Philosophy - PHYE 102
Logic and Logical Theory

Answer FIVE (05) Questions only.
Time allowed: Three (03) Hours
The total number of questions in this paper is 10

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01. (a) I. Explain the practical value of Logic

           II. "Logic is a formal science" clarify this statement

                                           (02x4=08 marks)

    (b) Write notes on followings in Aristotelian logic

           I. Terms

           II. Categorical propositions

           III. Distribution of terms in categorical propositions

           IV. Copula

                                            (04x3=12 marks)

02. (a) Discuss the difference between immediate inference and mediate inference.

                                              (10 marks)

    (b) Define clearly what is 'Eduction' and explain main four types of eduction

                                              (10 marks)

P.T.O.

03. (a) Explain the Logical relationships between categorical propositions in the traditional square of opposition.

(10 marks)

(b) Explain the problem that arise when the traditional square of opposition is used in connection with categorical propositions with empty reference subjects.

(10 marks)

04. (a) Determine the validity of following syllogisms. when a syllogism is invalid write down the rule/rules violated and name the fallacy that results.

(i) Some musician are creative people. All composers are musicians. Therefore, some composers are creative people.

(ii) Some productions are not performances. Some performances are not comedies Therefore, some comedies are not productions.

(iii) Swans are not black. Because all black things are not white and swans are white.

(iv) All divers are courageous. All boys are divers. Therefore all boys are courageous.

(04x3=12 marks)

(b) I. Explain the reason for the fallacy of illicit minor not to occur if the conclusion is not a universal proposition.

(04 marks)

II. State the valid moods of the first figure and give a symbolic example for each.

(04 marks)

05. **Either**

(a) Give an account of the five - membered Indian syllogism

(10 marks)

(b) Compare and contrast the nature of inference in Aristotelian and Indian syllogisms.

(10 marks)

or

Write notes on
- (i) Anumana
- (ii) Pratyaksa
- (iii) Vyapti
- (iv) Hetvabhasa
- (v) Nyaya Bindu in Indian Logic

(05x4=20 marks)

06. Explain followings with examples

- (I) Transitive relations
- (II) Many - valued logic
- (III) Mutually exclusive and together exhaustive systems
- (IV) Principle of sufficient reason

(04x5=20 marks)

07. (a) Symbolize the following sentences in terms of the predicate calculus and giving your schemes of abbreviation.

- I. Sri Lankan are medium height.
- II. Only parents and students have been invited.
- III. If all are philosophers, then Aristotle is a philosopher.
- IV. There is a doctor at hospital.

(04x2.5 = 10 marks)

(b) Prove the following arguments by derivation method.

- I. $\wedge x\,(Fx \rightarrow Gx)$. FA $\therefore$ Vx Gx
- II. $\wedge x\,(Fx \rightarrow Gx)$. Vx $(Hx \wedge Fx)$ $\therefore$ Vx $(Hx \wedge Gx)$

(02x5 = 10 marks)

08. Explain the following giving examples

- i. Dilemma and its different forms
- ii. Lows of thought

(02x10 = 20 marks)

P.T.O.

09. (a) Name and describe two fallacies which could be grouped under cases of weak induction in informal fallacies.

(08 marks)

. (b) Explain briefly the following informal fallacies giving an example for each.

I. Argumentum ad populam
II. Fallacy of accident
III. Fallacy of Irrelevant conclusion

(03x4 = 12 marks)

10. (a) Write short notes on **two** of the following

(i) Strong disjunction and weak disjunction
(ii) Mixed disjunction syllogism
(iii) Logic and theory of knowledge
(iv) Critical thinking

(02x5 = 10 marks)

(b) Explain the contribution of **two** of following to the development of Logic.

I Aristotle
II. Gottlob Frege
III. A.N. Whitehead
IV. Bertrand Russell

(02x5 = 10 marks)