

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

**Term-End Examination**

**December, 2015**

**MPYE-001 : LOGIC**

*Time : 3 hours*

*Maximum Marks : 100*

- Note :** (i) Answer *all five* questions.  
(ii) *All* questions carry *equal* marks.  
(iii) Answer to question no. 1 and 2 must be in about 500 words each.

1. What is Categorical Syllogism ? Explain the rules governing the validity of categorical syllogisms. 20

**OR**

What is Fallacy ? Explain the fallacies of presumption. 20

2. Construct formal proof of validity for the given argument. 20

$$A \Rightarrow \neg(B \Rightarrow C)$$

$$(D \wedge B) \Rightarrow C$$

$$D \therefore \neg A$$

**OR**

What do you understand by Quantification ? Explain the quantification rules. 20

3. Answer **any two** of the following in **not** more than **250** words each :
- (a) Draw the traditional square of opposition and explain the relations of sub-alternation and contradiction. 10
  - (b) Distinguish between material equivalence and logical equivalence. 10
  - (c) Use conditional proof to construct formal proof of validity for the given argument. 10  
 $S \Rightarrow (T \wedge U)$   
 $(T \vee U) \Rightarrow \vee / \therefore S \Rightarrow \vee$
  - (d) Draw the symbols for basic logic-gates and explain their logical functions. 10
4. Answer **any four** of the following in **not** more than **150** words each :
- (a) What are propositions ? Briefly explain their nature. 5
  - (b) Explain mixed hypothetical syllogism. 5
  - (c) Draw venn diagram for AOO - II. 5
  - (d) Construct truth table for implication. 5
  - (e) Explain contraposition with an example. 5
  - (f) Draw truth tables for NOR and NAND gates. 5
5. Write short notes on **any five** of the following in **not** more than **100** words :
- (a) Disjunction 4
  - (b) Figure and mood 4
  - (c) Truth and validity 4
  - (d) Argument from ignorance 4
  - (e) Obversion 4
  - (f) Difference between rules of inference and replacement. 4
  - (g) Propositional function 4
  - (h) Fuzzy logic 4