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MPYE-001

M. A. (PHILOSOPHY)
(MAPY)

Term-End Examination

December, 2024

MPYE-001 : LOGIC

Time : 3 Hours

Maximum Marks : 100

Note : (i) *Answer all the **five** questions.*

(ii) *All questions carry equal marks.*

(iii) *Answers to Question Nos. 1 and 2 are to be written in about **500** words each.*

1. Explain the significance of symbols in Logic. Discuss in detail the truth values of 'Conjunction', 'Disjunction', 'Implication' and 'Equivalence' along with their truth tables. 20

Or

What is Quantification ? Explain the rules of quantification along with their symbols in detail. 20

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2. Explain Aristotle's analysis of propositions.
What is the significance of class and class membership for Aristotelian Logic ? 20

Or

What is Syllogism ? Draw a distinction between Deductive and Inductive Syllogisms with adequate examples. 20

3. Answer any *two* of the following questions in about **250** words each :

(a) Give an amount of the fallacies of induction with examples. 10

(b) Construct proof of validity for the following : 10

(i) (1) $A \cdot B$

(2) $(A \vee C) \rightarrow D$

$\therefore / A \cdot D$

(ii) (1) $(\exists x)(Ax \cdot Cx)$

(2) $(\exists x)(Bx \cdot Cx)$

$\therefore / (\exists x)(Ax \cdot Bx)$

(c) Discuss the problem of Existential Import.
What solution was proposed to resolve it ?

10

- (d) Test the validity/invalidity of the following using Venn diagram : 10

(i) All world leaders are sincere.

Some businessmen are sincere.

Therefore, some businessmen are world leaders.

(ii) All musicians are creative.

Some musicians are popular people.

Therefore, some popular people are creative.

4. Answer any *four* of the following questions in about **150** words each :

(a) What is the relation between Truth and Validity ? 5

(b) Distinguish between Connotation and Denotation. 5

(c) Distinguish between Observation and Contraposition. 5

(d) Draw the truth table for NAND and NOR gates. 5

- (e) What are Formal Fallacies ? Explain the fallacy of undistributed middle. 5
- (f) Check the validity of the following using truth table : 5
- (i) $A \rightarrow B$
- (ii) $B \rightarrow C$
- $\therefore A \rightarrow C$

5. Write short notes on any *five* of the following in about **100** words each :

- (a) Term 4
- (b) Rules of Replacement 4
- (c) Square of Opposition 4
- (d) Distribution of Terms 4
- (e) Laws of Thought 4
- (f) Multivalued Logic 4
- (g) Sorites 4
- (h) Modus Tolens 4

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