2018

M.A.

1st Semester Examination

PHILOSOPHY

PAPER—PHI-102

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)

Unit–I

Group-A

Answer any *one* question.

1. (a) Symbolize the following prepositions using quantifiers, variables etc. 4×2

   (i) If anything is damaged, someone will be blamed. (Dx : x is damaged ; Px : x is a person ; Bx : x will be blamed)

   (ii) If any bananas are yellow, they are ripe. (Bx : x is a banana ; Yx : x is yellow; Rx : x is ripe).

   (iii) If any office 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).

(iv) If there are any survivors and only women are survivors, then they are women.
(Sx : x is Survivor; Wx : x is a Woman)

(b) Explain the final version of EI. (2+2+2+2)+8

2. (a) Construct formal proof of validity for the following.

(i) $(x)\ (Qx \supset Rx)$

$(x)\ (Sx \supset TX)\ /\ \therefore\ (x)\ (Rx \supset Sx) \supset (y)\ (Qy \supset Ty)$

(ii) $(x)\ (Nx \supset Ox)\ /\ \therefore\ (x)\ \{Px \supset [(y)(Py \supset Ny) \supset OX\}$

(b) Prove the invalidity of the following : (4+4)+(4+4)

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

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

(ii) $(x)\ (\exists x)(Fx \equiv Gy)\ /\ \therefore\ (\exists y)\ (x)\ (Fx \equiv Gy)$

Group-B

Answer any *one* question.

3. Demonstrate the following to prove logical truth.

$(x)Fx \supset \sim (\exists x) \sim Fx$ 4

4. Identify and explain the mistake(s) of the following

1. $(\exists x)\ Fx$
2. $(\exists x)\ Gx\ /\ \therefore\ (\exists x)(Fx \cdot Gx)$
3. Fy
4. Gy
5. $Fy \cdot Gy$ — 3, 4, cosj
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*

4+4

Unit–II

Group-A

Answer any *one* question.

5. (a) Show that every set is a subset of itself.

(b) Why it is said that identity, membership and inclusion are distinct and different notions ? Explain with example.

(c) Determine the truth/falsity of the following for all set A, B, C. 4+4+(2+2+2+2)

(i) If $A = B$ and $B = C$, then $A = C$

(ii) If $A \in B$ and $B \in C$, then $A \in C$

(iii) If $A \in B$ and $B \subset C$, then $A \subset C$.

(iv) If $A \subset B$ and $B \subseteq C$, then $A \subset C$

6. (a) What is wrong with the following argument ?

Socrates is a man. Men are numerous. Therefore, Socretes is numerous.

(b) Show that the empty set is a subset of every set.

(c) Find the following

1. $\{\Omega\} \cap \{\Omega\}$
2. $\{\Omega, \{\Omega\}\} \sim \Omega$
3. $\{\Omega, \{\Omega\}\} \sim \{\Omega\}$
4. $\{\Omega, \{\Omega\}\} \sim \{\{\Omega\}\}$

(d) Translate the following statement into symbolic form.

(i) No Frenchmen is an American

(ii) Some Frenchmen are either Philosophers or Murderers. 4+4+4(2+2)

Group-B

Answer any *one* question.

7. Answer the following :

(a) What do you mean by the domain of individuals.

(b) When are two sets called mutually exclusive ? 2+2

8. Explain the following notions.

(a) Intersection of sets.

(b) Union of sets. 2+2

———