



MUEO

**MOI UNIVERSITY**

**OFFICE OF THE DEPUTY VICE CHANCELLOR, ACADEMIC  
AFFAIRS, RESEARCH & EXTENSION**

**UNIVERSITY EXAMINATIONS  
2016/2017 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
IN BACHELOR OF BUSINESS AND ECONOMICS**

**M CODE:-       BBM 210**

**RSE TITLE:-    COMPUTER PROGRAMMING**

**DATE:-14<sup>TH</sup> JUNE, 2017**

**TIME:- 2.00P.M. – 5.00P.M.**

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**ATTENTION TO CANDIDATES**

**SEE INSIDE.**

**THIS PAPER CONSISTS OF (2) PRINTED PAGES**

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Answer questions one and any other three

**Question One (25 Marks) Compulsory**

- a. Discuss the various techniques and strategies for solving problems. Explain the criteria for selecting a technique in problem solving. [6 marks]
- b. How are tools of problem solving beneficial in problem solving? Explain the importance of having knowledge of these tools to a programmer. [7 marks]
- c. You are required to compute the perimeter of a rectangle. Draw a flowchart; write an algorithm, and a corresponding program to perform the perimeter of a rectangle. [12 marks]

**d. Question Two (15 Marks)**

- a. Using syntax and flowchart, explain the various types of jumping control structures. [9 marks]
- b. Explain using examples the various data types available in any programming language. [4 marks]
- c. Explain the role of decision constructs in program development. [2 marks]

**Question Three (15 Marks)**

- a. Discuss any four types of operators in any typical programming language. [4 marks]
- b. Explain the following programming terms:
  - i. Local variable
  - ii. Software
  - iii. Object program
  - iv. Pointer [6 marks]
- c. Write a program to compute compound interest for the sum invested for any number of years. Use the formula;  
$$\text{comp\_interest} = \text{principal} * (1 + \text{rate}/100)^{\text{time}}$$
 [5 marks]

**Question Four (15 Marks)**

- a. Show how the following user defined data types are declared: [4 marks]
- i. Variable
  - ii. Arrays
  - iii. Pointers
  - iv. Functions
- b. Using a programming example, explain the concept of modular programming. [4 marks]
- c. Functions communicate by passing and receiving data. Discuss with the help of syntax how communication is achieved in modular programming approach. [7 marks]

**Question Five (15 Marks)**

- a. Discuss the criteria for testing program. [5 marks]
- b. Explain using examples the different types of errors in a program. [5 marks]
- c. Using the concept of arrays, write a program to sort elements of the array in ascending order. [5 marks]

**Question Six (15 Marks)**

A program is required to read an integer number and compute the sum of digits which are odd contained in the integer number. Using the concept of *do ... while* loop, draw a flowchart, and write a corresponding program to implement the process. [15 marks]