



Reg. No. : .....

Name : .....

III Semester B.A. Degree (CBCSS – Reg./Sup./Imp.) Examination,  
November 2018  
(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 answer carries 1 mark.

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

1. In the truth table for conjunction, the conclusion is true only if \_\_\_\_\_
 

a) both the conjuncts are false	b) both the conjuncts are true
c) either of the conjuncts is true	d) either of the conjuncts is false
2. Double negation is an expression of \_\_\_\_\_
 

a) logical equivalence	b) truth functional compound statement
c) conjunction	d) contradiction
3. \_\_\_\_\_ is an elementary valid argument form.
 

a) Disjunctive syllogism	b) Absorption
c) Addition	d) All these
4. \_\_\_\_\_ is/are the characteristics of informatics.
 

i) Human-computer interaction is its core theme.	
ii) Its topic of study is limited to computers.	
iii) It is of no use to the common people.	
iv) It is an inevitable component of present-day medical science.	
a) Only (i)	b) Only (iii)
c) Both (i) and (iv)	d) Both (ii) and (iv)

(4x1=4)

P.T.O.



## 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 use of the constants in symbolic logic.
6. Symbolize the statement 'It is false that all humans are males' using the symbol 'M'. Identify the type of this statement.
7. Define 'conjunction' and present the truth table.
8. "A statement of the form  $A \equiv B$  is often called a biconditional". Explain.
9. Prove the validity of Modus Ponens by truth table method.
10. Analyse the statement  $(A \vee \sim B) \supset B$ . Given that the truth values under the main operator are in the order T, F, T, F. Identify whether the statement is tautologous, self-contradictory or contingent.
11. Construct a formal proof of validity for the following by using the appropriate elementary valid argument form :  
 $P \supset Q, (P \bullet Q) \supset R, \therefore P \supset R$
12. Present the truth tables for negation and implication.
13. Elucidate the etymological meaning of 'informatics'.
14. Distinguish between data and information. (7×2=14)

## PART – C

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

15. Distinguish between logical equivalence and material equivalence.
16. Symbolize the following with the letters given in brackets :  
 If summer continues, then there will be drought. If summer continues and drought persists, then there will be famine. Summer did not continue and drought did not persist. Therefore, there is no famine. (C, D, F)
17. Define argument form and substitution instance. Give examples.



18. Find out the expansion of the following abbreviations of elementary valid argument forms and state their symbolic form :
  - a) M.P.
  - b) Add.
  - c) D.S.
19. Symbolize the following with the letters given in brackets :
  - a) The play is not interesting and the dance is beautiful.
  - b) If the play is interesting, then the dance is beautiful.
  - c) The play is interesting if and only if the dance is beautiful.  
(I, B)
20. Describe the advantages of symbolic logic over traditional logic. (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 different meanings of implication. Give the symbolic form and truth table for implication.
22. Demonstrate the systematic procedure of constructing a truth table with an example for disjunction.
23. State De Morgan's theorems and present their symbolic formulae.
24. Describe the functions of internet as a physical infrastructure. (2×5=10)