

Ex/Phil/PG/3.4.4/70/2018

MASTER OF ARTS EXAMINATION, 2018

(2nd Year, 3rd Semester)

PHILOSOPHY

Optional [Logic-I]

Full Marks : 30

Time : Two Hours

The figures in the margin indicate full marks.

1. What does Belnap think to be the main cause of the difficulty in Prior's introduction of the connective 'tonk' ? Do the same difficulties arise in the case of the connective 'plonk' ? If not, why not ? Answer after Belnap. 3+4+3

Or

2. How, according to Heyting, does intuitionistic logic differ from formal logic ? Does intuitionistic logic involve formalization ? Discuss. 7+3
3. Prove that
If ' $Q \equiv R$ ' is derivable in the system AX and if ' $P(R)$ ' is obtained from ' $P(Q)$ ' by putting ' R ' for ' Q ' in ' $P(Q)$ ', then ' $P(Q) \equiv P(R)$ ' is derivable in AX. 10

[Turn over]

[2]

Or

4. (a) Prove in the System AX the following

$$p \supset (q \supset (p \cdot q)). \quad 8$$

(b) What derived rule does follow from this theorem ? 2

5. Why, according to Strawson, the logical connective ‘.’ cannot play the same role as ‘and’ ? 5

Or

6. State the three distinct definitions of consistency of any set of axioms. 5

7. Prove in the System AX the derivable formula : 5

$$(p \supset \sim p) \supset \sim p$$

Or

8. (a) Translate the axioms of PM system in Polish notation. 3

(b) Express ‘ $P \supset (P \vee Q)$ ’ in terms of the dagger function. 2