K20U 1896

Reg. No. : .....

Name : .....

III Semester B.A. Degree CBCSS (OBE) – Regular Examination, November 2020
(2019 Admission Only)
CORE COURSE IN PHILOSOPHY
3B03 PHI – Symbolic Logic and Informatics

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions. **Each** answer carries **1** mark :

1. Draw the truth table for negation.
2. Write a short note on Compound Statement.
3. Define Bi-conditional statements.
4. Write the rules of inference for Modus Ponens.
5. Write a short note on Contradictory statements.
6. Define Data. **(6×1=6)**

PART – B
(Short Essay)

Answer **any 6** questions. **Each** answer carries **2** marks :

7. What is implication ? Explain with the help of a truth table.
8. Distinguish between symbolic logic and traditional logic.
9. State the difference between Tautology and Contingent statements.
10. Symbolize the following argument using given symbols.
    All aviators are brave
    · Jones is brave
    ∴ Jones is an aviator (A, B)

P.T.O.

11. Explain the principle of Double Negation.

12. Construct the formal proof of validity for the given argument :

    $[\sim(J \cdot k) \supset \sim L] \cdot (M \supset \sim N)$

    $\sim(J \cdot K) \vee M$

    $\therefore \sim L \vee \sim N$

13. Using truth table determine whether the following statement is tautology Contradictory or Contingent.

    $(P \cdot q) \supset P$

14. If A and B are true statements, X and Y are false statements, find out the truth value of the following statements :

    a) $A \vee [X \cdot (B \vee Y)]$

    b) $[(A \vee B) \cdot (X \vee A)]$ **(6×2=12)**

PART – C

(Essay)

Answer **any 4** questions. **Each** answer carries **3** marks.

15. What are the advantages of using symbols in logic ? Explain with examples.

16. Construct truth table for De-Morgan's Theorem.

17. Evaluate the following argument using truth table technique :

    $Y \vee (Z \cdot \sim Y)$

    Y

    $\therefore \sim (Z \cdot \sim Y)$

18. Give justification for the given formal proof of validity :

    a) 1. $A \supset B$

    2. $C \supset D$

    3. $\sim B \vee \sim D$

    4. $\sim \sim A$

    5. $(E \cdot F) \supset C / \therefore \sim (E \cdot F)$

    6. $(A \supset B) \cdot (C \cdot D)$

    7. $\sim A \vee \sim C$

    8. $\sim C$

    9. $\sim (E \cdot F)$

    b) 1. $(G \supset H) \supset (I \equiv J)$

    2. $K \vee \sim (L \supset M)$

    3. $(G \supset H) \vee \sim K$

    4. $N \supset (L \supset M)$

    5. $\sim (I \equiv J) / \therefore \sim N$

    6. $\sim (G \supset H)$

    7. $\sim K$

    8. $\sim (L \supset M)$

    9. $\sim N$

19. Write a note on Argument and Argument form.

20. Define what is formal proof of validity. **(4×3=12)**

PART – D

(Long Essay)

Answer **any 2** questions. **Each** answer carries **5** marks.

21. What are the advantages of symbolic logic over traditional logic ?

22. Explain different statement form by using truth tables.

23. Explain logical equivalence. What are the different types of logical equivalence ?

24. Construct the formal proof of validity for the given argument :

    $E \supset (F \cdot \sim G)$

    $(F \vee G) \supset H$

    E

    $\therefore H$ **(2×5=10)**

———————