VIVEKANANDA COLLEGE
THAKURPUKUR
KOLKATA-700063

NAAC ACCREDITED 'A' GRADE

Topic: Traditional Subject-Predicate Propositions

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Name of the Teacher: Tania Roy

Name of the Department: Philosophy

Quantification Theory:Traditional Subject-Predicate Propositions

Tania Roy
Assistant Professor
Vivekananda College, Thakurpukur
Kolkata-700063

Traditional Subject-Predicate Propositions:

There are four types of propositions.

- All humans are mortal. (Universal Affirmative:A)
- No humans are mortal. (Universal Negative:E)
- Some humans are mortal. (Particular Affirmative:I)
- Some humans are not mortal. (Particular Negative:O)

Quantification of A Proposition:

All humans are mortal. (A)

If anything is a human, then it is mortal.

For any given thing x, if x is a human, then x is mortal.

Given any x, x is human ⊃ x is mortal.

(x) [Hx ⊃ Mx]

Quantification of the E Proposition:

No humans are mortal. (E)

↓

If anything is human, then it is not mortal.

↓

For any given x, if x is a human, then x is not mortal.

↓

Given any x, x is a human ⊃ x is not mortal.

↓

(X) [Hx ⊃ ~ MX]

Quantification of the I Proposition:

Some humans are mortal. (I)

There is at least one thing that is human and is mortal.

There is at least one x such that x is a human and x is mortal.

There is at least one x such that x is a human · x is mortal.

(∃x) [Hx · Mx]

Quantification of the O Proposition:

Some humans are not mortal.(O)

↓

There is at least one thing that is a human and is not mortal.

↓

There is at least one x such that x is human and x is not mortal.

↓

There is at least one x such that x is a human · x is not mortal.

↓

$(\exists x)\ [\ Hx \cdot \sim Mx]$

We can use the greek letters phi(ϕ) and psi(ψ) instead of letters-

$(x)\ [\phi x \supset \psi x]$

$(x)\ [\phi x \supset \sim \psi x]$

$(\exists x)\ [\phi x \cdot \psi x]$

$(\exists x)\ [\phi x \cdot \sim \psi x]$