



**UGANDA INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY  
RECESS EXAMINATIONS FOR ACADEMIC YEAR 2021/2022**

**DEPARTMENT: ICT**

**SEMESTER: TWO**

**PROGRAMME(S): DIPLOMA IN INFORMATION TECHNOLOGY FOR SCIENCE (DITS)  
DIPLOMA IN INFORMATION TECHNOLOGY FOR BUSINESS (DITB)**

**YEAR OF STUDY: TWO**

**COURSE: GRAPHICAL USER INTERFACE (GUI)**

**COURSE CODE : IT223**

**DATE: THURSDAY 29TH, SEPTEMBER 2022**

**TIME: 2:00 PM – 5:00 PM**

**DURATION: 3 HOURS**

**INSTRUCTIONS:**

- (i) This paper contains two Sections: A (40 marks) & B (60 marks).**
- (ii) Attempt ALL questions in Section A, and ONLY THREE questions in Section B.**
- (iii) All questions in Section B carry equal marks.**
- (iv) Credit will be given for use of relevant examples and illustrations.**
- (v) Begin each number in Section B on a new page of the answer sheet.**
- (vi) DO NOT write on this question paper.**

## GRAPHICAL USER INTERFACE

### SECTION A [40 MARKS]

Attempt **ALL** the Questions in this Section

1. (a) What is the purpose of the Dim keyword **(2 marks)**  
(b) Give **three (3)** benefits of a good interface design **(3 marks)**
2. (a) Give **three (3)** reasons why Visual Basic is preferred among the high level languages. **(3 marks)**  
b) Give any **four (4)** windows found in Visual Basic 2010 **(4 marks)**
3. (a) Explain the difference between a listbox and a textbox control as used in the design of interfaces **(2 marks)**  
(b) Name any **two (2)** properties that apply to the above controls **(2 marks)**
4. Write down the syntax of the ***If....Then....Else*** statement and explain how it works **(4 marks)**
5. Explain the meaning of each of the following lines in the program below. Show what will be printed after compiling and running the given code **(5 marks)**

1. *' Demonstrate the Do While loop*
2. *Dim intCount As Integer = 0*
  
3. *Do While intCount < 5*
4. *lstOutput.Items.Add("UICT")*
5. *intCount += 1*
6. *Loop*

Describe any two data types used in Java. **(4 marks)**

6. Give **five (5)** factors to be considered in designing an error message of any user interface **(5 marks)**
7. (a) Explain what is meant by Interface evaluation **(2 marks)**  
(b) Give **four (4)** techniques that can be used to collect data during user interface evaluation **(4 marks)**

### SECTION B [60 MARKS]

Attempt **ONLY THREE** Questions in this Section

#### Question 1

- a) Explain any **THREE** advantages and any **THREE** disadvantages of using graphical user interfaces. **[12 Marks]**
- b) Explain any four general principles of user interface design **[08 Marks]**

#### Question 2

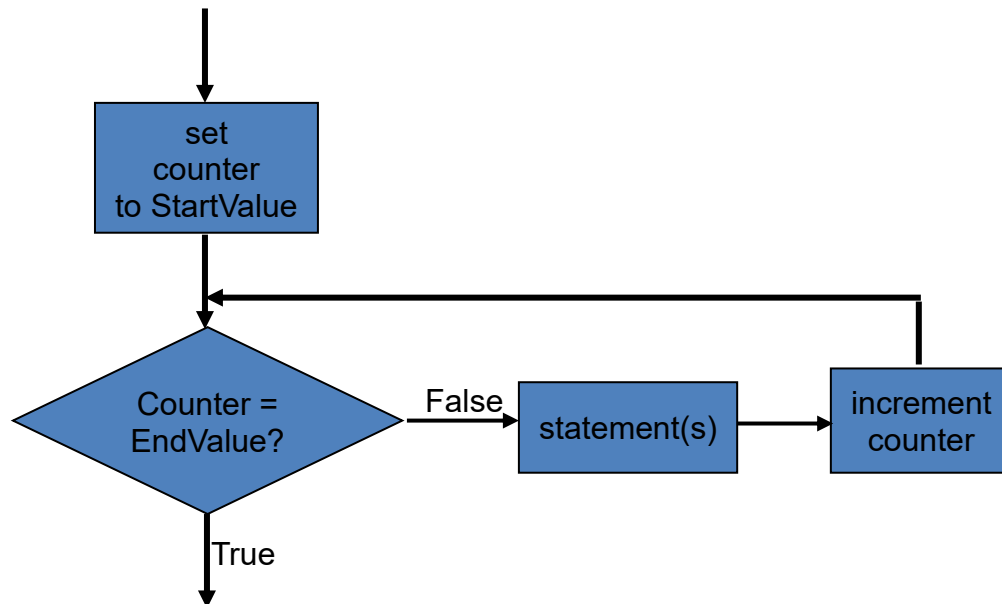
- a) Explain the difference between a variable and a constant **(2 marks)**
- b) Differentiate between the following declarations; **(2 marks)**

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- i) Dim password As String and
  - ii) Dim password As String\*10
- c) Outline at least **four (4)** rules followed in naming valid variables in VB programming **(4 marks)**
- d) Write a simple Visual Basic program that evaluates the following expression **(4 marks)**
- $$p = \frac{\sqrt{3bc-4ac}}{2a}$$
- e) With the help of illustration, differentiate between the following controls as used in the design of interfaces **(8 Marks)**
- i) Check box and radio buttons
  - ii) List Box and Combo Box

### Question 3

- a) (i) State the syntax of Select Case and explain how it works in Visual basic. **(4 marks)**
- (ii) Using the Select Case in (a) (i) above, design a code that will capture Nanjara's marks for three subject, total up and average the marks, and if her average is below 50%, she will be graded as "FAILURE" otherwise, she will be graded as "PASSED". **(6 Marks)**
- b) Study the flow chart below and answer the following questions



- i) Write the syntax of the above flow chart **(2 marks)**

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- ii) State the difference between the above loop and the Do Until Loop **(2 marks)**
- iii) Using any of the loops of your choice, write a program that prints the first odd numbers between 1 and 50 **(6 marks)**

### Question 4

- (a) Write a program which captures two separate strings “UGANDA” and “INSTITUTE” from the user and then computes and prints the following.
  - (i) Combine the string into one which space between the two words **(4 marks)**
  - (ii) Output the combined string in Upper case letters **(2 marks)**
- (b) Determines the number of characters in the combined string and extract the word “INST” from the combined string in a (i). **(4 marks)**
- c) User interaction means issuing commands and associated data to the computer system. Describe the different ways how a user can interact with a computer system. **(10 marks)**

### Question 5

- a) Briefly describe any **four (4)** documents (manual) that a software developer should provide to the user along with the system **(8 marks)**
- b) Assess the attributes of usability as applied in Graphical User Interface **(4 marks)**
- c) Explain the following types of graphical user interface evaluation: **(8 marks)**
  - (i) Formative evaluation
  - (ii) Summative evaluation
  - (iii) Impact evaluation
  - (iv) Outcome evaluation