

**B. A. DEGREE(C.B.C.S.S.)EXAMINATION,OCTOBER 2018**  
**(2016 Admission Regular & 2015 Admission Supplementary**  
**SEMESTER V - OPEN COURSE (ECONOMICS)**  
**EC5D02B – LOGIC AND REASONING APTITUDE**

Time: Three Hours

Maximum Marks: 80

**PART A****I. Answer all questions. Each question carries 1 mark.**

1. What is normative science?
2. Define "O" "Propositions?"
3. What is a fallacy?
4. Define negation
5. What is an argument?
6. What is a middle term?

**(6X1=6)****PART B****II. Answer any seven of the following. Each question carries 2 marks.**

7. How does an 'I' proposition distribute its terms?
8. Examine the scope of logic
9. Why logic is called science of reasoning?
10. In the following categorical propositions identify the quantifier, subject term, copula, and predicate term
  - a. Some airport screeners are officials who harass frail grandmothers.
  - b. No persons who live near airports are persons who appreciate the noise of jets..
11. Define contradictory propositions.
12. Draw Venn diagrams for the following propositions.
  - a. No life decisions are happenings based solely on logic.
  - b. All electric motors are machines that depend on magnetism.
13. Define the fallacy of undistributed middle with example
14. Determine the truth values of the following symbolized statements. Let A, B, and C be true and X, Y, and Z be false
  1.  $(A \cdot Y) \vee (\sim Z \cdot C)$
  2.  $\sim(X \vee \sim B) \cdot (\sim Y \vee A)$
15. Draw the truth table for disjunction
16. Define rule of conjunction according to truth tree method

**(7x2=14)****PART C****III. Answer any five of the following. Each question carries 6 marks**

17. Use the traditional square of opposition to find the answers to these problems. When a

statement is given as false, simply enter an “F” into the square of opposition and compute (if possible) the other truth values.

1. If “All fashion fads are products of commercial brainwashing” is true, what is the truth value of the following statements?
  - a. No fashion fads are products of commercial brainwashing.
  - b. Some fashion fads are products of commercial brainwashing.
  - c. Some fashion fads are not products of commercial brainwashing.
2. If “No sting operations are cases of entrapment” is false, what is the truth value of the following statements?
  - a. All sting operations are cases of entrapment.
  - b. Some sting operations are cases of entrapment.
  - c. Some sting operations are not cases of entrapment
18. Define contradictory and sub-altern propositions.
19. Use the rules of syllogism to determine whether the following standard-form syllogisms are valid
  1. Some nebulas are clouds of gas.  
 Some clouds of gas are objects invisible to the naked eye.  
 Therefore, some objects invisible to the naked eye are nebulas.
  2. No endangered species are creatures loved by the timber industry.  
 All spotted owls are endangered species.  
 Therefore, some spotted owls are not creatures loved by the timber industry.
20. What is hypothetical syllogism? State its rules.
21. Use indirect truth tables to determine whether the following arguments are valid or invalid:

$$\begin{array}{l}
 A \supset (B \vee C) \\
 C \supset (D \cdot E) \\
 \sim B \quad \quad \quad \therefore A \supset \sim E
 \end{array}$$

22. Define truth-table. Draw truth-table for any three logical connectives
23. Use the rules of inference to derive the conclusions of the following symbolized arguments:
  1.  $\sim B \supset [(A \supset K) \supset (B \vee \sim K)]$   
 $\sim J \supset K$   
 $A \supset J$   
 $\sim B$   $\therefore \sim A$
24. State the rules of inference

#### PART D

(5X6=30)

**IV. Answer any two of the following. Each question carries 15 marks.**

25. Define immediate inference. Explain square of opposition.
26. What is categorical syllogism? Briefly explain its rules and fallacies.
27. Use truth-table to determine the validity of the argument.

$$\begin{array}{l}
 (A \vee S) \supset C \\
 C \supset (A \cdot S) \quad \therefore (A \cdot S) \supset (A \vee S)
 \end{array}$$

28. Using Rules of Inference derive the conclusion of the following symbolised arguments:

1.  $A \supset B$   
 $A \vee (C \cdot D)$   
 $\sim B \cdot \sim E$                        $\therefore C$
2.  $W \supset X$   
 $(W \cdot X) \supset Y$   
 $(W \cdot Y) \supset Z$                        $\therefore W \supset Z$

**(2X15=30)**