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University Examinations 2012/2013

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

BIT 2206: APPLICATION PROGRAMMING II

DATE: APRIL 2013   TIME: 2 HOURS

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

QUESTION ONE – 30 MARKS

a. What is your understanding of the following terms:
    i.   Assembler   (1 Mark)
    ii. Algorithm   (1 Mark)
    iii. ActiveX   (2 Marks)
    iv. OLE   (2 Marks)

b. Using examples, explain the following terms as they relate to software development
    i.   Rapid application development   (2 Marks)
    ii. Prototyping   (2 Marks)
    iii. Commercial-of-the-shelf   (2 Marks)

c. Discuss the linkage between information systems success and information system quality.
                                                                         (4 Marks)
d. List and briefly discuss four best practice aspects when designing mobile applications user interface.   (8 Marks)

e. Using examples, discuss three major categories of mobile applications.   (6 Marks)

QUESTION TWO – 20 MARKS

a. The factorial of a positive integer n (written n!) is equal to the product of the positive integers form 1 to n. E.g the factorial of 3 is 3 x 2 x 1 = 6. Write a VB.NET program that prompts the user to enter a number and then the program calculates and displays the factorial of that number.
(3 Marks)

b. What input and output devices would you use for the following systems? Explain the basis of your choice.
   i.   Portable word processor (2 Marks)
   ii.   Air traffic control system (2 Marks)
   iii.   Tourist information system (2 Marks)

c. Suggest ideas for an interface which uses the properties of sound effectively. (3 Marks)

d. Suppose you have been toying with the idea of starting a small bike messenger company that will be hand delivering packages within a small geographical area. Explain whether you think your firm could be a digital firm and how. (5 Marks)

e. What is the major advantage of local mobile applications over SMS application? (3 Marks)

QUESTION THREE – 20 MARKS

a. List and briefly explain three limitation of mobile-based systems over desktop-based systems.
(3 Marks)

b. Write down the output of the following code segment. (4 Marks)
```
Dim j As String = " "
     For i = 0 To 6
          j = j + 1. ToString &" "
          ListBox1.Items.Add(j)
   Next i
```

c. Explain the difference between the following terms as used in computer programming:
   i.   Syntax and semantics (2 Marks)
   ii.   Design time and runtime (2 Marks)
   iii.   Variable and constant (2 Marks)

d. Write SQL statements to perform the following tasks:
   i.   Create a database by the name KUCT (2 Marks)
   ii.   Create a table named Employees with the following fields: Employee Number, Employee Names, Employment Date, Designation and Salary. (3 Marks)

   iii.   Populate the database with two records. (2 Marks)

QUESTION FOUR – 20 MARKS

a. Discuss the impact mobile technology towards the achievement of vision 2030.   (6 Marks)
b. Using examples, explain what you understand by the following terms as used in computer programming.
    i.   Compiler   (2 Marks)
    ii.   Comments   (2 Marks)
    iii.   Infinite loop   (2 Marks)
    iv.   High level programming language   (2 Marks)
    v.   Low level programming language   (2 Marks)

c. Write a VB.NET program that allows one to input 3 integer numbers arrange them in descending order and then display them to the user.   (4 Marks)

QUESTION FIVE – 20 MARKS

a. The NET framework is made up of two main components: The Common Language Runtime (CLR) and the .NET framework class library. Required: Explain the above components.
(8 Marks)

b. The Data Access model used for the .NET framework is called ADO.NET. ADO.NET enables a programmer writing code in VB.NET, C#, Visual C++ etc to access data sources. It is made up of three major components: **Dataset, Data provider** and **DataTable. Required:** Explain as thoroughly as possible the three components listed above.   (10 Marks)

c. ADO.NET is said to provide a disconnected data access model. Explain.   (2 Marks)