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**University Examinations 2014/2015**

STAGE II EXAMINATIONS FOR DIPLOMA IN INFORMATION TECHNOLOGY

**DIT 0202: INTRODUCTION TO PROGRAMMING AND ALGORITHMS**

**DATE: DECEMBER 2014 TIME: 1**$^{1}/\_{2}$ **HOURS**

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

**QUESTION ONE (30 MARKS)**

1. Define the following as used in C programming (4 marks)
2. Keyword
3. Pseudo code
4. Function
5. Array
6. With reference to C programming differentiate between: (4 marks)
7. Assembler and compiler
8. Library functions and user defined functions
9. (i) Write a C program to print your name on the computer screen (2 marks)

(ii) State two characteristics of C programming language (2 marks)

1. (i) Write a C program that accepts three numbers input by the user and computes their sum and average (4 marks)

(ii)Draw a flowchart to represent the program code in d (i) above. (3 marks)

1. Write a C program to print the sum of all odd integer numbers between 1 to 50. Use for loop. (5 marks)
2. (i) Describe two advantages of Assembly languages (4 marks)

(ii) State three rules of naming variables in C programming (3 marks)

**QUESTION TWO (15 MARKS)**

1. (i) Describe how you make comments in C program (1 mark)

(ii) Give three areas where C language is applied (3 marks)

1. Explain any three types of operators used in C programming. Give an example in each type (6 marks)
2. Write a C program to accept two numbers input by the user and checks whether they are equal or unequal. Use if......else statement (5 marks)

**QUESTION THREE (15 MARKS)**

1. Explain three methods used for testing a program for errors (6 marks)
2. Explain the difference between while and do...while loop statement. give the syntax for each (5 marks)
3. (i) Give two advantages of using Pseudo code (1 mark)

(ii)Describe three components of an algorithm (3 marks)

**QUESTION FOUR (15 MARKS)**

1. Explain two categories of arrays (4 marks)
2. Write a C program to find the sum of the first 50 natural numbers. Use while...loop. (6 marks)
3. State and explain the stages used in developing C program (5 marks)

**QUESTION FIVE**

1. (i) Write a C program that reads two numbers through the keyboard and determines if both are even numbers. The numbers are added and the sum output if they are both even otherwise they are multiplied and the product output. (6 marks)

(ii) Draw a flowchart to represent the program code above. (4 marks)

1. Write a program that computes the volume of a cube. Have the program prompt the user for each dimension. (5 marks)