M.A. 1st Semester Examination, 2012

PHILOSOPHY

COURSE NO. – PHI-103

Full Marks : 40

Time : 2 hours

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

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

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

(*a*) 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* : *x* is a major.)

(Turn Over)

(*b*) 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)

(*c*) If any technician is absent-minded, then if some germicides are contaminated, then he is a scoundrel. (*Tx* : *x* is a technician, *Ax* : *x* is absent-minded, *Gx* : *x* is a germicide, *Cx* : *x* is contaminated, *Sx* : *x* is a scoundrel.)

(*d*) If any husband is unsuccessful, then if all wives are ambitious, then some wives will be disappointed. (*Hx* : *x* is a husband, *Sx* : *x* is successful. *Wx* : *x* is wife, *Ax* : *x* is ambitious, *Dx* : *x* will be disappointed.

(*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 anything is damaged, some one will be blamed. (*Dx* : *x* is damaged, *Px* : *x* is a person, *Bx* : *x* will be blamed.)

(*g*) If every teacher is conservative and no student is intelligent then some student will fail in the examination. ($Tx : x$ is a teacher, $Cx : x$ is conservative, $Sx : x$ is a student, $Ix : x$ is intelligent, $Fx : x$ will fail in the examination.)

(*h*) If all officers present are either captains or majors, then either some captains are present or some majors are present. ($Ox : x$ is an officer, $Px : x$ is present, $Cx : x$ is a captain, $Mx : x$ is a major.)

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

(*i*) $(x)\{Ox \supset [(y)(Py \supset Qy) \supset Rx]\}$

$(x)\{Rx \supset [(y)(Py \supset Sy) \supset Tx]\}$

$/ \therefore (y)[Py \supset (Qy \cdot Sy)] \supset (x)(Ox \supset Tx)$

(*ii*) $(\exists x)\, Gx \vee (y)(Gy \supset Hy)$

$(x)(Ix \supset \sim Gx)$

$/ \therefore (x \cdot)(Gx \supset Ix) \supset (y)(Gy \supset Hy)$

(*iii*) Any businessman who is a poet must be a wealthy man. Wealthy men are all conservatives. If some conservative does not like poetry, then no poets are conservatives. Therefore, if there is a wealthy man who does not like poetry, then no businessmen are poets. (Bx : x is a businessman, Px : x is a poet, Wx : x is a wealthy man, Cx : x is conservative, Lx : x likes poetry).

(*iv*) 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.)

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

(*i*) $(x)(\exists y)(Fx \equiv Gy) \; / \therefore (\exists y)(x)(Fx \equiv Gy)$

(*ii*) $(x)(y)[Ax \supset (By \vee Cy)]$

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

(*iii*) $(x)\, Nx \supset (\exists y)\, Oy$

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

(*iv*) $(\exists x)\ (Xx \cdot Yx)$

$(x)\ (Xx \supset Zx)$

$(\exists x) \cdot (Zx \cdot \sim Xx) \; / \therefore \exists x\, (Zx \cdot \sim Yx)$

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

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

(*ii*) $(\exists x)(Fx \supset Q) \equiv [(x)Fx \supset Q]$

(*iii*) $[(\exists x)Fx \supset (\exists y)Gy] \equiv (x)(\exists y)(Fx \supset Gy)$

(*iv*) $(x)(\exists y)(Fx \vee Gy) \equiv (\exists y)(x)(Fx \vee Gy)$

GROUP – B

Answer any *one* of the following questions : 8 × 1

5. Answer the following questions :

(*a*) In what sense can a propositional function be said to follow validly from a proposition ? 2

(*b*) What is the more general definition of formal proof of validity ? 2

(*c*) What method do we follow at the time of considering invalidity of an argument involving quantifier ? 4

6. State, explain and illustrate the final version of Universal Generalization. 8

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

(i) 1. $(x)(\exists y)(Fx \equiv \sim Fy)$ / $\therefore (\exists x)(Fx \equiv \sim Fx)$

2. $(\exists y)(Fx \equiv \sim Fy)$ .... 1. UI

→3. $Fx \equiv \sim Fx$

4. $(\exists x)(Fx \equiv \sim Fx)$ .... 3. EG

5. $(\exists x)(Fx \equiv \sim Fx)$ .... 2, 3 – 4 EI.

(ii) 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.