



K17U 1918



Reg. No. :

Name :

**III Semester B.A. Degree (CBCSS – Reg./Supple./Imp.)
 Examination, November 2017
 (2014 Admn. Onwards)
 Core Course in Philosophy
 3B 03 PHI : SYMBOLIC LOGIC AND INFORMATICS**

Time : 3 Hours

Max. Marks : 40

PART – A

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

Fill in the blanks with the most appropriate answer chosen from the given options.

1. 'p.q' is a _____ statement.

a) Simple	b) Truth functional compound
c) Both a and b	d) Neither a nor b

2. In the truth table for disjunction, the conclusion is false only if

a) Both the disjuncts are false	b) Both the disjuncts are true
c) Either of the disjuncts is true	d) Either of the disjuncts is false

3. A statement form that has only true substitution instances is called

a) Contradiction	b) Material equivalence
c) Biconditional	d) Tautology

4. The following is/are true about Internet.

i) There is no chance for cyber addiction.	
ii) It is a global memory platform.	
iii) It is a network of networks.	
iv) It has only very limited academic use.	
a) Only ii	b) Both ii and iv
c) Both ii and iii	d) All these

(4x1=4)

P.T.O.



PART – B

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

5. Distinguish between simple and compound statements. Give examples.
6. Given that 'A' and 'B' are false
 - a) What is the truth value of ' $\sim A \vee B$ ' ?
 - b) What is the truth value of ' $A \cdot B$ ' ?
7. Identify the truth value of the following by using the symbols and their truth value given in brackets.
 - a) The car has a petrol engine or the car has a diesel engine (P – true, D – false)
 - b) If she is a techie, then she can explain what hardware is (T – false, H – false)
8. Define 'material equivalence' and present the truth table.
9. What is distinctive about two logically equivalent statements when compared to two materially equivalent statements ?
10. Which, according to De Morgan's theorem, is the disjunctive expression that is logically equivalent to $(p \supset q)$?
11. Using truth table method, determine the validity of the following argument :

$$\begin{array}{l} E \vee F \\ E \\ \therefore \sim F \end{array}$$
12. Prove the validity of Modus Tollens by truth table method.
13. Demonstrate the logical relation between 'p' and 'double negation p' by means of the truth table.
14. Who had coined the term 'informatik' ? Which are the basic terms that make the word 'informatics' ? (7×2=14)

PART – C

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

15. Describe the use of various symbols in modern logic.
16. Write a note on the function and parts of a conditional statement. Present the truth table.



17. Symbolize the following with the letters given in brackets and construct the truth tables for them :
 - a) Mary loves music if and only if it is a gazal. (L, G).
 - b) Either the Statue of Liberty is in America or it is not in America. (L).
 - c) If the novel is dull, then I shall not read it. (D, R).
18. Test the validity of the following by truth table method :
 - a) $A \supset B$
 $B \supset A$
 $\therefore A \vee B$
 - b) $A \vee B$
 A
 $\therefore B$
19. Describe the step-by-step procedure of constructing a truth table.
20. What is unique about the type of statements in a hypothetical syllogism as a valid argument form ? Present the specific form of this argument symbolically. (4×3=12)

PART – D

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

21. Bring out the differences between inclusive and exclusive disjunction. Give examples.
22. Using truth table method, determine whether the following statements are tautologous, contingent or contradictory :
 - a) $[A \supset (A \supset B)] \supset B$
 - b) $(A \cdot \sim B) \cdot B \vee B \sim A$
23. Summarize the uses of internet as cyberspace.
24. Construct a formal proof of validity for the following by using the appropriate elementary valid argument forms :
 - i) $A \supset B, A \cdot C / \therefore B$
 - ii) $M \vee N, \sim M, \therefore N \vee O$ (2×5=10)