2010

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 *two* questions from Group—A
and *one* question from Group—B

Group—A

1. State and explain (in brief) the following notions used in PM System :

(a) Primitive Symbol.

(b) Formation Rules.

(c) Axioms. 5+5+6

Or

Prove the following Theorems within PM System.

(i) $(P \supset \sim q) \supset (p \supset \sim P)$

(ii) $\sim (P \vee q) \supset (\sim P \vee \sim q)$ 8+8

2. Prove the following theorems within PM system.

(i) $(P \equiv q) \supset (\sim P \equiv \sim q)$

(ii) $P \equiv (P \cdot P)$

(iii) $\sim (P \cdot q) \supset (\sim P \vee \sim q)$

(iv) $\big(P \supset (q \supset \vee)\big) \supset \big((P \supset q) \supset (P \supset \vee)\big)$ 4×4

3. (a) Prove the following in Modal System T :

(i) $M(p \cdot q) \supset (Mp \cdot Mq)$

(ii) $L(p \cdot q) \equiv (Lp \cdot Lq)$

(iii) $\big((p \prec q) \cdot (q \prec r)\big) \supset (p \prec r)$

(b) 'Whatever follows logically form a necessary truth is itself necessarily true'—justify the soundness of this principle. 4+4+4+4

4. Prove that system T is consistent with respect to '~'. 16

Group—B

5. In what sense is PM system complete? 8

6. Prove the following

(i) $\sim\sim P \supset P$ (PM System).

(ii) $(\sim MP \vee \sim Mq) \supset \sim M(p \cdot q)$ (T System). 4+4

7. Set out clearly the base of the Model System T. 8