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**University Examinations 2014/2015**

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

AND

SECOND YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY

**CIT 3230: APPLICATION PROGRAMMING 1**

 **DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Explain the six activities and identify deliverables involved in the system developments life cycle (4 Marks)
2. Discuss the features of the two main user interface types for application programs

(4 Marks)

1. Give a brief history of programming languages (4 Marks)
2. Design a user interface and incorporate the necessary objects that are required for an application which accepts student percentage scores and converts them into grades

 (4 Marks)

1. With the use of a diagram elaborate on the prototyping approach as opposed to the SDLC (4 Marks)
2. Discuss three features found within a visual basic development environment (3 Marks)
3. Give a brief account of the evolution of application programming (2 Marks)
4. Design a flow diagram for the following scenario:

For a patient to be served at the MUST hospital, he/she must be either a staff member or a student. For in-patient services, patient are transferred by ambulance to Kiirua Hospital via the university ambulance upon approval by the Chief Medical Officer who signs an approval document (5 Marks)

**QUESTION TWO (20 MARKS)**

1. With examples, differentiate between an algorithm and an event procedure (4 Marks)
2. Discuss the two main variable declaration types applied in visual basic programming

 (4 Marks)

1. Visual basic conforms to the event-driven programming concept. Expound on this concept (4 Marks)
2. With suitable examples, explain the use of the following visual basic key words:
3. Global variable name (2 Marks)
4. Option explicit (2 Marks)
5. Discuss the two main techniques which a programmer can apply in altering the behaviour of a Visual Basic object (2 Marks)
6. Explain two demerits of implicit declaration (2 Marks)

 **QUESTION THREE (20 MARKS)**

1. In resolving a mathematical expression, explain the operator order of precedence adopted by the visual basic complier (4 Marks)
2. List and give visual basic examples for the following operators:
3. Boolean operators (2 Marks)
4. Concatenation operator (2 Marks)
5. Distinguish between a visual basic primitive from a visual basic data structure (4 Marks)
6. What is stepwise refinement? (2 Marks)
7. Below is a control structure used in C programming:
8. Identify and illustrate it using flow diagram (2 Marks)
9. Convert it into a visual basic event procedure (2 Marks)

*In C:*

 *switch (val)*

 *{ case 1:*

 *statements;*

 *break;*

 *case 2:*

 *statements;*

 *break;*

 *default:*

 *statements;*

 *}*

**QUESTION FOUR (20 MARKS)**

1. With the use of global variable, design a user interface and write an event procedure which demonstrates how it can be share between two modules (4 Marks)
2. Use a constant declaration to develop a visual basic application that calculates the surface are of a cylinder, given the length and radius as user inputs (4 Marks)
3. Discuss the benefits of divide and conquer programming (4 Marks)
4. Give the suitable visual basic examples and data types required for the following identifiers:
5. sName (2 Marks)
6. iCount (2 Marks)
7. cBalance (2 Marks)
8. fAnswer (2 Marks)
9. Explain a situation where a static variable is preferred over a constant variable (2 Marks)

**QUESTION FIVE (20 MARKS)**

1. Identify the control structure applied and give the outcome of the following event procedure

*Sub Command1\_Click()*

*Dim iCount As Integer*

*For iCount=100 To 0 Step -10*

 *Print “iCount=;iCount*

 *Next iCount*

*End Sub* (8 Marks)

1. Give the levels for which arrays can be declared in an event procedure (4 Marks)
2. Discuss the HCI aspects applied in visual basic programming (4 Marks)
3. Explain the following terms as applied in application programming:
4. Modularity (2 Marks)
5. Passing parameters (2 Marks)