

2011**M.A.****4th Semester Examination****PHILOSOPHY****PAPER—PHI-2205****Full Marks : 40****Time : 2 Hours***The figures in the right-hand margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.***[Advanced Logic]****Answer any two questions from Group—A
and one question from Group—B****Group—A**

1. (a) State the transformation rules in P.M.
- (b) Do you think that another transformation rule is necessary to rewrite Wffs according to the definitions in P.M.? Give reasons for your answer.
- (c) Prove the following in P.M.

$$(i) (p \supset q) \supset ((p \supset r) \supset (p \supset (q \cdot r)))$$

$$(ii) (p \equiv q) \supset ((r \vee p) \equiv (r \vee q))$$

4+4+(4+4)

(Turn Over)

2. (a) What is strict implications ? Explain with an example.
 (b) What are the paradoxes of strict implication ? Explain.
 (c) How are the paradoxes resolved ? 4+6+6
3. Prove the following in T System : 4×4
- (i) $(P = q) \supset (LP \equiv Lq)$
 (ii) $L(P \equiv q) \equiv (P = q)$
 (iii) $\sim LP \equiv M \sim P$
 (iv) $\sim M(P \vee q) \equiv (\sim MP \cdot \sim Mq)$
4. Answer the following according to PM.
- (a) Explain the rule for substitution of equivalents.
 (b) Prove that if $x \supset (y \supset z)$ is a thesis then $y \supset (x \supset z)$ is a thesis also.
 (c) Prove the Law of transposition. 6+6+4

Group—B

5. In what sense is PM system consistent ? 8
6. Prove the following in PM.
- (i) $(P \supset (q \supset r)) \supset ((P \cdot q) \supset r)$
 (ii) $(P \equiv q) \equiv (\sim P \equiv \sim q)$ 4+4
7. (a) Explain why the Modal operators are not truth functional.
 (b) Explain with an example the rule of LMI in system T. 4+4