

M.A. 1st Semester Examination, 2024

PHILOSOPHY

PAPER – PHI-102(A+B)

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

Illustrate the answers wherever necessary

GROUP – A

Answer any two out of the following : 10 × 2

1. Answer any five out of the following : 2 × 5

(a) What is reductio-Ad-absurdum Method ?

- (b) Distinguish between multiply general propositions and singly general propositions with example.
 - (c) What is vacuous quantification ?
 - (d) Write down two general conventions governing the expressions of Φ_{μ} and ψ_{ν} .
 - (e) In what sense can a propositional function be followed validly from propositional functions ?
 - (f) What is truth tree ?
 - (g) "All contradictory statements are equal"
—Prove the statement.
2. Symbolize (any *five*) of the following using the suggested notations : 2 × 5
- (a) If any husband is unsuccessful, then if some wives are ambitious he will be unhappy. (Hx : x is a husband, Sx : x is successful, Wx : x is a wife, Ax : x is ambitious)

- (b) If all ripe bananas are yellow, some yellow things are ripe. (Rx : x is ripe, Bx : x is banana, Yx : x is yellow)
- (c) If some officers are present, then if all officers present are captains, then some captains are present. (Ox : x is an officer, Px : x is present, Cx : x is captain)
- (d) If any survivors are women, then if all women are fortunate, they are fortunate. (Sx : x is a survivor, Wx : x is a woman, Fx : x is fortunate)
- (e) If any employees are lazy and some positions have no future, then some employees will not be successful. (Ex : x is an employee, Lx : x is lazy, Px : x is a position, Fx : x has a future, Sx : x will be successful)

(f) If somethings 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 is unhappy)

3. Prove the validity of the following :

(a) $(x) (\exists y) (Ex \vee Fy) / \therefore (x) Ex \vee (\exists y) Fy$ 3

(b) Any car with good brakes is safe to drive and safe to ride in. So, if a car is new, then if all new cars have good brakes it is safe to drive. (Cx : x is a car, Bx : x has good brakes, Dx : x is safe to drive, Rx : x is safe to ride in, Nx : x is new) 4

(c) $(\exists x)Gx \vee (y) (Gy \supset Hy)$
 $(x) (Ix \supset \sim Gx) / \therefore (x) (Gx \supset Ix) \supset$
 $(y)(Gy \supset Hy)$ 3

4. (a) What is Deduction trees ?

(5)

(b) (i) Prove the following in truth trees

Min is home or on board

Hen is home or on board

They are not both on board

Min is home or Hen is

(ii) $A \vee B$

$C \vee D$

C

2 + (4 + 4)

GROUP-B

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

5. (a) What is invalidity ? 1 + 4

(b) Prove the invalidity of the following :

$(x)(y)(Hx \supset Iy)$

$(y)(Iy \supset Jz) \therefore (x) Hx \supset (z) Jz$ 5

6. Identify and explain all of the mistakes in the following erroneous proof. 5

1. $(\exists x)(y) [(Fx. Gx) \supset Hy] /$
 $(\exists x)[(Fx. Gx) \supset Hx]$

→ 2. $(y) [(Fz. Gz) \supset Hy]$

3. $(Fz. Gz) \supset Hy$ --- 2, UI

4. $(\exists x) [Fx. Gz) \supset Hy]$ - 3, EG

5. $(y)(\exists x) [Fx. Gy) \supset Hy]$ 4, -UG

6. $(y)(\exists x) [Fx. Gy) \supset Hy]$ 1, 2-SEI

7. $(\exists x) [Fx. Gx) \supset Hx]$ 6. UI

7. What is CP ? Explain the strengthen rule of CP. 1 + 4

8. Explain the rule of EI. 5

9. Prove the following :

5

$$(x) (Dx \supset Cx) \supset (y)[(Ny \cdot Ty) \supset Sy]$$

$$(\exists x) (Dx \cdot Cx) \supset (y)[(Dy \supset (Cy \cdot Uy))]$$

$$(x) (Gx \supset Dx)$$

$$(x) (Ax \supset Nx) / \therefore (x)\{(Tx \cdot Ax) \supset$$

$$(\exists y)(Gy \cdot Cy) \supset Sx\}$$

10. Answer the following :

2 + 2 + 1

(a) When is an universal quantification true ?

(b) $Lc / \therefore (x) Lx$ — is it valid ? Give reason.

(c) What is asserted by existential quantification ?

[Internal Assessment — 10 Marks]

