

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR AWARD OF MASTER OF ARTS IN

PHIL 825: SYMBOLIC LOGIC

STREAMS:

TIME: 3 HOURS

DAY/DATE: TUESDAY 13 /07/ 2021

2.30 PM – 4.30 PM

INSTRUCTIONS:

Answer Question One and any other Two.

1. With examples, name and explain how any of the FIVE symbols are used in Symbolic.

i. $\Rightarrow / \rightarrow / \supset$

ii. $\Leftrightarrow / \equiv / \leftrightarrow$

iii. $\neg / - / !$

vi. $\wedge / \cdot / \dot{\wedge}$

v. $\vee / + / \vee$

vi. $\oplus / \underline{\vee}$

vii. $T / T / 1$

viii. $\exists !$

ix. $\dot{\wedge} / \equiv / \Leftrightarrow$

2. Translate **any four** of the following statements into the language of symbolic logic. Use the suggested abbreviations (capitalized words), if provided; otherwise, devise an abbreviation scheme of your own. **An example: ‘I am not hungry’ should be symbolized as ‘H’ using ‘H’ to stand for ‘I am hungry’.**

- i. KEEP trying, and the answer will APPEAR.
- ii. GIVE him an inch, and he will TAKE a mile.
- iii. Either I am CRAZY or I just SAW a flying saucer.
- iv. Either Jones is a FOOL or he is DISHONEST.
- v. JAY and KAY won't both be present at graduation
- vi. JAY will win, or KAY will win, but not both.
- vii. It is DINNER time, but I am not HUNGRY.
- viii. Although I am TIRED, I am not QUITTING
- ix. Jay and Kay are roommates, but they hate one another.
- x. Jay and Kay are Republicans, but they both hate Nixon.

[20 Marks]

3. Analyze **any four** of the following arguments and answer: Is the argument **factually correct, if the argument valid, if the argument sound**. Your answer may only contain three words for each argument.

All cats are mammals
All dogs are mammals
Therefore, all cats are dogs

All lizards are reptiles
No reptiles are warm-blooded
No lizards are warm-blooded

All dogs are reptiles
No reptiles are warm-blooded
Therefore, no dogs are warm-blooded

No cats are dogs
No dogs are cows
Therefore, no cats are cows

No cats are dogs
Some dogs are pets
Therefore, some pets are not cats

All dogs are reptiles
All reptiles are Martians
Therefore, all dogs are Martians

Some dogs are cats
All cats are felines
Therefore, some Republicans are flea-bags

All dogs are Republicans
Some Republicans are flea-bags
Therefore, some dogs are flea-bags

Some cats are pets
Some pets are dogs
Therefore, some cats are dogs

4. Using the suggested abbreviations (the capitalized words), translate **any four** of the following into the language of predicate logic.

- a) Every STUDENT who is CLEVER is AMBITIOUS.
 - b) Some CLEVER STUDENTS are AMBITIOUS
 - c) Some CLEVER STUDENTS are not AMBITIOUS
 - d) Some AMBITIOUS STUDENTS are not CLEVER
 - e) No AMBITIOUS STUDENT is CLEVER
 - f) No CLEVER STUDENT is AMBITIOUS
 - g) Every AMBITIOUS STUDENT is CLEVER
 - h) Every STUDENT is both CLEVER and AMBITIOUS
 - i) Every STUDENT is either CLEVER or not AMBITIOUS
 - j) Every STUDENT who is AMBITIOUS is CLEVER [20 Marks]
-