Scott Christian
UNIVERSITY
A Dynamic Centre of Academic Excellence

SCHOOL OF PROFESSIONAL STUDIES

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

UNIT CODE/NAME: DCT029: ELECTRONIC CONSTRUCTION

JAN – APRIL 2021/2022 **Time: 2 Hours**

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

QUESTION ONE

a. Define the following terms as used in electronics.
   i. Ammeter (2 marks)
   ii. Ampere (2 marks)
   iii. Battery (2 marks)
   iv. Capacitive time constant (2 marks)
   v. Power (2 marks)

b. Draw the equation that that relates power to the current, voltage, and resistance in a circuit. (10 marks)

c. A simple circuit consists of a 12-volt battery and a 6 Ω resistor. Draw a schematic diagram of the circuit, and include an ammeter which measures the current through the resistor, and a voltmeter which measures the voltage across the resistor, indicate the reading on the ammeter and voltmeter, and find the power dissipated in the resistor. (10 marks)

QUESTION TWO

a. With the aid of well-structured examples, discuss three rules for dealing with series circuits. (9 marks)

b. Explain the following terms as used in electronics.
   i. Alloy (3 marks)
   ii. Isotope (3 marks)

iii. Atomic mass (3 marks)

QUESTION THREE

a. With the aid of a well labelled diagram, explain a parallel circuit as used in electronics. (6 marks)

b. Three resistors of resistance 2 Ω, 3 Ω, and 12 Ω are connected in parallel to a battery of voltage 24 V.
Draw a schematic diagram of the circuit which includes an ammeter to measure only the current through the 2 Ω resistor, a voltmeter to measure the voltage across the 12 Ω□resistor, and find the total resistance in the circuit, along with the readings on the ammeter and voltmeter. (9 marks)

QUESTION FOUR

a. Explain three importance of electronics. (6 marks)
b. Define a capacitor as used in electronics. Indicate it's unit of measurement as well as its symbol
(5 marks)
c. Discuss how a transformer works. (4 marks)

QUESTION FIVE

a. With the aid of well-structured examples, discuss three rules for dealing with parallel circuits are as follows: (9 marks)
b. Outline the three basic parts of a capacitor. (6 marks)

ENDS