



# UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2017

COURSE NO: AE 203

COURSE NAME: BASIC ELECTRONICS

CLASS: AE II

TIME: 3 HRS

Name: \_\_\_\_\_ Index Number: \_\_\_\_\_

## ANSWER ALL QUESTIONS

- Mention TWO examples each of;
  - cables,
  - wires,
  - connectors,
  - resistors and
  - diodes
- A Varactor diode has a capacitance of 18.2 pF when the reverse bias voltage applied across it is 7.2 V. Determine the diode capacitance if the bias voltage is increased to 12.9 V.
- Calculate the resistance offered by a resistor with the colour codes: Green, Blue and Yellow. Determine also the tolerance and hence find the minimum and maximum values of the resistance.
- For the table given below, calculate the DC and AC resistances at each voltage level. NB: AC resistance at initial and final voltage levels should be ignored.

Voltage (V)	0.05	0.10	0.15	0.20	0.25	0.30
Current (mA)	0.2	0.4	0.6	4.0	30	200
DC Resistance						
AC Resistance						

- For the circuit given below, draw the waveforms realized at each section of the circuit.

