



TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

Select department

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BSIT/SEP/2014/ Y2S2 , BSIT/SEP/2013/J Y3S2

BIT2206: APPLICATION PROGRAMMING II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date Select Month Pick Year

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- Provide two (2) scenarios where RAD would be successful as a software development methodology. **(4 MARKS)**
- Discuss three disadvantages of the RAD approach to building software. **(6 MARKS)**
- State and explain one disadvantage of prototyping. **(3 MARKS)**
- Define the following terms: **(6 MARKS)**
 - Class
 - Class instance
 - Method
- Write the syntax for defining a class using Visual Basic. **(3 MARKS)**
- State what you understand by the term “backing field” with regards to declaring of properties. **(2 MARKS)**
- Distinguish between a function and a subroutine. **(4 MARKS)**
- Name the special utility in the .NET runtime that removes objects from memory. **(2 MARKS)**

Question TWO

- a. RAD is said to combat scope and requirements creep
 - i. Outline, with the use of an example, what you understand by scope creep. **(4MARKS)**
 - ii. Briefly explain why scope creep is harmful to a software development project. **(4MARKS)**
 - iii. How does RAD mitigate it? **(4MARKS)**
- b. Through the use of an appropriate diagram, show how RAD compresses the step-by-step development of conventional methods into an iterative process. **(8MARKS)**

Question THREE

- a. State what the following statement would return: **(6 MARKS)**
Dim result As Integer = X.CompareTo(Y)
- b. Many software engineers consider encapsulation and information hiding to be the same.
 - i. With reason, explain why this may not be precise. **(4 MARKS)**
 - ii. Explain the purpose for encapsulation and information hiding. **(4 MARKS)**
 - iii. With the use of a programming example, show the purpose for encapsulation and information hiding. **(6 MARKS)**

Question FOUR

- a. Explain the term instantiation and provide a Visual Basic example. **(4 MARKS)**
- b. The interface members (the object's properties, methods, and events) are resolved when an object variable is bound to an object.
 - i. Differentiate the two types of binding. **(4 MARKS)**
 - ii. List TWO (2) advantages of early binding an object variable. **(4 MARKS)**
- c. A dynamic application allows users to connect to and modify existing databases.
 - i. List and define two parameters given to a connection string when building the application using Visual Basic. **(4 MARKS)**
 - ii. Briefly explain how, when building your Visual Basic application, you would allow a user to connect to any database including those whose locations you do not know. **(4 MARKS)**

Question FIVE

- a. State how you can ensure your objects are eventually removed from memory. **(4 MARKS)**
- b. Show all the steps, and write any necessary Visual Basic code that would sum up four MS Excel cells, and then allow you to retrieve the sum from Excel and then send the value to a new Word document. **(8 MARKS)**
- c. Show all the steps, and write any necessary in Visual Basic code for deleting a database record from a DataTable. **(8 MARKS)**