K16U 2038

**III Semester B.A. Degree (CBCSS – Reg./Supple./Imp.)
Examination, November 2016
(2014 Admn. Onwards)
CORE COURSE IN PHILOSOPHY
3B03 PHI : Symbolic Logic and Informatics**

Time : 3 Hours

Max. Marks : 40

PART – A

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

Fill in the blanks :

1. The truth table containing T and F in the first row and F and T in the second row indicates the truth function _____.

2. The 'v' connective is called the _____.

3. If 'p' is true and 'q' is false, p ⊃ q is _____.

4. 'p • q // Therefore, p.' This rule of inference is called _____.   **(4×1=4 Marks)**

PART – B

Answer **any seven** questions. **Each** answer should **not** exceed **50** words. **Each** answer carries **2** marks.

5. Write a short note on the constants used in symbolic logic.

6. Symbolize the following by using the letters given in brackets :

   a) Apples are red, or berries are blue. (A, B)

   b) If you cut the red wire, then the bomb will explode. (R, B)

   c) You will have neither soup nor ice cream. (S, I)

   d) It is not the case that all humans are rational. (R)

7. Construct the truth table for 'If p then q'.

P.T.O.

8. What is the method of determining the number of rows in a truth table ? Give an example.

9. Determine the validity of the following :

   a) All A are B, All C are B, Therefore, All A are C.

   b) Either P or Q, It is not the case that P, Therefore, Q.

10. Test the validity of the following by truth table method :

    a) $p \lor q$

       $\sim p$

       $\therefore q$

    b) $p \supset q$

       p

       $\therefore q$

11. Define 'formal proof of validity'.

12. Define 'tautology' and present its truth table.

13. Present the symbolic form of Disjunctive syllogism and Absorption.

14. Write a short note on the use of internet as a knowledge repository. **(7×2=14 Marks)**

PART – C

Answer **any four** questions. **Each** answer should **not** exceed **100** words. **Each** answer carries **3** marks.

15. Distinguish between simple and compound statements.

16. Define a truth functionally compound statement with a note on implicative function.

17. Explain conjunctive and disjunctive truth function with the aid of truth table.

18. Determine the validity of the following by truth table method : $(p \cdot q) // \therefore \sim p$

19. Construct the formal proof of validity for the following :

    a) $p \supset q / q \supset s / p // \therefore s$

    b) $p // \therefore p \lor q$

20. Analyze the etymological meaning of informatics with note on its impact on modern life. **(4×3=12 Marks)**

PART – D

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

21. Bring out the main differences between traditional and symbolic logic. Add a note on the advantages of using symbols in logic.

22. Bring out the notion of logical equivalence and construct the truth table for the double negation biconditional. Also, state the combined formulation of De Morgan's theorem.

23. Define 'truth function'. Given 'p' as true and 'q' as false, find out the truth value of the following statements :

    a) $\sim (p \cdot q) \lor (p \lor q)$

    b) $\sim (p \lor \sim q) \lor (q . \sim q)$

    c) $(p \supset q) \lor p$

    d) $\sim p \equiv (p \supset p)$

24. Write notes on **any two** of the following :

    a) Material equivalence

    b) Argument form

    c) Internet as cyberspace. **(2×5=10 Marks)**

_____