K22U 1029

Reg. No. : .....

Name : .....

II Semester B.A. Degree (C.B.C.S.S. – Supplementary) Examination, April 2022
(2016-2018 Admissions)
COMPLEMENTARY COURSE IN PHILOSOPHY
2C02PHI : Symbolic Logic and Foundations of Computer Application

Time : 3 Hours Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries **1** mark.

Fill in the blanks.

1. Gentle words for harsh realities are termed _____
2. According to the principle of non-contradiction, no statement can be _____
3. A _____ disjunction states that at least one of the disjuncts is true and that at least one of the disjuncts is false.
4. The _____ gate is often called an inverter. **(4×1=4)**

PART – B

Write short notes on **any seven** of the following. Answer should **not** exceed **50** words **each**. **Each** question carries **2** marks.

5. The four truth functional connectives.
6. Biconditional.
7. Contingent statement forms.
8. Logical equivalence.
9. Conjunction.
10. Modus Ponens and its truth table.
11. Symbolic expressions of De Morgan's theorems.
12. Argument form and truth table for K V L, ~K, ∴ L.
13. The truth table for XOR gate.
14. Binary operation in digital computers. **(7×2=14)**

P.T.O.

PART – C

Answer **any four** of the following. Answer should **not** exceed **100** words **each**. **Each** question carries **3** marks.

15. How does symbolization improve logic ?
16. Bring out the differences between simple and compound statements. Give examples.
17. Write a note on the three laws of thought.
18. Bring out the principle of double negation and show the relationship means of truth table.
19. Identify the following argument form and show its validity/invalidity by means of truth table :

    $p \supset q$
    $\sim q$
    $\therefore \sim p$

20. How is Boolean algebra between A and B symbolized in OR gate ? Present the truth table. **(4×3=12)**

PART – D

Answer **any two** questions. Answer should **not** exceed **250** words **each**. **Each** question carries **5** marks.

21. Explain the three basic functions of language.
22. Demonstrate the differences between tautology and contradiction by means of truth table method.
23. Given below is the input/output correlation in a logic gate. Identify the gate and prepare the truth table by substituting binary digits corresponding to On/Off positions. Present the MIL symbol also.

Input A	Input B	Output
Off	Off	Off
Off	On	Off
On	Off	Off
On	On	On

24. Elucidate the procedure of converting numbers between binary and decimal. Convert the binary 11010 into decimal by using powers of 2. **(2×5=10)**
