2011

M.A.

1st Semester Examination

PHILOSOPHY

PAPER — PHI-103

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Western Logic

Answer any *two* questions from Group—A and *one* question from Group—B.

Group—A

1. Symbolize each of the following proposition. In each case use the suggested notations (any *eight*) : 2×8

   (i) If something is missing, then if nobody calls the police, it will not be recovered.

   (Mx : x is missing. Px: x is a person.
   Cx : x calls the police. Rx : x will be recovered.)

(ii) If something is wrong with the house, then everyone in the house complains.

(Wx : x is wrong. Px : x is a person. Cx : x complains.)

(iii) If there are any survivors and only women are survivors, then they are women.

(Sx : x is survivors. Wx : x is woman.)

(iv) 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.
Ux : x is unhappy.)

(v) If every position has a future and no employees are lazy, then some employees will be successful.

(Px : x is a position. Sx : x is successful.
Fx : x has a future. Ex : x is an employee.
Lx : x is lazy.)

(vi) If all survivors are fortunate and only women were survivors, then if there are any survivors, then some women are fortunate.

(Sx : x is a survivor. Fx : x is a fortunate.
Wx : x is an woman.)

(vii) If any bananas are yellow, then if all yellow bananas are ripe, they are ripe.

(Bx : x is a banana. Yx : x is yellow. Rx : x is ripe.)

(viii) If every traveller is conscious and if no students are interested for travelling then some students are not conscious.

(Tx : x is a traveller. Cx : x is conscious.
Sx : x is a student. Ix : x is interested for travelling.)

2. Construct a formal proof of validity for each of the following arguments : 4×4

(i) If something is lost, then if everyone values his possessions, it will be missed. If anyone values his possessions, so does everyone. Therefore, if something is lost, then if someone values his possessions, then something will be missed.

(Lx : x is lost. Px : x is a person.
Vx : x values his possession. Mx : x is missed.)

(ii) No sane witness would lie if his lying would implicate him is a crime. Therefore, if any witness implicated himself in a crime, then if all witness were sane, that witness did not lie.

(Sx : x is sane. Wx : x is a witness. Lx : x lies.
Ix : x implicates himself in a crime.)

(iii) $(x)\ (\exists y)\ (Gx.Hy)\ \therefore\ (x)\ Gx\ .\ (\exists y)\ Hy$

(iv) $(\exists x)\ Jx \vee (\exists y)\ Ky$

$(x)\ (Jx \supset Kx)\ /\ \therefore\ (\exists y)\ Ky$

3. Prove the invalidity of the following arguments : 4×4

(i) (x) (Kx ⊃ Lx)

(∃x) (∃y) (Lx . My) /∴ (y) (Ky ⊃ My)

(ii) (∃x) (∃y) (yx ⊃ Zy)

(∃y) (Z) (Zy ⊃ Az) /∴ (∃y) yx ⊃ (Z) AZ

(iii) (x) (∃y) (Ex ⊃ Fy)

(∃y) (Z) (Fy ⊃ ~ GZ)/∴ (x) (Z) (~ Ex ⊃ GZ)

(iv) (x) (y) (Bx ⊃ Cy)

(x) Cx ⊃ [(∃y) (Dy. Ey). (∃Z) (DZ . ~ EZ)]

/∴ (x) (Bx ⊃ Dx)

4. Construct demonstrations for each of the following : 4×4

(i) (x) Fx ≡ ~ (∃x) ~ Fx

(ii) [(x) Fx . (x) Gx] ≡ (x) (Fx . Gx)

(iii) [(x) Fx ∨ (x) Gx] ⊃ (x) (Fx ∨ Gx)

(iv) (∃y) [(∃x) Fx ⊃ Fy]

Group—B

Answer any *one* of the questions.

5. Explain the illustration of the final version of Existential Instantiation. 8

6. (a) Make differences between proposition and propositional function.

(b) Explain, after Copi, the two general conventions governing the expressions $\phi\mu$ and $\phi\nu$ in the statements of all the four quantification rules. 4+4

7. Identify and explain the mistakes in the following erroneous 'proofs' : 4+4

(i) 1. $(\exists x)\ Fx$

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

→ 3. Fy

→ 4. Gy

5. $Fy.Gy$ — 3, 4. Conj

6. $(\exists x)\ (Fx.Gx)$ — 5. EG.

7. $(\exists x)\ (Fx.Gx)$ — 2, 4 - 6 EI.

8. $(\exists x)\ (Fx.Gx)$ — 1, 3 - 7 EI.

(ii) 1. $(x)\ (\exists y)\ (Fx \supset Gy)$

2. $(\exists y)\ (Fx \supset Gy)$

→ 3. $Fx \supset Gx$

4. $(x)\ (Fx \supset Gx)$

5. $(\exists y)\ (x)\ (Fx \supset Gy)$ 4.EG

6. $(\exists y)\ (x)\ (Fx \supset Gy)$ — 2, 3 – 5 EI.