

2021/TDC/EVEN/SEM/PHIP-601/085

TDC Even Semester Exam., 2021

PHILOSOPHY

(Pass)

(6th Semester)

Course No. : PHIP-601

(Logic—II)

Full Marks : 50

Pass Marks : 17

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one** from
each Unit

UNIT—I

1. (a) What is symbolic logic? What is variable?
What is constant?

2+1+1=4

(b) Discuss the utility of symbols in logic.

6

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(Turn Over)

2. (a) What is truth-function? How many basic truth-functions are there in symbolic logic? Name them. $2+1+2=5$
- (b) Explain and construct truth-tables for the following : 5
- (i) Conjunctive function
- (ii) Implicative function

UNIT—II

3. (a) What is truth-table? What do you understand by a contradictory statement-form? $2+2=4$
- (b) Use truth-tables to characterise the following statement-forms as tautologous, contingent or contradictory : $2 \times 3 = 6$
- (i) $p \supset (p \cdot q)$
- (ii) $[(p \supset q) \cdot p] \supset q$
- (iii) $(p \supset q) \cdot (p \cdot q)$
4. (a) What is decision procedure? 2
- (b) Use truth-table to determine the validity or invalidity of the following arguments : $4+4=8$
- (i) $(A \supset \sim B) \supset (B \vee \sim A)$
 $\sim(B \vee \sim A)$
 $\therefore \sim(A \supset \sim B)$

(3)

- (ii) If Antony achieves stability, then both Basana and Chitra will adopt more liberal policies. But Basana will not adopt a more liberal policy. Therefore, Antony will not achieve stability.

UNIT—III

5. (a) How many rules of replacement are there?

State the rule of commutation.

1+1=2

- (b) Construct formal proof of validity of the following :

4+4=8

(i) $A \supset B$

$C \supset \sim B / \therefore A \supset \sim C$

(ii) $T \cdot (U \vee V)$

$T \supset [U \supset (W \cdot X)]$

$(T \cdot V) \supset \sim (W \vee X) / \therefore W \equiv X$

6. (a) State the rules of transposition and exportation.

2

- (b) Construct formal proof of validity of the following :

4+4=8

(i) $(W \cdot X) \supset (Y \cdot Z)$

$\sim [(W \cdot X) \cdot (Y \cdot Z)] / \therefore \sim (W \cdot X)$

(ii) $(H \vee I) \supset [J \cdot (K \cdot L)]$

$I / \therefore J \cdot K$

(4)

UNIT—IV

7. (a) What do you mean by experimental methods? How many experimental methods are there? Name them. $2+1+2=5$
- (b) Explain and illustrate the Method of Difference. 5
8. (a) Explain elaborately, with examples, the Joint Method of Agreement and Difference. 7
- (b) What are the advantages of this method? 3

UNIT—V

9. (a) What is hypothesis? 3
- (b) Explain the conditions of a valid hypothesis. 7
10. (a) Explain the different stages of hypothesis. 4
- (b) Discuss the role of hypothesis in scientific enquiry. 6

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