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 13S – Y2 S2)

BIT 2118: APPLICATION PROGRAMMING I

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 **THREE** printed pages

Question One (Compulsory)

a) You are required to prepare a simple application for a middle level college to grade students. The application should accept marks scored in four subjects which should be entered through textboxes and computes average mark and award when a certain command button (compute) is clicked. Average mark and Award should be displayed through message dialog boxes. The grading system is shown below:

Average Mark	Award
75 – 100	Distinction
65 - < 75	Credit
50 - <65	Pass
0 - <50	Fail

    (i) Sketch the GUI (Graphical User Interface) **(6 marks)**
  (ii) Write VB code for your application (Grading system) **(10 marks)**

b) A program (VB Application) has the following controls:
- The Data control is linked to a database called Church.Mdb which is stored in a folder called Nairobi in C:\

- Four Textboxes to display Name, Gender, Age and Nationality. This information is retrieved from the fields (Member), (Sex), (Age) and (Country) respectively. This fields are in a table called tblMembers. State the values of each of the following properties of data object.

    (i)   Database, Name and Path
    (ii)   Record set Type
    (iii)   Connect
    (iv)   Record source   **(8 marks)**

c) State the value of each of the following properties for four bound textboxes discussed in (b) above.
    (i)   Data source
    (ii)   The four Data Fields   **(6 marks)**

Question Two

a) State the significance of Option Explicit as used in Application Programming (using VB)
                                                   (2 marks)

b) Using examples, explain the use of each of the following functions:
    (i)   RGB ( )
    (ii)   CBOOL ( )
    (iii) C Byte ( )
    (iv)   C Int ( )   **(8 marks)**

c) Construct a Windows Desktop Application program (using VB) with the following specifications. The user inputs salary through a Textbox. When a user clicks a command button (called Computer Grade), the application checks the value entered and displays the grade on a label based on the criteria indicated in the table below.

SALARY	GRADE
< = 50,000/=	A
< 50,000/ = AND > 30,000/=	B
<30,000/= AND > 15,000	C
<15,000/=	N/A

The program has a command button (called Exit) which when clicked, closes the form and the program:
    (i)   Sketch the GUI (Graphical User Interface)   **(4 marks)**
    (ii)   Write VB code for your Application   **(6 marks)**

Question Three

a) Explain the term MDIForm object.   **(4 marks)**

b) State the importance of MDIForm object in a multiple Document Application   **(4 marks)**

c) State importance of the following properties which are normally used in Multiple Document Applications:
    (i)   MDI Child
    (ii)   Align
    (iii) Write code (using VB) to add the following countries in a ListBox called List Country: Kenya, Uganda, Tanzania, Burundi and Rwanda. Tanzania should be selected by Default.
                                                   (8 marks)

Question Four

a) Using examples, define the following terms in reference to Application Programming (using VB)
Find all pair shortest paths for the diagram shown below by Floyd's algorithm **(4 marks)**

   (i)   Project
   (ii)   Object
   (iii)   Method
   (iv)   Form
   (v)   Control
   (vi)   Val ( ) function
   (vii)   Event
   (viii) Property   (**8 marks**)

b) Differentiate between:
   (i)   Basic and Visual Basic
   (ii)   Immediate Window and Code Window
   (iii) Steps to specify start form in an Application with many forms
   (iv)   Add an Active X control to the standard ToolBox
   (v)   Two ways of running/executing a VB program
   (vi)   Two ways of displaying project Explorer Window   **(12 marks)**

Question Five

a) Write VB code to perform each of the following tasks:
   (i)   Change text properties in Text1 to read as "ALL ANIMALS"
   (ii)   Produce a tip reading as "CLICK ME", when the mouse pointer rest on a command Button
   (iii) Change background colour of label1 to blue   **(6 marks)**

b) State the difference between:
   (i)   Label and Textbox controls
   (ii)   Name and caption properties   **(4 marks)**

c) Explain the steps to be followed to connect a table: "My Data" in an Ms-Access.database named "C:\ maintain.mdb", then display the data in a DBGrid control and navigate through the data using Data control. Sketch the GUI (Graphical User Interface)   **(6 marks)**

d) The table in (c) above: "MyData" has the field "PubID" as the primary key. The field is of string Data Type. Write VB code that prompts the user to enter PubID, and then searches for information about the publisher. Use Drynaset Type Record set   **(4 marks)**