UNIVERSITY OF GHANA

B.A/BSc. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY: FIRST SEMESTER UNIVERSITY EXAMINATIONS: 2016/2017

CSCD 101: INTRODUCTION TO COMPUTER SCIENCE I

CIST 103: INTRODUCTION TO COMPUTING

(3 CREDITS)

INSTRUCTION:

*ANSWER ALL QUESTIONS IN **SECTIONS A** AND **B***

TIME ALLOWED:

TWO AND HALF ($2^{1/2}$) HOURS

SECTION A

1. An example of an **output device** is

b. The keyboard,
c. The mouse,
d. The power cord,
e. The monitor.

2. What is a computer Network?

a. A group of computers that share the same power supply
b. A computer that can be used by different users simultaneously
c. Two or more computers connected together that can share data and programs
d. Any sets of computers manufactured by the same company

2. What is a **NIC**?

a. Network Interface Card
b. Network Interference Control
c. No Internet Connection
d. New Infrared Controller

2. Which binary number comes right after the binary number 101001?

a. 101002
b. 101011
c. 101010
d. 101100

2. How many bits is a kilobyte?

3. Which of the following electronic technologies is the key technology for making the first generation electronic computer?

a. Transistor
b. Integrated circuit
c. Vacuum tube
d. Dual Core CPU

2. Information is a set of data that have been shaped into a form that is.

a. meaningless and useless to human being
b. meaningful and useful to human being
c. meaningless and useless to information systems
d. meaningful and useful to information systems

2. Data is a stream of _____ representing events occurring in organization.

a. raw fact
b. meaningful information
c. information
d. numbers

2. Illustrate a brief history of Computers by using table T1 to fill in the first column of table T2.

T1

1940's	Moore's Law	1970's	1960's	Today	1920's

T2

	Engineers configured telephone switches to do simple calculations like adding two numbers.
	First computers; occupied entire rooms.
	Engineers could put multiple switches on a single chip. U.S. moon rocket program brought dramatically improved chips and decreased prices.
	Earlier room-sized computers could fit on one coin-sized computer chip.
	Earlier room-sized computers could fit on a pinhead-sized chip
	The trend of switch sizes halving about every two years.

2. A _____ is a data communication system spanning states, countries, or the whole world.

a. MAN
b. WAN
c. LAN

d. none of the above

2. A _____ is a data communication system within a building, plant, or campus, or between nearby buildings.

a. LAN
b. MAN
c. WAN
d. none of the above

2. _____ is a collection of many separate networks.

a. A WAN
b. An internet
c. A LAN
d. None of the above

2. From the truth table below, determine its Boolean algebraic expression.

Inputs			Output
A	B	C	X
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	0

a. X = A'B'C' + ABC + AB'C
b. X = ABC +ABC +ABC
c. X = AB'C + A'BC + ABC'
d. X = A'B'C + A'BC + ABC'

2. A small group of bits treated as a single unit can be referenced as

a. bits
b. binary characters
c. input characters
d. bytes

2. A megabytes of computer storage capacity consists of

a. one million
b. two million
c. three million
d. four million

2. Different characters that can be encoded is 2n where n is

a. number of bits for each character
b. number of bytes for each character
c. number of mega bytes
d. number of gigabytes

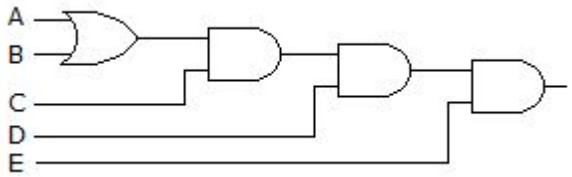
2. The method of representing numbers such as '0s' and '1s' is called

a. variable notation
b. primary notation
c. secondary notation
d. binary notation

2. Numbers that are written with base 16 are classified as

a. A. whole numbers
b. hexadecimal
c. C. exponential integers
d. mantissa

2. Derive the Boolean expression for the logic circuit shown below:



a. C(A+B) DE
b. [C(A+B)D+E]
c. [[C(A+B)D]E']
d. ABCDE

2. Draw the logic circuits for Boolean expression
AB+B.C.D

SECTION B:

Answer all questions in this Section

1. Write the flowchart and Pseudocode for the following questions **(25 marks)**

In a typical city, you are supposed to calculate and display the ages of one hundred citizens. You are also to print narrations below as per the category by accepting the current year and the users birth year.

Age (Years)	**Narrations**
1-20	Very Young
21-30	Young Adult
31- 50	Middle Age
51-70	Senior
70 and Above	Old Age

1. Solve the following: **[25 Marks]**

a. Describe 5 computing Careers (5 marks)
b. Give the main functions of a Computer System (5 marks)
c. Differentiate with examples Computer hardware and Computer software (5 marks)
d. List 5 main advantages in Computing (5 marks)
e. Differentiate between ROM and RAM (5 marks)

1. Convert the following to fill the Table. **[24 marks]**

DECIMAL	BINARY	OCTAL	HEXADECIMAL
33			
	1110101		
		703	
			1AF

DECIMAL	BINARY	OCTAL	HEXADECIMAL
29.8			
	101.1101		
		3.07	
			C.82