✗

All Dogs have a tail.

✗ ✗

Some rats are dogs.

Conclusion:

Some rats have a tail.

Answer. The conclusion “Some Rats have tail follows” because the middle premise in dogs is distributed once. Moreover, the term which is not distributed in the premise will not be distributed. Therefore, the conclusion mentioned above holds true.

Question 2:

✓ ✗

All pen are pencil.

✓ ✓

No pencil is an eraser.

Conclusion:

No pen is an eraser.

All pencil are a pen.

Answer. In this, the middle premise pencil is distributed once. Therefore, the conclusion is possible. Now from the table above it can be proved that the conclusion “No pen is paper” is true and the other one is false.

Question 3:

✓ x
All dogs are monkeys.
✓ x
All monkeys are cats.
✓ ✓
No cat is a cow.

Conclusion:

No monkey is a cow.
Some dogs being a cow is a possibility.

Answer. Conclusion 1 “No monkey is a cow” is true since the premise cat is distributed once. But the second conclusion “some dogs being a cow is a possibility” is false as no relation can be defined between the premises.

Question 4.

✓ x
All pens are pencils
x x
Some paper are books

Conclusion:

All pens are paper

Answer. Since there are four premises and there is no middle premise, therefore, no conclusion can be drawn.

Question 5.

x x

Some trees are woods

x x

Some woods are metals

x x

Some metals are plastic

Conclusion:

Some trees are metals

Some woods are plastic

Some plastic are metals

Some plastics are woods

Answer: Here only conclusion 3 “some plastic are metals” is true as it has a common premise.

Question 6:

x x

Some cars are buses

✓ x

All the trains are buses

✓ x

All the pencils are cars

Conclusion:

Some cars are trains

No pencil is buses.

Some trains are cars

Answer: No conclusion follows as there is no common premise.

Question 7:

✓ x

All engineers are graduates

✓ x

All graduates are students

Conclusion:

All engineers are students

Some students are engineers

Answer: Since the middle premise “graduates” is distributed conclusion for this statement it possible. Also, both statements are positive the solution must also be positive. The conclusion 1 “all engineers are students” is positive and has a tick mark on engineers, so it is true. On the contrary, in conclusion, 2 “some students are engineers” there is no tick mark on any term, so it is false.

Question 8:

✓ x

All birds are sparrows.

✓ ✓

No sparrow is pigeon

Conclusion:

No sparrow is a pigeon.

Some birds are pigeon

Answer: Since the middle premise “sparrow” is distributed conclusion follows. More so, statement two is negative. Therefore conclusion must also be negative. Now in conclusion 1 “no sparrow is pigeon” both the elements are tick marked. Also, these terms are ticked in both the premises at least once. Therefore the conclusion is true. Conclusion two “some birds are pigeon” is not negative. Therefore, it is invalid.

Question 9:

✓ ✕

Some roses are flowers

✓ ✓

No flower is red

Conclusion:

Some flowers are roses.

Some roses are not red.

Answer: The conclusion can be derived from the middle premise “flower” is distributed. The conclusion one is true as it can be easily inferred from the statements. Likewise, conclusion two is also true as one of red is a tick mark in conclusion two as well as statements two it makes the conclusion true.

Question 10:

✓ ✕

All bats are balls

✕ ✕

Some wickets are bats

✓ ✕

All balls are stumps

Conclusion:

Some stumps are bats

Some wickets are stumps

All bats are stumps

Some bats are not stumps

Answer: From statement 1 and three it can be inferred that Conclusion 3 “all bats are stumps is true” as the middle premise is distributed and the bats are tick marked in conclusion as well as statement 1. Likewise, conclusion 2 is also true as in statement 1, and two bats are distributed and in statement 1, and three balls are distributed so, therefore, from this conclusion 2 “some wickets are stumps” is true. All statements are true to the conclusion must also be true. Therefore, conclusion 4 is false. From statement 1 and three conclusion, one is also true as the middle premise is distributed one statement in particular, so the conclusion also is particular.