

No. of Printed Pages : 3

**MPYE–001**

**M. A. (PHILOSOPHY)**  
**(MAPY)**

**Term-End Examination**

**December, 2023**

**MPYE-001 : LOGIC**

*Time : 3 Hours*

*Maximum Marks : 100*

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**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.*

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1. Describe *five* kinds of compound propositions with truth-table in detail. 20

*Or*

Define Fallacy. Explain the fallacies of presumption.

2. Give an account of Quantification. Explain the Quantification rules. 20

*Or*

Explain Formal Logic. Describe the rules of Inference in detail.

**P. T. O.**

3. Answer any *two* of the following questions in about **250** words each : 10 each
- (a) Write a note on conditional proof and rule of strengthened rule of conditional proof.
  - (b) Explain Square of Opposition.
  - (c) Construct formal proofs of validity for the following arguments :
    - (i)  $(x) (\sim Px \Rightarrow \sim Qx)$   
 $\sim Px$   
 $\therefore \sim Qx$
    - (ii)  $(x) [(Ax \vee Gx) \Rightarrow Sx]$   
 $(\exists x) [Wx \wedge Ax]$   
 $\therefore (\exists x) [Wx \wedge Sx]$
  - (d) Draw the symbols for basic logic gates and explain their logical functions.
4. Answer any *four* of the following questions in about **150** words each : 5 each
- (a) Briefly explain the structure of propositions.
  - (b) Explain briefly figure and mood.
  - (c) Describe Disjunctive syllogism with an example.
  - (d) Prove the invalidity of the following argument :
    - (i)  $Ix \vee (Kx \wedge Jx)$

[ 3 ]

$$(ii) \quad \neg (Ix \vee Jx) \vee (Lx \Leftrightarrow \neg Mx)$$

$$(iii) \quad \neg (Lx \Rightarrow \neg Mx) \vee (\neg Nx \wedge Mx)$$

$$(iv) \quad (Nx \Rightarrow Ox) \wedge (Ox \Rightarrow Mx)$$

$$(v) \quad \neg (\neg Jx \vee Kx) \vee Ox$$

$$\therefore Oa$$

- (e) Test the logical status of the following argument through Venn Diagram :

All Scientific theories are empirical.

All Scientific theories are provable.

$\therefore$  Some provable are empirical.

- (f) Differentiate between reason and inference.

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

- (a) Structure of Antilogism
- (b) Petitio principii
- (c) Bi-conditional
- (d) Enthymeme
- (e) Argumentum Ad Baculum
- (f) Free variable
- (g) Multy valuated logic
- (h) Indirect proof