TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN:
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BSIT 14S – Y1 S1)

ICS 2200: ELECTRONICS

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2014
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) (i) Define capacitor. **(2 marks)**
(ii) Describe any FOUR types of inductors **(8 marks)**

b) Describe any TWO major groups of electronic circuits **(4 marks)**

c) Describe any THREE popular ways of connecting resistors together with the aid of a sketch.
(6 marks)

d) Explain any EIGHT important characteristics of PN junction diode **(4 marks)**

e) (i) Define operations Amplifiers **(2 marks)**

(ii) Describe any TWO major applications of operational amplifier **(4 marks)**

Question Two

Discuss the operation and application of summing operational amplifier with the aid of a sketch.

(20 marks)

Question Three

Distinguish between Depletion Mode MOSFET and Enhanced Mode Channel MOSFET with the aid of a sketch. Pay attention to the V-I characterist and symbols **(20 marks)**

Question Four

Given the following diagram:

24V

a) Calculate the current through R2 using either Thevenins theorem or Norton's Theorem **(14 marks)**

b) Justify your answer using Kirchhoff's Law of current and voltage **(6 marks)**

Question Five

a) Describe any FIVE types of diodes **(10 marks)**

b) Describe any TWO applications of diodes in power rectification with the aid of a sketch **(4 marks)**

c) Describe any THREE classes of transistor Amplifier Operation with the aid of a sketch. **(6 marks)**