2013

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.

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

Group—A

1. Symbolize each of the following propositions. In each case use the suggested notation. 2×8

(i) If something is missing, then if nobody calls the police some one will be unhappy.

(Mx : x is missing Px : x is a person, Cx : x calls the police. Ux : x will be unhappy.)

(ii) If something is damaged, but nobody is blamed, the tenant will not be charged for it.

(Dx : x is damaged, Px : x is a person, Bx : x is blamed, Cx : x will be charged to the tenant.)

(Turn Over)

(iii) 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.)

(iv) If some officers are present, then if all officers present are captains, then some captains are present.

(Ox : x is an oficer, Px : x is present, Cx: x is a captain.)

(v) 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, Sx : x will be successful.)

(vi) If all servivors 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 fortunate, Wx : x is a woman.)

(vii) 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 will be unhappy.)

(viii) If all ripe bananas are yellow, some yellow things are ripe.

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

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

(i) $(\exists x)Ux \supset (y)\left[(Uy \vee Vy) \supset Wy\right]$

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

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

(iii) If any jewelery is missing, then if all the servants are honest, it will be returned. If any servat is honest, they all are. So if any jewelery is missing, then if at least one servant is honest, it will be retured.

(Jx : x is jewelery, Mx : x is missing, Sx : x is a servant, Hx : x is honest, Rx : x will be returned.)

(iv) If they are any geniuses, then all great composers are geniuses. If anyone is temperamental, all geniuses are temperamental. Therefore it any one 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 temperemental.)

3. Prove the invalidity of the following arguments. 4+4

(i) $(x)Nx \supset (\exists y)Oy$

$(y)Oy \supset (\exists z)Pz / \therefore (\exists x)Nx \supset (z)Pz$

(ii) $(x)(\exists y)(Ex \supset Fy)$

$(\exists y)(z)(Fy \supset \sim Gz) / \therefore (x)(z)(\sim Ex \supset Gz)$

(iii) $(x)(Kx \supset Lx)$

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

(iv) $(\exists x)(\exists y)(yx \supset zy)$

$(\exists y)(z)(zy \supset Az) / \therefore (\exists x)yx \supset (z)Az$

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

(i) $(\exists y)[(\exists x)Fx \supset Fy]$

(ii) $(x)(Fx \vee Q) \equiv [(x)Fx \vee Q]$

(iii) $(\exists x)(Fx \cdot Gx) \supset [(\exists x)Fx \cdot (\exists x)Gx]$

(iv) $(x)(Q \supset Fx) \equiv [Q \supset (x)Fx]$

Group—B

5. Explain with example the final version of Existential Instantiation on. (EI) 8

6. Explain the following : 2×4

(i) Vacuous quantification.

(ii) Two definite conventions governing the expression '$\phi\mu$' and '$\phi\nu$'.

(iii) The different ways of getting propositions from propositional functions.

(iv) Muliply-general proposition and singly general proposition.

7. Identify and explain the mistakes in the following erroneous "proofs". 4×2

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

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

→ 3. $Fx \cdot Gy$

4. Fx — 3, simp.

5. .Fx — 1, 3 – 4 EI.

→ 6. $\sim Fx \cdot Gx$

7. $\sim Fx$ — 6, simp.

8. $\sim Fx$ 2, 6–7 EI.

9. $Fx . \sim Fx$ — 5, 8, conj.

10. $(\exists x)(Fx \cdot \sim Fx)$ – 9, EG.

(ii) 1. $(y)(\exists x)(Fx \vee Gy) / \therefore (\exists x)(y)(Fx \vee Gy)$

2. $(\exists x)(Fx \vee Gy)$ — 1, ul.

→ 3. $Fx \vee Gx$

4. $(y)(Fx \vee Gy)$ — 3, UG

5. $(\exists x)(y)(Fx \vee Gy)$ — u. EG.

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