2009

M.A.

1st Semester Examination

PHILOSOPHY

PAPER — PHI-1103

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 any officer is present, then either no majors are present or he is a major.

(Ox: x is an officer. Px: x is present. Mx is a major.)

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

(Sx : x is a surviver. Wx : x is a woman.)

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

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

(iv) Dead men tell no tales.

(Dx : x is dead. Mx : x is man. Txy : x tells y)

(v) Any good amateur can beat some professional.

(Gx : x is a good amateur. Px : x is a professional. Bxy : x can beat y)

(vi) 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.)

(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 something is wrong, then it should be rectified.

(Wx : x is wrong. Rx : x should be rectified.)

(ix) Plato and Aristotle are greeks and philosophers.

(Gx : x is greek. Px : x is philosopher.)

(x) Sita is a graceful dancer.

2. Construct a formal proof of validity for any *four* of the following. 4×4

(i) 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.)

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

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

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

(iii) $(x)\{Lx \supset [(y)\ (Py \supset Vy) \supset Mx]\}$

$(\exists x)\ (Px \cdot Vx) \supset (y)\ (Py \supset Vy)$/

$\therefore\ (\exists x)\ Lx \supset [(\exists y)\ (Py \cdot Vy) \supset (\exists z)Mz]$

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

$(x)\ (Jx \supset Kx)$ /

$\therefore\ (\exists y)Ky$

(v) $(\exists x)\ Xx \supset (y)\ (Yy \supset 2y)$/

$\therefore\ (\exists x)\ (Xx \cdot Yx) \supset (\exists y)(Xy \cdot Zy)$

3. Prove the invalidity of any *four* of the following arguments. 4×4

(i) $(x)\,(\exists y)\,(Hx \supset Iy)$

$(\exists y)\,(z)\,(Iy \supset Jz)\ /\therefore\ (x)\,Hz \supset (z)\,Jz$

(ii) $(x)\,Qx \supset [(\exists y)\,Ry \cdot (\exists y)\,Sy]$

$(\exists y)\,(Ry \cdot Sy) \supset (z)\,Tz\ /$

$\therefore\ (x)\,Q\,x \supset (\exists z)\,Tz$

(iii) $(x)\,(y)\,(Bx \supset Cy)$

$(x)\,Cx \supset [(\exists y)(Dy \cdot Ey) \cdot (\exists z)\,(Dz \,.\, \sim Ez)]/$

$\therefore\ (x)\,(Bx \supset Dx)$

(iv) $(x)\,(y)\,[Ax \supset (By \vee Cy)]$

$(z)\,\{[(y)\,By \vee (y)\,Cy] \supset Dz\}/$

$\therefore\ (\exists x)\,(\exists y)\,(Ax \supset Dz)$

(v) $(x)\,(\exists y)\,(Hx \equiv Gy)\ /$

$\therefore\ (\exists y)\,(x)\,(Hx \equiv Gy)$

4. Construct demonstrations for any *four* of the following. 4×4

(i) $(x)\,(Q \supset Fx) \equiv [Q \supset (x)\,Fx]$

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

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

(iv) $[(\exists x)\,Fx \supset (\exists y)\,Gy] \equiv (x)\,(\exists y)\,(Fx \supset Gy)$

(v) $(\exists x)\,(Fx \supset Q) \equiv [(x)\,Fx \supset Q]$

Group—B

Answer any *one* of the questions.

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

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

2. $(\exists x)(Fx \vee Gy)$ — 1·UI.

3. $Fx \vee Gx$.

4. $(y)(Fx \vee Gy)$ — 3·UG.

5. $(\exists x)(y)(Fx \vee Gy)$ — 4·EG.

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

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

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

3. Fy

4. Gy

5. $Fx \cdot Gy$ – 3, 4, conj

6. $(\exists x)(Fx \cdot Gx)$ – 5, EG.

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

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

6. Explain with illustrations the rule of Universal Generalization according to copi. 8

7. Explain after copi the following notions (any *four*) : 4×2

(i) Multiply General propositions and singly General propositions;

(ii) Individual variable and individual constant ;

(iii) Propositions and propositional functions ;

(iv) Revised and more general definition of formal proof of validity ;

(v) Bound variable and free variable.

———