No. of Printed Pages : 4

MPYE-001

M. A. PHILOSOPHY

(MAPY)

Term-End Examination

December, 2021

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** should be in about **500** words each.*

1. Use Euler's and Venn diagrams to show distribution of terms in all kinds of categorical proposition. 20

Or

Describe different kinds of fallacy of induction.

2. What is the importance of proving invalidity ? Explain, why the use of truth-table is essential to prove invalidity. 20

Or

Write an essay on digital gates.

3. Answer any ***two*** of the following questions in about **250** words each : 10 each

   (a) Distinguish between two kinds of inference.

   (b) Construct truth tables to distinguish between tautology and contradiction.

   (c) Write a brief essay on the strengthened rule of C. P.

   (d) Explain the rules of universal instantiation and existential instantiation.

4. Answer any ***four*** of the following questions in about **150** words each : 5 each

   (a) Explain the meaning of denotation and connotation. Show how they are related.

(b) Distinguish between pure hypothetical syllogism and mixed hypothetical syllogism with examples.

(c) Using the method of reduction transform valid moods of the fourth figure.

(d) Explain the application and limits of truth table method.

(e) Combine reductio ad absurdum and truth-table methods to prove the following arguments :

(1) $(B \vee N) \Rightarrow (K \wedge L)$

$\neg K$

$\neg M$ / $\therefore \neg B \wedge \neg M$

(2) $(M \vee N) \Rightarrow (O \wedge P)$

$(O \vee Q) \Rightarrow \neg R \wedge S$

$(R \vee T) \Rightarrow (M \vee N)$ / $\therefore R$

(f) Explain basic operations on fuzzy sets.

5. Write short notes on any ***five*** of the following in about ***100*** words each : 4 each

(a) Zermelo-Frankel-Skolen's theory

(b) Complex Constructive Dilemma

(c) Material implication

(d) Fallacy of accident

(e) Meaning of proof of validity

(f) Universal Generalization

(g) Quantification and equivalence relation

(h) Operators and Boolean Algebra