



K20U 1240

Reg. No. : .....

Name : .....

**III Semester B.A. Degree (CBCSS – Sup./Imp.)**  
**Examination, November 2020**  
**(2014 – '18 Adms.)**  
**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 :

1. Truth/falsity is to propositions as \_\_\_\_\_ is to arguments.
2. A compound statement contains \_\_\_\_\_ statement/statements as components.
3. In the elementary valid argument form \_\_\_\_\_, denial of the consequent results in the denial of the antecedent.
4. 'If drought persists throughout the year, then there will be famine'. In this conditional statement, the antecedent-consequent relationship is \_\_\_\_\_. **(4×1=4)**

**PART – B**

Answer **any seven** questions.

Answers should **not** exceed **50 words each**.

**Each answer carries 2 marks.**

5. What do we achieve by using symbols in logic ?
6. Write a short note on inclusive disjunction and give an example.
7. Construct the truth table for the following by using the symbols 'p' and 'q' for the component statements :

If you cut the red wire, then the power supply will be cut.

P.T.O.



8. Define truth functional connective and symbolize the following using the letters given in brackets :  
Meera will apply for the job and she will either get it or miss it. (A, G, M)
9. Distinguish between Modus Ponens and Modus Tollens.
10. What is the specific condition for an argument form to be valid ? Present the symbolic expression of H. S. and D. S.
11. Test the validity of the following argument by means of truth table method :
- B C  
~ C  
~ B
12. Prove that 'p' and '~~p' are logically equivalent by means of truth table method.
13. Find out the specific form of the following and prove its validity/invalidity by truth table method :
- A B  
B C  
A ∨ B
14. Define the term 'informatics'. (7×2=14)

## PART – C

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

15. Distinguish between tautologous and contradictory statement forms and give examples.
16. Distinguish between material and logical equivalence.
17. Demonstrate the validity of the following by constructing the formal proof :
- a) A ∨ B  
~ A • ~ C  
B
- b) D E  
(D • E) F  
D F



18. Explain the notion of partial common meaning in the case of disjunction.
19. Symbolize the following argument using the letters given in brackets and prove its validity/invalidity by means of truth table for its specific form :  
If Nancy is your best friend, then Nancy is a music lover.  
Nancy is your best friend.  
Therefore, Nancy is a music lover.  
(F, M)
20. Discuss the role of internet in information explosion. (4×3=12)

## PART – D

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

21. Bring out the main differences between Aristotelian logic and modern logic.
22. Present the table of the following truth functional connectives showing their symbols, names of symbols, names of proposition type and examples for each one of them :  
And, Or, If .... then, If and only if.
23. State the two expressions of logical equivalence formulated in De Morgan's theorems. Present their symbolic forms also.
24. Describe the principle and procedure of truth table construction with reference to disjunction by showing the layout of T's and F's rows and also the premises/conclusion columns. (2×5=10)