

MAKERERE UNIVERSITY
COLLEGE OF COMPUTING AND IS
SCHOOL OF COMPUTING AND IT
BSSE Group Only
Year I Semester I 2018/2019
CSC 1107 Structured Programming
Test Two

Date: 2nd November 2018

Instructions:

- Attempt all questions in this section.
- All university Examination Rules Apply in this test

On a building site, there are a number of activities. Each activity has a name(text), supervisor(text) and cost(whole number). A C program is required by the site manager to manage the site activities. When using this program, the manager should capture the activity's name, supervisor and the cost. The program should pass these values to a function(that returns nothing) earlier defined before the main() and this function prints these details on the screen. When the captured values have been displayed on the screen, the program should ask the user to enter letter 'Y' to continue and capture a new activity or any other letter to stop(Hint: a suitable loop should help you here).

[20 Marks]

END

SUCCESS DWELLS WHERE THE WILL OF GOD IS KNOWN AND DONE!!

COLLEGE OF COMPUTING & INFORMATION SCIENCES
SCHOOL OF COMPUTING & INFORMATICS TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE
CSC 1100: COMPUTER LITERACY
BSc.CS, BIT, BIS, BSSE & BJCE, YEAR I
TEST (1)

Date: Sunday 25th October, 2015

Time: 12:00 – 1:00 pm

INSTRUCTIONS:

- i. ATTEMPT ALL QUESTIONS.
- ii. ALL QUESTIONS CARRY EQUAL MARKS.
- iii. INDICATE NAMES & REGISTRATION NUMBER ON YOUR ANSWER SHEETS

Question 1):

- a) Define the term a "Computer System" [2 Marks]
- b) List and precisely explain the four major components that make up a computer system [2 Marks]
- c) Using appropriate examples, explain the following categories of software and their relevance to a computer system:
 - i. Application Software [2 Marks @] - type of software that instructs or computer to perform a specific task e.g Word, presentation
 - ii. System Software [2 Marks @] - program that controls the comp hardware & the comp runs rather than the user
- d) State two (2) standard procedures that are needed when managing computer systems within an organizational setting [2 Marks]

Question 2):

- a) Why is instruction pipelining necessary in CPU process execution? [1 Mark]
- b) State three main advantages of using a GUI interface in preference to a CLI [3 Marks]
- c) State two primary functions of any operating system within a computer. [2 Marks]
- d) Why is it always necessary to perform a daily backup of information or data files within an organizations' computing environment? [2 Marks]
- e) State two (2) advantages of using Linux as compared to Windows Operating Systems [2 Marks]

Question 3):

- a) Explain why the term internet is referred to as "a network of networks" [2 Marks]
- b) State the primary functions of the following computing devices within a network
 - i. Router
 - ii. Switch [1 Mark @]
- c) Briefly, explain the difference between the following terms as applied to the concept of internet computing, giving appropriate examples where necessary;
 - i. Web browser and Search engine
 - ii. URL and IP address [1 Mark @]
- d) State two (2) primary ways how you may safeguard a computer connected to internet from receiving junk mail filling up your inbox. [2 Marks]
- e) Why is it important to evaluate the authenticity and credibility of any information published on a particular website before usage? Give two reasons. [2 Marks]

Question 4):

- a) Computer systems can be classified depending on several factors related to price, hardware and compatibility with several software vendors. Briefly explain the following categories of computer classifications according to;
 - i. Size
 - ii. Technology
 - iii. Purpose, clearly giving an example in each case [1 Mark @]
- b) Convert the following memory measurements as provided below;
 - i. 102400000 KB into GB
 - ii. 204 TB into MB [2 Marks @]
- c) With the help of a suitable diagram, explain the services offered in a client-server environment as applied to the concept of computer networking. [2 Marks]
- d) State the significance of a control panel to a windows desktop computer system. [1 Mark]

*****END*****

Done

$$\begin{aligned}1 \text{ byte} &= 8 \text{ bits} \\1 \text{ Kb} &= 1024 \text{ b} \\1 \text{ MB} &= 1024 \text{ Kb} \\1 \text{ Gb} &= 1024 \text{ Mb} \\1 \text{ Tb} &= 1024 \text{ Gb} \\102400000 &\cancel{\text{KB}} \\&\underline{1024} \\1024 &\cancel{\text{G}} \quad \frac{52}{10} \quad 5.2 \\&\cancel{\text{T}} \quad 5.2 \quad 61.2 \\612 &\cancel{\text{G}} \quad \frac{612}{100} \quad 6.12 \\612 &\cancel{\text{T}} \quad 6.12\end{aligned}$$

MAKERERE UNIVERSITY
College of Computing and Information Sciences
School of Computing and Information Technology
End of Semester I Examination

Course code : BSE 1106
Course Name : Problem Solving and Programming Concepts
YEAR : I
Academic Year : 2018/2019
Date : 6th December 2018
Time : 8-11 AM

Instructions

1. Attempt all questions in section A
2. Attempt any three questions in section B

SECTION A

1. A Software Programmer has to decide on the language to use for coding a computer program.
 - a. Use appropriate examples to explain the structure of the following programming language paradigms. (4 Marks)
 - i. Functional Languages
 - ii. Procedural Languages
 - iii. Object Oriented Languages
 - iv. Declarative languages
 - b. For each of the programming paradigms above give two examples of programming language. (4 Marks)
2. The data the computer uses are of many different types. Computers must be told the *data type* of each variable or constant
 - a) What do you understand by the term *data-type*? (3 Marks)
 - b) Explain *Data Sets* as applied to Data type (2 Marks)
 - c) For each of the data types below, describe their datasets and give examples two of data for the specified *data-type* (3 Marks Each)
 - i. Integer
 - ii. String
 - iii. Character
 - iv. Real
 - v. Logical

SECTION B (Attempt any three questions)

3. Consider the code segment in the figure that follows

```
int fun1(int x, int y)
{
    if(x == 0)
        return y;
    else
        return fun1(x - 1, x + y);
}
```

a. What is the value of *fun1(5, 2)*. Show the working at each step (10 Marks)

b. Draw flow charts for each of the following programming constructs (2 Marks each)

- i. *If* statement
- ii. *If-else* statement
- iii. *for loop*
- iv. *while loop*
- v. *Do-while loop*.

4. It has been said that a computer operates on data to produce information.

a) Explain the meaning of each of the following and give an example of each. (2 Marks each)

- i. Unary operators
- ii. Binary operator
- iii. Ternary Operator

b) Arrange any four operators in the order of precedence (4 Marks)

c) Explain the steps/process involved in transforming a Java program into a format that is ready for use in a computer. (10 Marks)

5. One of the most difficult tasks in the development of a solution to a problem is to divide the solution into modules.

a. Explain the terms *coupling* and *cohesion* as applied to module design (4 Marks)

b. Explain what is meant by *call-by-value* and *call-by-reference* (4 Marks)

c. Explain and give examples of the following problem solving techniques (2 Marks each)

- vi. Solve by analogy
- vii. Divide and Conquer
- viii. Means-ends analysis

d. Consider the code fragment in the figure that follows and answer the following questions

a. Write down the method signatures of all methods (3 Marks)

- b. Identify and categorize the parameters as either formal or actual (3 Marks)

```
public static double calculateArea( double radius ) {  
    return Math.PI * radius * radius;  
}  
public static void main(String[] args) {  
    double diameter = 10.0;  
    double area = calculateArea( diameter / 2 );  
    System.out.println(area);  
}
```

6. Given an array T of temperatures
- Develop a pseudo code and flow chart solution that will calculate the average temperature for any size of T. (6Marks)
 - Develop a pseudo code and flow chart solution that will find the maximum temperature for any size of T. (6Marks)
 - Using the array of temperatures $T = [78, 89, 30, 23, 100, 23, 78, 22, 10, 92]$. Show contents of T at every step
 - Insertion sort (4Marks)
 - Binary search (4Marks)

END

MAKERERE UNIVERSITY
College of Computing and Information Science
School of Computing
Department of Networks and Department of Computer Science
BIS 1104: Communication Skills for IT

TEST

Semester One 2017/2018

Read the article below and answer questions that follow:

The Silent Killer of Big Companies
Boris Groysberg and Michael Slind
October 25, 2012

A leading mobile-phone maker falls out of step with its market — and struggles to catch up. An energy-trading company rises high — and then suddenly implodes. A luxury cruise ship takes a wrong turn — and the parent cruise-line company finds itself on troubled waters. A mighty oil company presides over an environmental disaster — one that spills over to become a PR disaster as well.

The board of an airline hires a CEO — and then cancels his contract after just three years. Five big companies. Five big problems. One of these companies is a high-tech manufacturer, two of them are in the energy sector, and two of them are in the consumer transport business. Otherwise, they have almost nothing in common. The problems that each company has faced vary widely, too.

Or so it might seem. In fact, each of these cases of organizational failure involves — right at the crux of the matter — a grievous lapse in communication. Let's look further at these five companies and their problems.

Nokia: For more than a decade, Nokia was the world's largest mobile-phone manufacturer. But when the smartphone became the next big thing within the mobility market, the company lost its competitive edge. According to an in-depth account of why Nokia has "struggle[d] to turn its good ideas into products," much of the problem stems from habits of communication that favor unfocused discussions about strategy over clear plans to bring new phone models to market.

Enron: A scholarly investigation into the problems that led to Enron's collapse pinpointed several "communication-based leader responsibilities" that senior managers failed to meet — responsibilities such as "communicating appropriate values" and "maintaining openness to signs of problems."

Star Princess Cruise Lines: In April 2012, passengers on the cruise ship Star Princess told members of the ship's crew that they had spotted a fishing boat that showed signs of being in distress. Yet the ship didn't stop to provide aid, and two people on the fishing boat later died of dehydration. Later, the cruise-line company issued a statement that cited a "breakdown in communication in relaying the passengers' concern."

British Petroleum: The blowout of the Deepwater Horizon offshore oil rig, in April 2010, resulted in a massive crisis for BP and its partners. Among the key factors that contributed to the

Rodney Kiggundu
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disaster were "poor communications" and a failure "to share important information," according to a report on the White House commission that studied the incident.

Thai Airways: When Piyasvasti Amranand lost his job as CEO of Thai Air, in May 2012, the reason for his dismissal was somewhat elusive. After all, he had held the post for a mere three years, and the company's board had recently given him a positive annual review. According to one media report, however, the chairman of the airline said that "communication problems between Piyasvasti and the board were hampering the company's effort to meet its profit target."

Every leader keenly understands the consequences of taking a lax approach to financial management. And most leaders today recognize how dangerous it can be to take a lax approach to people management. But how many leaders appreciate the risks that come with taking a lax approach to communication management — with failing to manage the way that ideas and information flows within their organization?

Those leaders who do effectively manage the flow of information within their company tend to share a certain outlook — and a certain set of practices. They adopt communication methods that enable them to get closer to employees. They put in place communication systems that promote dialogue, as opposed to monologue. They engage employees by allowing them to become active participants in the communication process. They rigorously pursue an agenda that aligns their communication efforts with organizational strategy.

They put a premium on ensuring that people in their organization talk with each other, and not just to each other,

Boris Groysberg (bgroysberg@hbs.edu) is a professor of business administration at Harvard Business School. Michael Slind (mike@talkinbook.com) is a writer, editor, and communication consultant. They are co-authors of the book *Talk, Inc.: How Trusted Leaders Use Conversation to Power Their Organizations* (HBR Press, 2012).

Questions:

1. Explain at least 5 communication problems highlighted in the extract. (15 marks)
2. Discuss at least 5 suggestions the writers advance to address the above highlighted problems? (15 marks)
3. With reference to the extract, examine the importance of communication in any business venture? (10 marks)
4. From your understanding of communication, explain at least 5 consequences of having a *lax approach to people management* for any business? (10 marks)

End

*S. Kaur
2/1/13*

MAKERERE UNIVERSITY
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF LANGUAGES LITERATURE AND COMMUNICATION
DEPARTMENT OF LINGUISTICS, ENGLISH LANGUAGE STUDIES AND
COMMUNICATION SKILLS

YEAR I SEMESTER I EXAMINATIONS 2012/2013 ACADEMIC YEAR

CSK II01: UNI-WIDE COMMUNICATION SKILLS
DATE: Saturday 15th December, 2012 TIME: 8:00 am – 11:00 am

INSTRUCTIONS:

- Attempt one question from each section.
- All questions carry equal marks

SECTION A: SPEAKING *

1. You have been selected to be the Makerere University's representative to the African Youth Conference on AIDS. The aim of the conference is discuss possible ways the youth can adopt to get off the sexual network.
 - a) Write a two-page speech presentation you would deliver at the above conference.
 - b) Explain any five ways one would make an effective introduction or conclusion to a speech.
2. Your former classmate and current chairperson of your O.Bs/O.Gs School Re-union is inexperienced in public speaking but has been assigned to give a talk to a team of journalists attending the school's re-union fundraising campaign. She is seeking advice from you in preparation for that talk.
 - a) Describe to her the key parts of the speech she should give, citing the usefulness of each of those parts.
 - b) Give at least five examples of visual aids that you would recommend her to use during the presentation.

SECTION B: WRITING SKILLS

3. As a student of Communication Skills, you have been invited to a seminar in which you are supposed to present a written paper on the need for effective communication skills at the workplace.
 - a) Discuss the five steps of writing that you would go through in order to come up with a good written paper.
 - b) Write a one page summary of the above mentioned paper.

4. The text below is poorly written. Read it carefully and answer questions below.

it is important to reconize people when they are still alive: I salute Makerere University for recognizing Dr. Martin jerome Aliker-our role model-when he is still alive “ ”

Dr.Martin aliker has contributed through his active participation in directing and growing businesses? and Through his mentorship of present and future business leaders.

Aliker needs needs to train and mentor some of todays students. a lot of the graduates are intelligent but their morals are lacking. Mr.Chancellor sir-I now invite Dr.Martin Aliker to give his speech! .

Martin revealed that makerere's first name in 1922 was in fact Nyanja eradde which he says made no sense to him, before the authorities settled on Makerere;

Aliker reeled off a memorable account of what it was like to be a Student back then. Few had realized that most students were aged 30years when they got to Makerere. ***

“The transition to a university college was not without trauma. Some lecturers were sacked and for the First time some of them saw a grown White man cry because his job had been terminated.”

But if there was mild applause then, the biggest applause was reserved for his next offering when talked about how the first female students responded to being at Makerere.

“Their academic background was shaky hence a story is about to one of these adult students being asked by a curious person. She was asked, “What are you studying at Makerere?” to which she replied, “I'm studying adultery.”

The response elicited a long applause before Aliker could continue. Apparently just like today, students then lived in fear of end of year exams. Ultimately the first graduates finally got the university into a tiff with companies that sought to recruit them. According to the Principal then, Sir Bernard De Bunsen, the students had been trained to think not to be career holders.“I did not educate my students to be bloody merchants,” De Bunsen is said to have told recruiters from the day's major companies- shell and caltex()

Martin defended the principal arguing that,from his rich and celebrated experience,students in the universities are supposed to learn how to think. “This is why in the early universities, Philosophy was a very important subject followed by Mathematics. Both subjects cannot offer you a job but they teach ‘o think,” he stressed.”

mistakes in the above passage and correct the misspelled words.
mistakes and correct them.

Invitation

- iii) A disaster can occur when
- a) flammable materials are stored improperly.
 - b) dead leaves are piled high against a home.
 - c) an emergency water source is hard to reach.
 - d) All of the above.
- iv) are responsible for fire safety in the home.
- a) parents
 - b) children
 - c) adults
 - d) homeowners
- v) When the checklist from the ministry of Disaster preparedness is followed,
- a) the disaster will never occur
 - b) chances of disaster are reduced
 - c) disaster will be prevented
 - d) none of these

Questions (vi)-(viii), answer in detail as required per question

- vi) Explain the aspects that make the article effective
- vii) What reading method have you applied and why?
- viii) Suggest an alternative title for the passage.

Passes accept resp & benefit entitled
Assumes extend rights & responsibilities (Rejoice reward)
Agree - Doesn't accept resp & benefit entitl
END n3 b6

Lijjwando Rodney
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MAKERERE UNIVERSITY

COLLEGE OF COMPUTING & INFORMATION SCIENCES

SCHOOL OF COMPUTING & INFORMATICS
TECHNOLOGY

END OF SEMESTER I EXAMINATION 2017/2018

PROGRAMME: CS I, IST I, SE I, BIS 2

YEAR OF STUDY: I & 2

COURSE NAME: Structured Programming

COURSE CODE: CSC 1107

DATE: Tuesday December 5, 2017

TIME: 12:00 – 3:00 pm

EXAMINATION INSTRUCTIONS

1. ATTEMPT ALL QUESTIONS IN SECTION A (40 MARKS)
2. ATTEMPT ANY THREE (3) QUESTIONS FROM SECTION B (60 MARKS)
3. DO NOT OPEN THIS EXAM UNTIL YOU ARE TOLD TO DO SO
4. ATTEMPT EACH QUESTION IN SECTION B ON A NEW PAGE
5. ALL ROUGH WORK SHOULD BE IN YOUR ANSWER BOOKLET

Kiggundu Rodney
S/
Concerned- Cogen

SECTION A (40 Marks)

[Answer all questions in this section.]

- a. Distinguish between each of the following as applied in programming
 - a) A compile-time error and a logical error (2 Marks)
 - b) Syntax and semantics (2 Marks)
- b. Write down 2 rules that must be followed when declaring variables in C. (2 Marks)
- c. Using an example, distinguish between a single line comment and a multi-line comment in C.
/ Text */ - single line comment* (2 Marks)
- d. Write down a statement in C language that defines g as a constant with a value of 9.81
(Note: You do not have to write the whole program). (2 Marks)
- e. Given that x is a variable that takes the value of y if y is an even number otherwise x takes on the value of y+3. In one line of C code. Use a conditional operator to represent this scenario (Note: You do not have to write the whole program). (2 Marks)
- f. Write down a C program that requests a user to enter an integer and the program prints the square of that number. Your program ~~must~~ make use of a function to return the square of a number. (5 Marks)
- g. CoCIS is in need of a system to register students' bio-data. The system is supposed to capture the RegistrationNumber (text), Name (text) and Age (number). When the system starts running, the user is required to enter the above details and it prints them on the screen. Then the user is requested to enter 1 to continue or any other integer to stop.
Write down a C program that solves this problem. (7 Marks)
- h. Write down a simple C expression that evaluates to the largest multiple of a number not greater than a given number m. (4 Marks)
- i. Explain the usage of the following keywords in C: (2 Marks each)
 - a) break;
 - b) continue;
- j. Write down the syntax of the *while* statement in C and explain how it works. (4 Marks)
- k. Write a small piece of C code that adds up the first 50 natural odd numbers (Note: You do not have to write a complete program). (4 Marks)

SECTION B (60 Marks)

Involution
Invention

Question 1:

- a. Recall that an equilateral triangle has 3 equal sides, an isosceles triangle has 2 sides equal, a scalene has all 3 different sides while a right-angled triangle satisfies Pythagoras' theorem. Write down a C program that will read three values from the user representing the length and then determines the kind of triangle they form. [Hint: Pythagoras' theorem says that if a is hypotenuse, b is the base and c is the opposite, then $a^2 = b^2 + c^2$].

(10 Marks)

- b. A farmer has a rectangular piece of land that he wishes to divide in small rectangular paddocks in order to properly graze his animals at the farm. The small rectangular paddocks must be of equal size. You are required to write a C program that will request the farmer to enter the length and width of the small paddocks. Then, the program determines the area of each small rectangular paddock using a function which you must later call in the main(). The program should print the size of each small paddock and the total area that the farmer needs to make 100 paddocks.

(10 Marks)

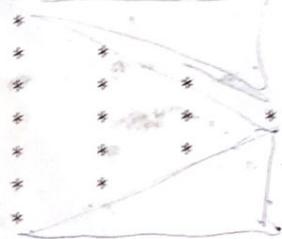
Question 2:

- a. Given that A is an array of x elements. What should be the index of the second last element in array A ? $\underline{3x-2}$ (1 Mark)

- b. Given that B is an array. What should be the pointer that points to the second element in array B ? (1 Mark) $\underline{\text{Int}^k p = \&B[1]}$

- c. Write down a C program that will require a user to enter 15 numeric values and then store these values in the array. The program should then determine the average of the numbers entered and print them on the screen. The program should also print the smallest and largest of the values entered. [Hint: You will need to sort the array first in order to determine the largest and smallest]. (10 Marks)

- d. Using any loops of your choice, write down a C program that will print the following pattern on the screen. (8 Marks)



Question 3:

- a. A leap year is divisible by 4 and not by 100, unless divisible by 400. Write a C function

int isLeap(int year) that given a year returns 1 (one) if the parameter corresponds to a leap year and 0 (zero) otherwise. (6 Marks)

- b. Consider the following recursive function:

```
int mystery(int a, int b) {
    if (b == 0) return 0;
    else if (b % 2 == 0) return mystery(a + a, b / 2);
    else return mystery(a + a, b / 2) + a;
}
```

- i. What is the value of mystery(5, 25) and mystery(6, 36)? (4 Marks)

- ii. Explain what the function mystery() does. (4 Marks)

- iii. Define a recursive function called printBinary() with the following signature:

```
void printBinary (int n)
```

which takes a positive integer number n and prints out its binary representation.

The function should print out as many bits as there are in the integer parameter's binary representation. (6 Marks)

Question 4:

You are provided with the following code, study it carefully and answer questions that follow:

```
1. #include <stdio.h>
2. #include <string.h>
3. void swap(int *x, int *y);
4. void square (int *x);
5. void main {
6.     int x=5, y=10, marks[5] = {50,45,33,22,10};
7.     string *a;
8.     a = "Lwomwa_joseph";
9.     swap(&x, &y);
10.    printf("The value of marks is %d\n", marks);
11.    printf("The required mark is %d\n", &marks[1]);
12.    printf("The required mark is %d\n", *(marks+1));
```

- ```
13. printf("The required mark is %d\n", (*marks+1));
14. printf("The required mark is %d\n", marks[1]);
15. }
```
- a) Explain the meaning and purpose of the lines of code marked 3 and 9: (2 Marks)
  - b) The above code displays errors when compiled, identify the possible errors. (4 Marks)
  - c) After correcting the above piece of code predict the possible output of the lines 12, 13, and 14 if compiled using a compiler of your choice (6 Marks)
  - d) Write definitions for the functions swap() and square() that will be used to swap the arguments of  $x$  and  $y$ , and to square the argument  $x$  respectively [Hint: Assume that parameter will be passed by reference]. (8 Marks)

**Question 5:**

- a) Given the statement below:

$m = x >= 50 ? 'P' : 'F' ;$

Rewrite the statement above using the *If-Else*. (2 Marks)

- b) Write a small program that takes a value and converts it from Celcius to Fahrenheit.

Given:  $C = \frac{5}{9}(F - 32)$  (6 Marks)

- c) Given an array of integers write a function to determine if there are any duplicates. Your method should have the following signature: (6 Marks)

`int containsDuplicates (int array[], size n)`

- d) Write down a piece of Java code to print out all the perfect cubes less than 4000 (i.e. 1, 8, 27, ...). (6 Marks)

**END**

*[Signature]*

MAKERERE UNIVERSITY  
COLLEGE OF COMPUTING & INFORMATION SCIENCES  
SCHOOL OF COMPUTING & INFORMATICS TECHNOLOGY

END OF SEMESTER I EXAMINATION 2016/2017

PROGRAMME: BIT / BSc. CS / BIS / BSSE, YEAR I

COURSE NAME: COMPUTER LITERACY

COURSE CODE: CSC1100

DATE: Wednesday, 1<sup>st</sup> February, 2017      TIME: 12:00 – 3:00pm

**EXAMINATION INSTRUCTIONS**

1. ATTEMPT ALL QUESTIONS IN SECTION A (40 MARKS)
2. ATTEMPT ANY THREE (3) QUESTIONS FROM SECTION B (60 MARKS)
3. DO NOT OPEN THIS EXAM UNTIL YOU ARE TOLD TO DO SO
4. ATTEMPT EACH QUESTION IN SECTION B ON A NEW PAGE
5. ALL ROUGH WORK SHOULD BE IN YOUR ANSWER BOOKLET

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Page 1 of 5

JF1r

## **SECTION A: [40 Marks]**

- (a) Write brief notes on the following terminologies as used in computing [2 Marks @]  
i. Cookies  
ii. Plug-in
- (b) Computers are said to use a Binary numbering system when working with data. Precisely explain, how it was made possible for computers to store data that is in text form for instance "INT X" using a Binary system? [4 Marks]
- (c) Of what use is the URL when browsing the internet? [2 Marks]
- (d) Suggest the main relevance of a Format Painter feature as applied in most Microsoft Office applications [2 Marks]
- (e) Xtechs Ltd Company has sold Peter a computer whose clock speed is 300 MHz. How many times does its system clock "tick" every second? [3 Marks]
- (f) Briefly explain what is meant by the term POST and explain how it is performed in a Computer [4 Marks]
- (g) Explain the relevance of a motherboard as used in computers systems [2 Marks]
- (h) Give any one example where real time operating systems are applicable [2 Marks]
- (i) Explain what is meant by the term machine cycle as used by processors [3 Marks]
- (j) Define the term Encryption as applied to the concept of security [2 Marks]
- (k) State any two potential benefits of using Microsoft Excel application as compared to a traditional mathematical calculator [2 Marks]
- (l) Suggest any two primary reasons why computers may need an operating system for proper functioning [4 Marks]
- (m) Differentiate between an attack and a threat as applied to the concepts of computer security [4 Marks]
- (n) State any two potential disadvantages that may arise in using any social media application like facebook or WhatsApp in regard to information privacy [2 Marks]

## SECTION B: [60 Marks]

### Question 1)

- (a) With the use of an appropriate example, differentiate between Relative and Absolute cell referencing as applied to Microsoft Excel computations [4 Marks]  
(b) The table following shows the actual points obtained by top Barclays Premier League teams in a competitive season.

|   | A           | B    | C    | D    | E    | F    |
|---|-------------|------|------|------|------|------|
| 1 | Team        | 2010 | 2011 | 2012 | 2013 | 2014 |
| 2 | Liverpool   | 16   | 20   | 10   | 7    | 11   |
| 3 | Arsenal     | 15   | 22   |      | 8    | 19   |
| 4 | Man United  | 17   | 28   | 21   | 19   |      |
| 5 | Chelsea     |      | 7    | 27   | 15   | 13   |
| 6 | Aston Villa | 10   |      |      |      | 7    |
| 7 | Man City    | 16   | 27   | 15   | 21   |      |

Write appropriate excel formulas to accomplish the following tasks to Compute the

- Total points for each team. [3 Marks]
  - Average points for each team [3 Marks]
  - Highest points for each team. [3 Marks]
  - Number of times each team appears in five competitive seasons [3 Marks]
- (c) Write a Microsoft Excel formula using if statements to give each team an award for all the years using the procedure detailed in the table below. [4 Marks]

| A |                       |                  |
|---|-----------------------|------------------|
| 1 | Total Range of Points | Award            |
| 2 | 90-150                | Champion         |
| 3 | 70-89                 | FA Cup           |
| 4 | 50-69                 | Carling Cup      |
| 5 | 30-49                 | Community Shield |
| 6 | Below 30              | Relegation       |

### Question 2)

- With aid of a well labelled diagram, explain the client-server paradigm[4 Marks]
- Of what relevance is the IP address on a computer.[2 Marks]
- Computer users browse a lot of web sites from the internet when searching for different internet materials. How would you evaluate the website you are using to make sure you get the right contents?[6 Marks]
- Explain the term Mailing list[1 Mark]
- What does it mean for a mailing list to be moderated? [2 Marks]
- Explain the term spam in relation to the concept of email account management [2 Marks]
- Explain any three ways how you can safeguard against receiving email spam that is sent to each individual's email accounts.[3 Marks]

### **Question 3)**

- (a) What do you understand by the term “Information Security”? [2 Marks]
- (b) Differentiate between the following terms as applied to computer systems security within an organization; [2 Marks @]
- i. Non repudiation
  - ii. Hacker
- (c) Security programs seek to protect an enterprise from different forms of breaches. Briefly explain any two forms of these breaches [4 Marks]
- (d) Explain any two results of Security breaches discussed in (c) above [4 Marks]
- (e) Discuss any two ways to prevent health-related disorders or injuries that may arise due to computer use. [2 Marks]
- (f) Companies today are challenged by many questions of ethical issues arising from the wide spread use of Information Technology (IT). These issues are not limited to I.T professionals but also involve everyone in the company who provides data, or uses information from the company's I.T systems. Basing on the above scenario, discuss the following urgent issues that businesses must confront in today's IT system usage
- i. Social Media Privacy [2 Marks]
  - ii. Intellectual Property Ownership [2 Marks]

### **Question 4)**

- (a) What do you understand by the term a “Computer System” [2 Marks]
- (b) With relevant examples, explain four major components that make up a computer system organization. [4 Marks]
- (c) Classification of computers can be categorized into mainly size, technology and purpose. In regard to the above mentioned factors, this can lead to a difference in costs, and hardware compatibility issues with different software environments. With reference to the above, discuss the following classification of computers according to size citing their major benefits and applicability of each category to an organization.
- i. Super Computer [3 Marks]
  - ii. Main Frame [3 Marks]
- (d) Extended ASCII, Unicode, and EBCDIC are some of the common character representations sets applied when storing data in computers. Explain any one clear distinction that exists among these character representations sets [2 Marks]
- (e) The following are the major components that make up the Central Processing Unit (CPU). Briefly discuss how each of the following components may contribute functionally to the performance of a computer system in relation to the CPU;
- i. Control Unit (CU) [2 Marks]
  - ii. Primary Storage [2 Marks]
  - iii. Arithmetic and Logic Unit (ALU) [2 Marks]

S.

### **Question 5)**

- (a) Clearly distinguish between the following terms as applied in computing, citing some relevant examples [2 Marks @]
- RAM and ROM
  - System and Application Software
- (b) Jane bought a memory card for her smartphone with a total capacity of 3.5GB. She then decided to store three images files having the following volumes namely; 0.5GB, 30MB and 900KB. Assuming that, the card already contained 2.24MB of some systems files. Determine how much space will be unused in GB after storage of the above files. [4 Marks]
- (c) Explain precisely, how each of the following components may enhance the speed of data processing in a given computer system; [2 Marks@]
- Cache Memory
  - Data Bus Size
  - System Clock
- (d) Clearly distinguish between Pipelining and Parallel Processing as used when the CPU is processing computer related tasks. [4 Marks]
- (e) Explain any two benefits realized with using Linux based operating systems as compared to Windows platform [2 Marks]

\*\*\*\*\*END\*\*\*\*\*

**MAKERERE UNIVERSITY**  
**COLLEGE OF COMPUTING AND INFORMATION SCIENCES**

CSC 1100: Computer Literacy

Instructions: Attempt all Questions

- Makerere University would like to install an information system that runs on internet to track its employees. The system will enable the organization to recruit new employees, register existing ones, track and manage their retirement benefits. The system will enhance communication among different staff located in different towns in Uganda and beyond.

- a) List two inputs and two outputs of the system (2 marks)
- b) Explain three hardware networking devices that MUK will use during setting up of the network. (3 marks)
- c) With the aid of a diagram explain the client -server paradigm (3 marks)
- d) In addition to enhancing better communication, Justify two advantages MUK will gain from connecting to the internet (2 marks)

- KOMZ Uganda Ltd has offices around Uganda. These are connected to the head office in USA through the regional office in Kampala. As an expert you are aware that security can be breached at the source, during transmission or at the destination.

- a) Define the term Information Security (2 marks)
- b) Clearly elaborate four security threats stating how each can be countered. (8 Marks)

- Hacking  
- Spawning  
- Viruses

- Differentiate between the following

- i. RAM and ROM (2 marks)
- ii. System and application software (2 marks)
- b) Explain the three components that enhance the functionality of a central processing unit (CPU). (6 marks)

- ALU  
- RAM  
- Control unit

4. A

B

C

D

| Activity Name | Expected time to complete(days) | Cost of activity | Pessimistic Time |
|---------------|---------------------------------|------------------|------------------|
| A             | 2                               | 400000           | 6                |
| B             | 4                               | 500              | 6                |
| E             | 4                               | 80000            | 12               |
| F             | 6                               | 1200000          | 18               |



- Differentiate between absolute, relative and mixed referencing (6 marks)

- Write the excel formula that will enable you,

- i. Get the total cost of the project activities (2 marks)
- ii. Identify the activity with the highest pessimistic time (2 marks)

1 of 1

Site

= RANK(C)

Rank  
11001

Kiguru Rodney  
©Concerned - Citizen

**MAKERERE UNIVERSITY**  
**COLLEGE OF COMPUTING & INFORMATION SCIENCES**  
**SCHOOL OF COMPUTING & INFORMATICS TECHNOLOGY**

**END OF SEMESTER I EXAMINATION 2017/2018**

**PROGRAMME: BSc. CS/BSSE/BIT/BJCO, YEAR I**

**COURSE NAME: COMPUTER LITERACY**

**COURSE CODE: CSC1100**

**DATE: Wednesday, 29th November 2017**

**TIME: 12:00 – 3:00pm**

**EXAMINATION INSTRUCTIONS**

1. ATTEMPT ALL QUESTIONS IN SECTION A (40 MARKS)
2. ATTEMPT ANY THREE (3) QUESTIONS FROM SECTION B (60 MARKS)
3. DO NOT OPEN THIS EXAM UNTIL YOU ARE TOLD TO DO SO
4. ATTEMPT EACH QUESTION IN SECTION B ON A NEW PAGE
5. ALL ROUGH WORK SHOULD BE IN YOUR ANSWER BOOKLET

Kiggundu Rodney  
Concerned - Citizen