

2014

PHILOSOPHY

(Major)

Paper : 1.1

(Logic—I)

Full Marks : 80

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Answer the following in 1 or 2 word(s) each as directed : 1×10=10
- (a) Is logic normative?
 - (b) Logic provides methods and criteria for differentiating correct reasoning from incorrect ones. Is it true?
 - (c) Can the logical constant 'Not' (\sim) be used to connect two statements?
 - (d) Does a variable possess a definite meaning?
 - (e) Is $\sim p$ a truth function?

- (f) What will be the truth value of $p \supset q$, if p is true and q is false?
- (g) How many kinds of propositions are there according to the modern classification of propositions?
- (h) State the name of the proposition which asserts a relation between two or more constituents.
- (i) State the name of the logician who recognized the importance of sets in logic.
- (j) Two sets having the same member are called —.

(Fill in the blank)

2. Answer very briefly : 2×5=10

- (a) Give an example of an argument form.
- (b) Define a variable.
- (c) Symbolize the following proposition using logical constant and propositional variable :
 'The weather is not bright'
- (d) Give an example of class-membership proposition.
- (e) What is a finite set?

3. Answer any four briefly : 5×4=20

- (a) Write a short note on 'logic as both a science and an art'.
- (b) What do you mean by logical constants?
- (c) Define truth function with an example. What are its basic forms?
- (d) How do you explain the relation between sentence and proposition?
- (e) What are subjectless proposition and subject-predicate proposition? Give examples.
- (f) What do you understand by an empty set?

4. Define an argument with example. State the nature of an argument. 4+6=10

Or

Explain the relation between validity or invalidity of an argument and the truth or falsehood of its premises and conclusion. 10

5. What is truth table? What is a decision procedure? Why is truth table method called a decision procedure? What are the basic functions of truth table method? Explain.

2+2+3+3=10

(4)

Or

Use truth tables to characterize the following as tautologous, contradictory or contingent :

5×2=10

(i) $(p \vee q) \supset \{ \sim (p \cdot q) \vee (p \vee q) \}$

(ii) $\sim \{ \sim (p \supset q) \vee (p \supset q) \}$

6. What is a compound proposition? Define each of the different forms of compound proposition with examples. 2+8=10

Or

What do you mean by general proposition? Illustrate the different forms of general proposition. 10

7. Write short notes on the following : 5×2=10

- (a) The concept of set
(b) Domain of individuals

Or

Explain two operations on sets with example. 10

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