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**63/1 (SEM-5) DSE1/PHLHE5016**

**2023**

**PHILOSOPHY**

Paper : PHLHE5016

**(Philosophy of Logic)**

Full Marks : 80

Pass Marks : 32

Time : Three hours

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

1. Choose the correct answer : **(any six)**  
1×6=6

- (a) An inductive argument is concerned with
- (i) Formal truth
  - (ii) Material truth
  - (iii) Both formal and material truth
  - (iv) Informal truth

*Contd.*

(b) Formal logic deals with

- (i) Deductive reasoning and the validity of the inferences produced
- (ii) Inductive and deductive reasoning
- (iii) Works entirely in symbols that represent inferences
- (iv) Invalid reasoning

(c) The logical connective word is

- (i) scarcely
- (ii) ought to
- (iii) neither-nor
- (iv) either-or

(d) P. F. Strawson published his first book, *An Introduction to Logical Theory* in

- (i) 1953
- (ii) 1952
- (iii) 1959
- (iv) 1982

(e) A conjunctive truth function (p.q.) is true under the condition

- (i) if both the variables are true
- (ii) if both the variables are false
- (iii) if one of the both variables is true
- (iv) if one of the both variables is false

(f) What is the ideal of logic?

- (i) Reality
- (ii) Beauty
- (iii) Good
- (iv) Truth

(g) The name of the symbol ' $\supset$ ' is called

- (i) curl
- (ii) vel
- (iii) horseshoe
- (iv) dot



(h) ..... is known as the father of formal logic.

- (i) Aristotle
  - (ii) Frege
  - (iii) George Boole
  - (iv) Socrates
- (i) The calculus of propositions or propositional logic is also known as
- (i) Predicate logic
  - (ii) Formal logic
  - (iii) Sentential logic
  - (iv) Informal logic
- (j) According to P. F. Strawson, the truth functional statement is
- (i) an ideal system
  - (ii) an interpreted system
  - (iii) a coherent system
  - (iv) a general system

2. Answer the following questions : (*any five*)  
2×5=10

- (a) What is first order logic?
- (b) What is free variable?
- (c) What is truth table method?
- (d) What do you mean by inductive reasoning?
- (e) Write the entailment of the statement given below :  
"X is a younger son."
- (f) Define tautologous statement.
- (g) What do you mean by Bioconditional function?

3. Answer the following questions : (*any six*)  
5×6=30

- (a) Mention *any five* characteristics of a deductive reasoning.
- (b) Write a short note on second order vocabulary.
- (c) Distinguish between logical constant and propositional variable.
- (d) Write a short note on 'generality'.
- (e) Write a short note on 'logical form'.

- (f) Give a brief account of symbolizing our everyday language.
- (g) Give a brief account of Inter-definability of truth functions.
- (h) Explain in brief about the nature of reasoning.
- (i) Briefly write about the nature of philosophy of logic.
- (j) Give a brief account of the axiomatic system.

4. Answer **any two** of the following questions :  
10×2=20

- (a) Construct truth table of the following compound expressions and determine whether they are tautologies, contradictory and contingent :  
5+5=10
- (i)  $(p \vee q) \equiv \sim(\sim p \supset q)$
- (ii)  $\{(p \supset q), \sim q\} \supset \sim p$
- (b) What is truth function? Explain the basic truth functions with the help of truth tables.  
2+8=10
- (c) "Truth table method is a decision procedure." Discuss.

- (d) What do you mean by inconsistency? What are the different types of inconsistency? Explain with suitable examples.

5. Answer the following questions : (**any one**)  
14×1=14

- (a) Discuss P. F. Strawson's refutation of identification of logical constants with ordinary words.
- (b) Discuss the deductive system of truth function.
- (c) Explain the procedure for the determination of the validity or invalidity of arguments.