

M.A. 1st Semester Examination, 2023

PHILOSOPHY

PAPER – PHI-102

Full Marks : 50

Time : 2 hours

Answer **all** questions

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

GROUP—A

Answer any **two** questions : 10 × 2

1. Construct a formal *proof of validity* of the following arguments : 5 + 5

$$(a) (\exists x) Ux \supset (y)[(Uy \vee Vy) \supset Wy]$$

$$(\exists x) Ux \cdot (\exists x) Wx / \therefore (\exists x)(Ux \cdot Wx)$$

(b) If there are any geniuses ; then all great composers are geniuses, If anyone is temperamental, all geniuses are temperamental. Therefore, if anyone is a temperamental genius, then all great composers are temperamental.

(Gx : x is a genius, Cx : x is a great composer, Px : x is a person, Tx : x is temperamental) 5 + 5

2. Prove the *invalidity* of the following : 5 + 5

(a) $(x)(y) [Ax \supset (By \vee Cy)]$
 $(z) \{ [(y) By \vee (y)Cy] \supset Dz \}$
 $\therefore (\exists x)(\exists z) (Ax \supset Dz)$

(b) $(x)(Kx \supset Lx)$
 $(\exists x)(\exists y) (Lx \cdot My) \therefore (y)(Ky \supset My)$

3. Answer the following : 2 + 2 + 2 + 2 + 2

(a) What is IP ?

(b) What is multiply general proposition ?

- (c) What is individual variable ?
- (d) What is invalidity ?
- (e) Write down the second general convention governing the expression ' $\phi\mu$ ' and ' $\phi\nu$ '.
4. (a) Explain the rules of constructing truth tree.
- (b) *Prove the validity* of the following arguments using *truth tree* :
- (i) $(A \cdot B) \supset C$
 $\sim A \supset D \therefore B \supset (C \vee D)$
- (ii) $(A \vee B) \supset C \therefore C \vee A$ 4 + (3 + 3)

GROUP-B

Answer any **four** questions of the following : 5 × 4

5. Explain the Reductio-Ad-Absurdum method with example.

6. Explain with example the strengthened rule of conditional proof.
7. Symbolize the following (Use the suggested notation) ?
- (a) If something is missing, then if nobody calls the police, someone will be unhappy.
 ($Mx : x$ is missing, $Px : x$ is a person, $Cx : x$ calls the police, $Ux : x$ will be unhappy)
- (b) If every position has a future and no employees are lazy, then some employees will be successful. ($Px : x$ is a position, $Fx : x$ has a future, $Ex : x$ is an employee. $Lx : x$ is lazy)
8. Identify and explain all of the mistakes in the following erroneous proof.

$$1. (\exists x) (Fx \cdot Gx)$$

$$2. (\exists x) (\sim Fx \cdot Gx) / \therefore (\exists x) (Fx \cdot \sim Fx)$$

$$\rightarrow 3. Fx \cdot Gy$$

$$4. Fx \text{ — 3, simp.}$$

$$5. Fx \text{ — 1, 3 - 4 EI}$$

$$\rightarrow 6. \sim Fx \cdot Gx$$

$$7. \sim Fx \text{ — 6 simp.}$$

$$8. \sim Fx \text{ — 2, 6 - 7 EI}$$

$$9. Fx \cdot \sim Fx \text{ — 5, 8 Conj}$$

$$10. (\exists x) (Fx \cdot \sim Fx) \text{ — 9. EG}$$

9. Explain the final version of EI.

10. (a) What is Truth Tree method ?

(b) Determine the *validity* of the following argument by means of *truth tree method* :

$$A \supset B$$

$$B \supset C \therefore A \supset C$$

2 + 3

[Internal Assessment – 10 Marks]
