**Aristotle’s syllogism as simple as ABC…**

 **by new Transformed RAVAL’S NOTATIONs**

**Introduction**

Syllogism was introduced by Aristotle (a reasoning consisting two premises and a conclusion).Aristotle gives the following definition of syllogism in his fundamental treatise Organon.

“A syllogism is discourse, in which, certain things being stated, something other than what is stated follows of necessity from their being so”. Things that have stated are known as premises and the one that follows from the premises is known as the conclusion of the syllogism.

A categorical syllogism is a type of argument with two premises and one conclusion. Each of these three propositions is one of four forms of categorical proposition.

|  |
| --- |
| Type Form Example |
| A All S are P All monkeys are mammals |
| E No S is P No monkeys are birds |
|  I Some S are P Some philosophers are  logicians |
|  O Some S are not P Some logicians are not  philosophers |

These four type of proposition are called A,E,I,and O type propositions, the variables S and P are place-holders for terms which represent out a class or category of thing, hence the name “categorical” proposition.

A categorical syllogism contains precisely three terms: the major term, which is the predicate of the conclusion; the minor term, the subject of the conclusion; and the middle term, which appears in both premises but not in the conclusion.

**Aristotle noted following five basic rules governing the validity of categorical syllogisms**

1. The middle term must be distributed at least once (distributed term refers to all members of the denoted class, as in all S are P and no S is P).

2. A term distributed in the conclusion must be distributed in the premise in which it occurs.

3. Two negative premises imply no valid conclusion.

4. If one premise is negative, then the conclusion must be negative.

5. Two affirmatives imply an affirmative.

John Venn, an English logician, in 1880 introduced a method for analyzing categorical syllogisms, known as the Venn diagram. In a paper entitled “on the Diagrammatic and Mechanical Representation of propositions and Reasoning’s in the “philosophical magazine and journal of science,” Venn shows the different ways to represent propositions by diagrams. For categorical syllogism three overlapping circles are drawn to represent the classes denoted by the three terms. Universal propositions (all S are P, no S is P) are indicated by shading the sections of the circles representing the excluded classes. Particular propositions (some S are P, some S are not P) are indicated by placing some mark, usually an “x”, in the part of the circle representing the class whose members are specified. The conclusion may then be inferred from the diagram.

Venn diagrams has similarity with Euler diagrams, invented by Leonard Euler in the 18th century, but Venn diagrams are visually more complex than the Euler diagrams.

Solving Syllogism problems are usually moderate time consuming by Traditional methods and considered difficult by most of the students. **New Transformed RAVAL’S NOTATION** solves Syllogism problems very quickly and accurately. This method solves any categorical syllogism problem with same ease and is as simple as ABC…

***Method***:

 In **Transformed RAVAL’S NOTATION,** each premise and conclusion is written in abbreviated form, and then conclusion is reached simply by connecting abbreviated premises.

**NOTATION**: Statements (both premises and conclusions) are represented as follows:

**Statement** **Notation**

a) All S are P SS-P

b) Some S are P S-P

c) Some S are not P S / PP

d) No S is P SS / PP

 (- implies **are** and **/** implies **are not)**

**All** is represented by **double** letters; **Some** is represented by **single** letter. **Some** S are **not** P is represented as **S / PP**. **No** S is P implies **No** P is S so its notation contains **double** letters on **both** sides.

**RULES**: (1) Conclusions are reached by connecting Notations. Two notations can be linked only through **common linking terms**. When the common linking term multiplies (becomes double from single), divides (becomes single from double) or remains double then conclusion is arrived between **terminal terms. (Aristotle’s rule: the middle term must be distributed at least** **once**). (2)If both statements linked are having – signs, resulting conclusion carries – sign (**Aristotle’s rule: two** **affirmatives imply an affirmative**). (3) Whenever statements having **–** and **/** signs are linked, resulting conclusion carries **/** sign. (**Aristotle’s rule: if one premise is negative, then the conclusion must be negative**). (4)Statement having / sign cannot be linked with another statement having / sign to derive any conclusion. **(Aristotle’s rule: Two negative premises imply no valid conclusion).**

***Following illustrations will make the above rules very clear***

**1. Statements Notation**

 a) All S are P a) SS - P

 b) All P are Q b) PP- Q

 Valid Conclusions

 1. All S are Q 1.SS -Q

 2. Some S are Q 2.S -Q

 3. Some Q are S 3.Q -S

 4. Some P are S 4.P -S

 5. Some Q are P 5.Q- P

 6. Some S are P 6.S- P

 7. Some P are Q 7.P-Q

 Wrong Conclusions

 1.All Q are S 1.QQ-S

2. All P are S 2.PP-S

3. All Q are P 3.QQ -P

 4 Some S are not Q. 4. S / QQ

 5. Some Q are not S 5.Q / SS

 6. Some P are not S 6.P / SS

Explanation: From a) SS – P

 b) PP –Q

 Valid Conclusions

 1. SS – Q follows, because here common linking term (P) multiplies

 2. S- Q follows, because Some” is part of All(S is included in SS but not vice versa) and common linking term (P) multiplies

 3. Q- S follows, because here common linking term (P) divides

 4. P- S follows from the main statement SS – P (by reverse reading)

 5. Q – P follows from the main statement PP – Q (by reverse reading, one can isolate P from PP)

 6. S – P follows from the main statement SS - P

 7. P – Q follows from the main statement PP - Q

 Wrong Conclusions

 1. QQ – S does not follow because we don’t have any QQ in statement notation 2. PP – S does not follow because there is no common linking term between PP and S 3. QQ – P does not follow because we don’t have any QQ in statement notation

 4. S / QQ is ruled out because we don‘t have any / sign in statement notation

 5. Q / SS is ruled out because we don’t have any / sign in statement notation

 6. P / SS is ruled out because we don’t have any / sign in statement notation

**2. Statements Notation**

 a) All S are P a) SS - P

 b) Some P are Q b) P - Q

Valid Conclusions

 1.Some S are P 1.S - P

 2. Some P are S 2.P - S

 3. Some Q are P 3.Q - P

Wrong Conclusions

1.All S are Q 1.SS - Q

2. All P are S 2.PP - S

 3. Some Q are S 3.Q - S

 4. Some Q are not S 4.Q / SS

Explanation: From a) SS - P

 b) P – Q

 Valid Conclusions

1.S – P follows from statement SS - P

2.P – S follows from statement SS – P (reverse reading)

 3. Q – P follows from statement P – Q (reverse reading)

Wrong Conclusions

 1. SS – Q does not follow because common linking term (P) remains singular

2. PP – S does not follow because PP is not present in any statement notation.

 3. Q- S does not follow because common linking term (P) remains singular.

 4. Q / SS is ruled out because we don’t have any / sign in statement notation

**3. Statements: Notation**

 a) Some S are P a) S - P

 b) Some P are Q b) P- Q

Valid Conclusions:

 1.Some P are S 1.P - S

 2. Some Q are P 2.Q –P

Wrong Conclusions

 1.Some S are Q 1.S -Q

 2. Some Q are S 2.Q -S

 3. All P are S 3.PP- S

 4. All Q are S 4.QQ- S

Explanation: From a) S- P

 b) P- Q

 Valid Conclusions

 1.P- S follows from statement S- P (reverse reading)

 2. Q- P follows from statement P- Q (reverse reading)

 Wrong Conclusions

1. S- Q does not follow because common linking term (P) remains singular.

 2. Q- S does not follow because common linking term (P) remains singular.

 3. PP- S does not follow because PP is not present in any statement notation.

 4. QQ- S does not follow because QQ is not present in any statement notation

 **4. Statements: Notations:**

 a) All S are P a) SS- P

 b) No P is Q b) PP / QQ

 Valid Conclusions

 1.No S is Q 1.SS / QQ

 2. No Q is S 2.QQ / SS

 3. No Q is P 3.QQ/ PP

 4. Some S are not Q 4.S / QQ

 5. Some Q are not S 5.Q / SS

 6. Some P are not Q 6.P / QQ

 7. Some Q are not P 7.Q / PP

Wrong conclusions

 1.Some Q are P 1.Q - P

 2. All P are S 2.PP –S

Explanation: From a) SS-P

 b) PP/QQ

 Valid Conclusions

 1.SS / QQ follows because common linking term (P) multiplies (Whenever – and / are linked result carries / sign)

 2. QQ / SS follows because common linking term (P) divides

 3. QQ / PP follow from statement b) on reverse reading

 4. S / QQ follows because common linking term (P) multiplies (one can read S from SS)

 5. Q / SS follow (by reverse reading) because common linking term (P) divides

 6. P / QQ follow from PP / QQ

 7. Q / PP follows from PP/QQ (reverse reading)

 Wrong conclusions

 1. Q –P does not follow because Q is linked with P via / sign.

 2. PP-S does not follow from SS – P

**5. Statements: Notation**

 a) No S is P a) SS / PP

 b) No P is Q b) PP / QQ

 Wrong Conclusions

 1.No S is Q 1.SS / QQ

 2. No Q is S 2.QQ / SS

 3. Some P is S 3. P - S

 4. Some Q is S 4.Q – S

 Explanation: From a) SS /PP

 b) PP /QQ

 Wrong Conclusions

 1. SS / QQ do not follow because both statements have / sign so statements a) and b) cannot be combined to deduce any conclusion

 2. QQ / SS do not follow because both statements have / sign.

 3. P- S does not follow because we don’t have – sign between P and S anywhere in statement notation. 4. Q- S does not follow because both statements have / sign

**6. Statements: Notation**

a) Some S are P a) S-P

b) No P is Q b) PP/QQ

 c) All T are Q c) TT- Q

Valid Conclusions

 1.Some S are not Q 1.S / QQ

 2.Some P are not T 2.P / TT

 3.Some T are not P 3.T / PP

 4.Some S are not T 4.S / TT

Wrong Conclusions

1.Some Q are not S 1.Q / S 2.Some T are not S 2.T / SS

Explanation: From a) S – P

 b) PP / QQ

 c) TT-Q

Valid Conclusions

1.S / QQ follows because common linking term (P) multiply.

 2. P / TT follows because common linking term (Q) divides

 3. T / PP follows because common linking term (Q) multiplies. 4. S / TT follows because first common linking term (P) multiplies then second linking term (Q) divides

Wrong Conclusions

1. Q / SS do not follow because terminating term S is in single letter.

 2. T / SS do not follow because terminating term S is in single letter.

**7. Statements: Notation**

 a) Some S are P a) S- P

 b) All P are Q b) PP- Q

 c) All Q are T c) QQ- T

Valid Conclusions

1.Some S are T 1. S - T

 2. Some T are S 2. T – S

Explanation: From a) S- P

 b) PP – Q

 c) QQ- T

 Valid Conclusions

1.S – T follows, when we move from S towards T, P multiplies so we reach Q since Q also multiplies we get S- T

2.T- S follows, when we move from T towards S, Q divides so we reach PP since PP also divides we get T- S

**In the following text all 24 valid Aristotle’s syllogism are solved By Raval’s notations.**

**AAA -1 Barbara**  By Raval’s notations

All M are P MM – P

All S are M SS – M

Concl: All S are P SS – P (common term M multiplies)

**EAE -1 Celarent** By Raval’s notations

No M is P MM / PP

All S are M SS – M

Concl: No S is P SS / PP(common term M multiplies ,Whenever – and / are linked result carries / sign)

 **AII-1 Darii**  By Raval’s notations

All M are P MM - P

Some S are M S – M

Concl: Some S are P S - P (common term M multiplies)

**EIO – 1 Ferio** By Raval’s notations

No M is P MM / PP

Some S are M S – M

Concl: Some S are not P S / PP(common term M multiplies ,Whenever – and / are linked result carries / sign)

**AAI -1 Barbari** By Raval’s notations

All M are P MM - P

All S are M SS - M

Concl: Some S are P S - P(common term M multiplies and S is isolated from SS)

**EAO – 1 Celarant** By Raval’s notations

No M is P MM / PP

All S are M SS – M

Concl: Some S are not P S / PP (common term M multiplies and S is isolated from SS, Whenever – and / are linked result carries / sign)

**EAE – 2 Cesare** By Raval’s notations

No P is M PP / MM

All S are M SS – M

Concl: No S is P SS / PP(common term M multiplies, Whenever – and / are linked result carries / sign)

**AEE – 2 Camestres**  By Raval’s notations

All P are M PP - M

No S is M SS / MM

Concl: No S is P SS / PP(common term M divides, Whenever – and / are linked result carries / sign)

**EIO – 2 Festino**  By Raval’s notations

No P is M PP / MM

Some S are M S - M

Concl: Some S are not P S / PP (common term M multiplies, Whenever – and / are linked result carries / sign)

**AOO – 2 Baroco** By Raval’s notations

All P are M PP - M

Some S are not M S / MM

Concl: Some S are not P S / PP(common term M divides, Whenever – and / are linked result carries / sign)

**EAO -2 Cesaro** By Raval’s notations

No P is M PP / MM

All S are M SS - M

Concl: Some S are not P S / PP(common term M multiplies and S is isolated from SS, Whenever – and / are linked result carries / sign)

**AEO – 2 Camestros** By Raval’s notations

All P are M PP - M

No S is M SS / MM

Concl: Some S are not P S / PP (common term M divides and S is isolated from SS, Whenever – and / are linked result carries / sign)

**AII – 3 Datisi** By Raval’s notations

All M are P MM - P

Some M are S M - S

Concl: Some S are P S - P(common term M multiplies)

**IAI – 3 Disamis** By Raval’s notations

Some M are P M - P

All M are S MM - S

Concl: Some S are P S - P(common term M divides)

**EIO – 3 Ferison** By Raval’s notations

No M is P MM / PP

Some M are S M - S

Concl: Some S are not P S / PP(common term M multiplies, Whenever – and / are linked result carries / sign)

 **OAO – 3 Bocardo** By Raval’s notations

Some M are not P M / PP

 All M are S MM - S

Concl: Some S are not P S / PP (common term M divides, Whenever – and / are linked result carries / sign)

**EAO -3 Felapton** By Raval’s notations

No M is P MM / PP

All M are S MM - S

Concl: Some S are not P S / PP(common term M remains double, Whenever – and / are linked result carries / sign)

**AAI – 3 Darapti** By Raval’s notations

All M are P MM - P

All M are S MM - S

 Concl: Some S are P S - P (common term M remains double)

**AEE -4 Calemes**  By Raval’s notations

All P are M PP - M

No M is S MM / SS

Concl: No S is P SS / PP (common term M divides, Whenever – and / are linked result carries / sign)

 **IAI -4 Dimatis** By Raval’s notations

Some P are M P - M

All M are S MM - S

Concl: Some S are P S – P (common term M divides)

**EIO -4 Fresison** By Raval’s notations

No P is M PP / MM

Some M are S M - S

Concl: Some S are not P S / PP(common term M multiplies, Whenever – and / are linked result carries / sign)

**AEO-4 Calemos** By Raval’s notations

All P are M PP - M

No M is S MM / SS

Concl: Some S are not P S / PP (common term M divides and S is isolated from SS, Whenever – and / are linked result carries / sign)

**EAO -4 Fesapo** By Raval’s notations

 No P is M PP / MM

All M are S MM - S

Concl: Some S are not P S / PP (common term M remains double, Whenever – and / are linked result carries / sign)

**AAI -4 Bamalip** By Raval’s notations

All P are M PP - M

All M are S MM - S

Concl: Some S are P S - P (common term M divides)

**Exclusive statements:** Statements beginning with “only”, “alone”, “none but”, “none else but” are called exclusive statements. Such Statements can be reduced in desired forms

|  |  |  |
| --- | --- | --- |
| Let the given exclusive statement be | then it can be reduced as | Notation |
| Only S is PorS alone is PorNone but S is PorNo one else but S is P | All P are SorNo non –S is P | PP- S or non-S non-S/PP |

**Note:** If One reaches S / P, SS / P while deducing conclusions then no valid conclusion can be drawn from this links. As S / P and SS / P on combining with say PP – M or P – M will again yield similar deductions i.e. S / M or SS / M ( Both representations are not standard one’s). Other two positive premises cannot be combined with S / P or SS / P to give any conclusion.

**Complementary pair** (in conclusions): In a complementary pair, at least one of the two statements is always true. For example: Conclusions 1.Some S are P, 2.Some S are not P

Obviously one of these conclusions must be true, therefore if answer options contain either 1 or 2 is true then this answer option is correct one. As in traditional methods, in Transformed RAVAL’S NOTATION too complementary pair options are to be found by mere inspection.

If Individually Options are false then following forms complementary pair

S –P S / PP

 S - P SS / PP

SS – P S / PP

**Directions (Q.1-26):** Below are given three or four statements followed by three or four conclusions. You have to take the given statements to be true even if they appear to be at variance with commonly known facts, and then decide which of the conclusions logically follow(s) from the given statements. For each question, mark out an appropriate answer choice that you think is correct.

1. Statements: Notations

 a. All locks are keys. LL - K

 b. All keys are balls. KK - B

 c. Some clocks are balls. C – B

 Conclusions: Notations

1. Some balls are locks. B - L

2. Some clocks are keys. C – K x

 3. All keys are locks. KK – LL x

 1) Only 1 and 2 follow 2) Only 2 and 3 follow 3) Only 1 follows 4) Only 2 follows 5) 1, 2 and 3 follow

3) Only 1 follows

2. Statements: Notations

a. Some cups are pots. C - P

 b. All pots are toys. PP - T

 c. All cups are bottles. CC - B

Conclusions: Notations

 1. Some bottles are toys. B - T

2. Some pots are bottles. P - B

3.Some toys are cups. T - C

 1) Only 1 and 2 follow 2) Only 2 and 3 follow 3) Only 1 and 3 follow 4) 1, 2 and 3 follow 5) None follows

4) 1, 2 and 3 follow.

3. Statements: Notations

a. All papers are books. PP - B

b. All bags are books. BaBa - B

 c. Some purses are bags. Pu - Ba

 Conclusions: Notations

1. Some papers are bags. P – Ba x

2. Some books are papers. B - P

 3. Some books are purses. B - Pu

 1) Only 1 follows 2) Only 2 and 3 follow 3) Only 1 and 3 follow 4) Only 1 and 2 follow 5) 1, 2 and 3 follow

2) Only 2 and 3 follow

4. Statements: Notations

 a. No cloud is Bird. CC / BB

b. Some goats are birds G - B

 c. All cats are goats CaCa - G

 Conclusions: Notations

 1. No cat is cloud. CaCa / CC x

 2. Some cats are birds. Ca – B x

 3. No bird is cat. BB / CaCa x

 4.Some clouds are goats. C – G x

A) Only 3 follows B) Only either 2 or 3 follows C) Only 1 follows D) Only 1 and either 2 or 3 follow E) None of these

E) None of these

5. Statements: Notations

 a. All grapes are bananas. GG - B

 b. All apples are bananas PP- B

 c. Some bananas are mangoes B - M

Conclusions: Notations

 1. No grape is mango. GG / MM x

 2. Some apples are not mangoes. A / MM x

 3. Some grapes are apples. G – A x

4. All mangoes are grapes. MM – G x

1) Only 1 follows 2) Either 1 or 3 follows 3) Only 2 and 3 follow 4) Only 1, 2 and 3 follow 5) None of these

5) None of these

6. Statements: Notations

a. Some cats are rats. C – R

 b. Some rats are ants. R - A

 c. Some ants are flies. A - F

Conclusions: Notations

1. Some flies are cats. F – C x

2. Some flies are not ants. F / AA x

3. No rat is fly. RR / FF x

 4. No cat is fly. CC / FF x

1) Only 1 and 4 follow 2) Only 2 follows 3) Only 1 and 3 follow 4) Only 1 or 4 follows 5) None of these

5) None of these

 7. Statements: Notations

a. Some bags are books. Ba - Bo

 b. All books are boxes. Bo Bo - Bx

 c. No box is board. BxBx / BdBd

 Conclusions: Notations

 1. Some bags are not boards. Ba /Bd Bd

2. Some bags are not boxes Ba / Bx Bx x

 3. All bags are boxes BaBa – Bx x

 4. No bag is board BaBa / BdBd x

1) Only 1 follows 2) 1 and either 2 or 3 follow 3) Only 4 follows 4) Only 2 follows

5) None of these

2) 1 and either 2 or3 follow (2 & 3 are comp. pair)

8. Statements: Notations

 a. All chalks are dusters. CC – D

 b. Some chalks are boards. C - B

 c. Some dusters are pens. D -P

 Conclusions: Notations

1. Some pens are chalks. P – C x

2.Some dusters are boards D - B

3. Some pens are boards P – B x

 4. All chalks are pens. CC –P x

1) Either 1 or 4 follows 2) Only 2 and 3 follow 3) Either 1 or 4 & 2 follow 4) Only 2 follow 5) None of these

4) Only 2 follow

9. Statements: Notations

a. All bulbs are radios. BB-R

b.All radios are fans. RR-F

 c.No fans are taps. FF/TT

 Conclusions: Notations

 1.Some fans are bulbs. F-B

 2. No taps are bulbs. TT/BB

3. Some radios are bulbs. R-B

 4. Some taps are radios. T-R x

 A) 1, 2 and 3 follow B) 2, 3 and 4 follow

 C) Only 1 and 2 follow D) Only 1 and 3 follow

 E) 2 and 4 follow

A) 1, 2 and 3 follow

10. Statements: Notations

 a. Some lions are tigers. L - T

 b. Some tigers are horses. G - H

 c. Some horses are deers. H - F

Conclusions: Notations

1. Some lions are horses. L – H x

 2. Some tigers are deers. T – D x

 3. Some lions are deers L – D x

 4. Some horses are lions H – L x

1) None follows 2) All follow 3) Only 1 and 4 follow 4) Only 2 and 3 follow 5) None of these

1) None follows

11. Statements: Notations

a.Some Germans are not Africans. G /Af Af

 b.All Africans are Asians. Af Af-As

 c.Some Asians are Americans As-Am

Conclusions: Notations

1.Some Germans are not Asians. G/As As x

2.Some Germans are not Americans. G/Am Am x

 3.All Africans are Americans. Af Af- Am x

 4.Some Americans are Germans. Am - G x

A) Only 1 follows B) Only 2 follows C) Only 3 follows D) Only 4 follows E) Either 2 or 4 follows E) Independently each conclusion is incorrect but 2 and 4 makes complementary Pair (4 gives Some Germans are

Americans)

12. Statements: Notations

 a. Only stars are moons. MM- S

 b.No galaxy is a star. GG / SS

 c.No planets are moons. PP / MM

Conclusions: Notations

1.Some moons are not planets M / PP

2.No moon is a glaxy. MM / GG

 3.No galaxy is a planet. GG / PP x

 4.No stars are planets. SS / PP x

A)1, 2 and 4 follow B)1, 3 and 4 follow C)2, 3 and 4 follow D)3 and 4 follow E)1 and 2 follow

E)1 and 2 follow

13. Statements: Notations

a.Some doctors are lawyers. D-L

b.All lawyers are Indians. LL- I

c.Some Indians are strong. I-S

Conclusions: Notations

1.Some lawyers are Indians. L-I

2.Some doctors are Indians. D-I

 3.Some doctors are strongs. D-S x

 4.Some doctors are not strongs. D/SS x

A)1, 2 and 3 follow B)1,2 and 4 follow

C) 2 and 3 follow D) 2 and either 3 or 4 follow

E) 1,2 and either 3 or 4 follow

E)1,2 and either 3 or 4 follow

14. Statements: Notations

a.All chairs are tables. CC-T

b.No tables are ships. TT/SS

c.Some hammers are ships. H-S

Conclusions: Notations

1.Some hammers are not chairs. H/CC

 2.Some hammers are not tables. H/TT

 3.Some tables are not hammers. T/HH x

 4.No chair is a ship CC/SS

A)1,3 and 4 follow B)2,3 and 4 follow

C)2 and 4 follow D)3 and 2 follow

E)1,2 and 4 follow

E)1,2 and 4 follow

15. Statements: Notations

a.Some books are pens. B - Pe

 b.All pens are pencils. Pe Pe- Pl

 c.No pencils are copies. Pl Pl /CC

 d.Some copies are not calculators. C / Ca Ca

Conclusions: Notations

1.Some books are not calculators. B / Ca Ca x

 2. No books are copies. BB / CC x

3. No pens are copies Pe Pe / CC

 4. Some pencils are not copies Pl / CC

A) Only 3 follows B) Only 4 follows

C) Only 3 and 4 follow D) All follow

E) None of these

 C) Only 3 and 4 follow

16. Statements: Notations

a.No cops are police. CC / PP

 b.All police are humans. PP - H

 c.All humans are politicians. HH – Pc

 D.No politicians are doctors. Pc Pc / DD

Conclusions: Notations

1.Only politicians are police. PP - Pc

 2.Only police are politicians. Pc Pc – P x

 3.No humans are cops. HH / CC x

 4.Some cops are not humans. C / HH x

A)All follow B)Only 1 follows

C)Only 2 follows D)None follows E)None of these

 D)None follows b + c gives All police arepoliticians.But this can’t be Interepted as either 1 or 2 (Note: If “Only politicians are police”,then”All police are politicians”is true.Butnot vice versa)

**17.**    **Statements:** Some tumblers are plates.

Some bottles are tumblers.

All plates are spoons.

**Conclusions: I.** Some spoons are tumblers

**II.** Some spoons are plates

**III.** Some bottles are plates

**IV.** No bottle is a plate

(1) Either III or IV follow

(2) Only I & II follows

(3) All follow

(4) Only III & II follows

(5) None of these

Statement notations : Conclusion notations:

T – P S – T

B – T S – P

PP – S B – P ….x

 BB / PP …x

Answer: (5) None of these

**18.**    **Statements:** All speeches are copies.

All essays are speeches.

No essays are books.

**Conclusions: I.** Some books are speeches

**II.** No books are essays

**III.** No books are copies

**IV.** No book are speeches

(1) None of these

(2) All follow

(3) Either I or II follow.

(4) Only II, III & IV follows

(5) Either I or IV and II follows

Statement notations : Conclusion notations:

SS – C B – S ….x

EE – S BB / EE

EE / BB BB / CC ….x

 BB / SS ….x

Answer: (5) Either I or IV and II follows

**19.**    **Statements:** All roots are stems.

Some branches are trees.

Some stems are branches.

**Conclusions: I.** Some trees are stems

**II.** Some trees are branches

**III.** All trees are stems

**IV.** Some trees are not branches

(1) Only II follow

(2) Only I & II follow

(3) Only I follows

(4) Only either I or III & II follow

(5) Only I, II & III follow

Statement notations : Conclusion notations:

RR – S T – S …x

B – T T – B

S – B TT – S …x

 T / BB …x

Answer: (1) Only II follow

**20.**    **Statements:** All asteroids are stars.

No stars are planets.

 Some asteroids are satellites.

**Conclusions: I.** No planet is asteroid

**II.** Some satellites are stars

**III.** Some planets are not satellites

**IV.** Some satellites are not planets

(1) Only II follows

(2) Only I & II follows

(3) Only I, II & IV follows

(4) None follows

(5) All follows

Statement notations : Conclusion notations:

AA – S PP / AA

SS / PP St – S

A – St P / St St …x

 St / PP

Answer: (3) Only I, II & IV follows

**21.**    **Statements:** Some books are copies.

Some copies are magazines.

No magazines is a dictionary

**Conclusions: I.** No copies are dictionary

**II.** Some copies are dictionary

**III.** Some copies are not dictionary

**IV.** No books are magazines

(1) Only III follows

(2) Only either I or II & III follow

(3) Only I follows

(4) Only either I or II follows

(5) None of these

Statement notations : Conclusion notations:

B – C CC / DD ….x

C – M C – D ….x

MM / DD C / DD

 BB / MM ….x

Answer: (2) Only either I or II & III follow

**22.**    **Statements:** No navies are air forces.

All armies are navies.

All air forces are combats.

**Conclusions: I.** No air forces are navies

**II.** Some combats are airforces

**III.** Some combats are not navies

**IV.** No armies are air forces

(1) Only either I or II follows

(2) Only II follows

(3) Only either I or IV follows

(4) All follows

(5) None follows

Statement notations : Conclusion notations:

NN / Af Af Af Af / NN

ArAr – N C – Af

Af Af – C C / NN

 ArAr / Af Af

Answer: (4) All follows

**23.**    **Statements:** Some headphones are radios

All radios are telephones.

No telephones are television

**Conclusions: I.** No radios are television

**II.** Some headphones are not television

**III.** Some headphones are telephones

**IV.** Some telephones are not television

(1) All follow

(2) Only I, II & III follow

(3) Only II, III & IV follow

(4) Only I, III & IV follow

(5) None of these

Statement notations : Conclusion notations:

H – R RR / Tv Tv

RR – T H / Tv Tv

TT / Tv Tv H – T

 T / Tv Tv

Answer: (1) All follow

**24.**    **Statements:** All tourists are rich.

 Some tourists are leaders.

Some rich are ministers

**Conclusions: I.** Some leaders are ministers

**II.** All leaders are rich

**III.** Some ministers are not rich

**IV.** Some rich are not tourists

(1) All follow

(2) None follows

(3) Only I & II follow

(4) Only II & III follow

(5) None of these

Statement notations : Conclusion notations:

TT – R L – M …x

T – L LL – R ….x

R – M M / RR ….x

 R / TT ….x

Answer: (2) None follows

**25.**  **Statements:** Some pens are keys.

Some keys are locks

All keys are rings.

**Conclusions: I.** Some pens are locks.

 **II.** Some pens are not locks

**III.** Some pens are rings

**IV.** Some pens are not rings.

Statement notations : Conclusion notations:

P – K P – L …x

K – L P / LL ….x

KK – R P – R

 P / RR …x

(1) Only either III or IV follow

(2) Only either I or II follows

(3) Only either I or II & III follow

(4) None follow

(5) None of these

Answer: (3) Only either I or II & III follow

**26.**    **Statements:** No mat is fan. Some fans are cars.

All cars are buses.

**Conclusions: I.** All mats are cars

**II.** All buses are cars

**III.** Some buses are fans

**IV.** No bus is a mat

(1) Only either II or IV and III follow

(2) Only I and II follow

(3) Only IV follow

(4) Only III follow

(5) None of these

Statement notations : Conclusion notations:

MM / FF MM – C …x

F – C BB – C …x

CC – S B – F

 BB / MM …..x

Answer: (4) Only III follow

**COMMENTS**

Syllogism conclusion by new Transformed Raval’s Notations is in accordance with Aristotle’s rules for the same. It is visually very transparent and conclusions can be deduced at a glance, moreover it solves syllogism problems with any number of statements and it is quickest of all available methods .Venn and Euler introduced their respective methods for categorical syllogism considering Aristotle method very cumbersome. By new Transformed Raval method for solving categorical syllogism, solving categorical syllogism is as simple as pronouncing ABC and it is just continuance of Aristotle work on categorical syllogism. Any apology for the method pursued would be either needless or useless. It is in accordance with Aristotle’s rules for categorical syllogism. Author wants acknowledgement of new Transformed Raval notation method by concerned scholars of the subject.

 For any further suggestions/queries

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