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University Examinations 2012/2013

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

BIT 2118: APPLICATION PROGRAMMING I

DATE: AUGUST 2013   **TIME: 2 HOURS**

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

QUESTION ONE – 30 MARKS

a. Identify and explain the main user interface types commonly used in application programming, with suitable examples.   (4 Marks)

b. Expound on the "WIMP" metaphor.   (4 Marks)

c. Define the following terms and provide example code:
   i.   Declaration   (2 Marks)
   ii. Initialization   (2 Marks)
  iii. Variable   (2 Marks)
   iv. Identifier   (2 Marks)
   v.   Primitive   (2 Marks)

d. List the basic tools necessary for application development.   (4 Marks)

e. Discuss the role played by the following:
   i.   Systems analyst.   (2 Marks)
   ii. Systems designer   (2 Marks)
  iii. Programmer   (2 Marks)
   iv. User   (2 Marks)

QUESTION TWO – 20 MARKS

a. With the use of a diagram, explain the steps for creating a visual basic application.   (6 Marks)
b. Describe the difference between design time and run time.   (4 Marks)
c. Distinguish between a variable and a constant, and give suitable visual basic code examples.
                                                                              (2 Marks)
d. Explain the usage of the following visual basic files:
   i.   .vbp files (1 Mark)
   ii. .frm files (1 Mark)
  iii. .bas files (1 Mark)
   iv. .exe files (1 Mark)
e. Elaborate on the two common ways of altering the behavior of a visual basic object.   (4 Marks)

QUESTION THREE – 20 MARKS

a. Define software prototyping and illustrate the various stages.   (3 Marks)
b. Discuss the advantages and disadvantages of software prototyping.   (3 Marks)
c. Give the meaning of the terms:
    i.   Event procedure   (2 Marks)
    ii.   Option explicit   (2 Marks)

d. Write an event procedure to calculate the following:
    i.   The area and circumference of a circle.   (3 Marks)
    ii.   The area and perimeter of a rectangle.   (3 Marks)

e. Explain the use of the visual basic toolbox.   (2 Marks)
f. Name and describe the four most commonly used toolbox objects.   (2 Marks)

QUESTION FOUR – 20 MARKS

a. Identify and distinguish between the two main declaration types applied in visual basic
    programming and give visual basic examples of each.   (4 Marks)

b. Name and explain the two main categories of control structures.   (4 Marks)
c. Write a visual basic program to convert student percentage scores into grades using:
    i.   An if statement   (3 Marks)
    ii.   Switch case statement   (3 Marks)

d. Explain the importance of using arrays.   (2 Marks)
e. Distinguish between pseudo code and algorithm.   (4 Marks)

QUESTION FIVE – 20 MARKS

a. Discuss the importance of stepwise refinement as applied in application development. (4 Marks)

b. Explain the Dos and Don'ts when selecting variable names.   (4 Marks)

c. Write an algorithm in pseudo code to capture a university admission process.   (4 Marks)

d. Discuss the importance of pretty printing.   (2 Marks)

e. Define the term ambiguity from a programming perspective.   (2 Marks)

f. Write an event procedure to demonstrate the use of a for ….. Next loop and an array which
    displays to the screen the Fibonacci sequence between 50 – 100   (4 Marks)