

MUEO

MOI UNIVERSITY

OFFICE OF THE DVC ACADEMIC AFFAIRS, RESEARCH AND EXTENSION

UNIVERSITY EXAMINATIONS

2015/2016 ACADEMIC YEAR

SECOND YEAR END OF SEMESTER EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT

EXAM CODE: BBM 210

EXAM TITLE: COMPUTER PROGRAMMING

DATE: 19TH AUGUST, 2016 TIME: 9.00 A.M. – 12.00 NOON

INSTRUCTION TO CANDIDATES

➤ **SEE INSIDE**

Answer questions one and any other three

Question One (25 Marks) Compulsory

- a. Explain the role played by flowcharts and algorithms in program design. [5 marks]
- b. Programs developed and implemented are not able to meet the demands of the users. Discuss the reasons that cause this software crisis. *- insufficient training - shortage of skilled resources* [6 marks]
- c. Planning the solution process for problems is an important task to every programmer. Explain the potential benefits realized by maximizing the planning process. [5 marks]
- d. With the help of a flowchart and algorithm, write a corresponding program to check if any input integer number is a prime number [9 marks]

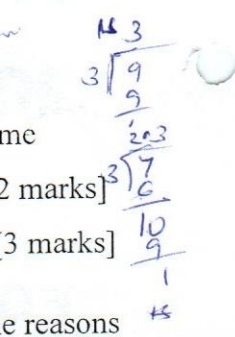
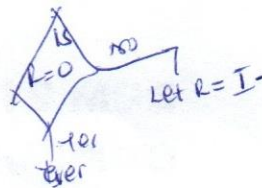
Question Two (15 Marks)

- a. Identify the type of error and correction in the following statement *Character name* [2 marks]
- b. Using syntax explain the importance of comments in a program. [3 marks]
- c. What is the value in variable x after the following code has executed? Explain the reasons to justify the solution. [2 marks]

x=10;

x%=5;

x=?



- d. Explain the reasons that justify the declaration of user defined data types in a program. [2 marks]
- e. A program is required to compute simple interest for 100 customers. Using while loop control structure, write a program to implement the process. [7 marks]

Question Three (15 Marks)

- a. Express the following statements in C language: [4 marks]
 - i. (a and b) or c;

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 12 34 56 78 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25

- ii. a is equivalent to b;
 - iii. a is greater than or equal to b
 - iv. a is incremented by a standard value.
- b. Explain the following programming terms:
- i. double
 - ii. local variable
 - iii. integer division
- c. Write a program to check if any input integer number is odd or even. [3 marks]
- d. Using examples explain any four types of operators available in a programming language. [4 marks]

- start
 - Input integer
 - set Quotient = I / 2
 Let R = I % 2
 If R = 0 THEN
 Print odd
 Print E
 End

Question Four (15 Marks)

- a. With the help of syntax and a flowchart, explain the following control structures:
- i. *break* control structure
 - ii. *if else* control structure [4 marks]
- b. Write a program to read the age of 100 persons and count the number of persons in the age group between 50 and 60. Use *do... while* loop and *continue* control structures. [6 marks]
- c. Discuss the possible applications of switch case control structure. [5 marks]

Question Five (15 Marks)

- a. Explain the role of main function in a program. [2 marks]
- b. Write function oriented program to compute the remainder of any two input integer number. [5 marks]
- c. Using syntax, show how arrays are declared and initialized in a program. [5 marks]
- d. Discuss the role of testing in program development. [4 marks]

Input integer I

Question Six (15 Marks)

Net salaries of employees are paid after the calculation of their deductions and allowances. The following rates are used for calculating these allowances and deductions:

Allowances

- HRA 15% of Basic
- DA 10% of Basic
- EA 5% of Basic
- TA 12% of Basic

Deductions

- SS 7% of Basic
- Levy 1% of Basic

In order to calculate the gross salary, the following formulas are used:

Gross Salary = Basic Salary + Allowances

Net Salary = Gross Salary - Deductions

Draw a flowchart, write an algorithm, and a code a corresponding program that prompts the user to enter the name and basic salary of an employee and output their names, basic salary, allowances, deductions, gross salary and net salary with their appropriate labels/headings.

NS BS A, D, GS, NS

