



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

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

SIT 106: PROGRAMMING METHODOLOGY

Date: 18/12/2014

Time: 8:30 – 10:30 AM

INSTRUCTIONS

Answer question ONE and Any other TWO

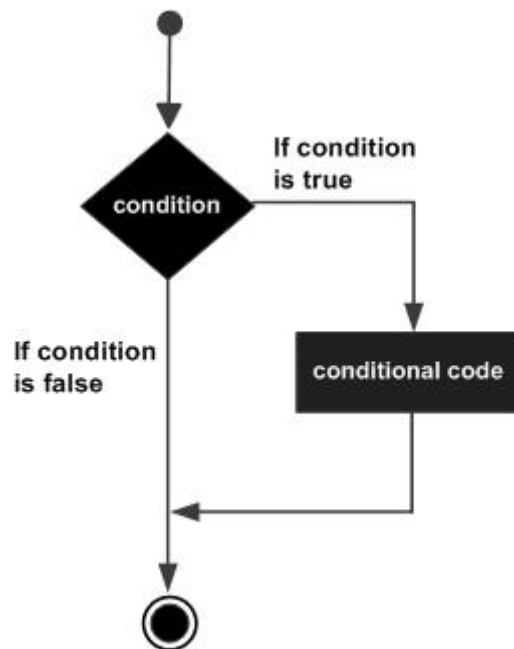
Question ONE: Compulsory

- a. Define Programming Methodology. **[2 marks]**
- b. Explain the three different approaches that fall under Problem solving as applied in programming methodology **[3 marks]**
- c. Differentiate between the following terms as used in program development **[4 marks]**
 - i. Algorithm and Pseudocode
 - ii. Variable and Constants
- d. Define the following terms as used in C programming. **[8 marks]**
 - i. Function
 - ii. Whitespace

- iii. Operators
- iv. Data type
- e. List the two ways that can be used in C to define constants. **[2 marks]**
- f. In program development, what is made by the term Algorithm Thinking. **[1 mark]**

Question TWO

- a. List and explain all the parts included in function definition in a C programming language **[8 marks]**
- b. The flow diagram below represents a simple **if... statement**; Using C programming Language, write the simplest code that represents the flow diagram. **[6 marks]**



- c. Explain the six properties of an algorithm in program development. **[6 marks]**

Question THREE

- a. Explain the importance of Algorithms in program development. **[10 marks]**
- b. The following C program code is displaying comments that are assigned to different grades. Using switch statements draw the relevant flow diagram on how the code below executes. **[5 marks]**

```

#include <stdio.h>

int main ()
{
    /* local variable definition */
    char grade = 'B';

    switch(grade)
    {
        case 'A' :
            printf("Excellent!\n" );
            break;
        case 'B' :
        case 'C' :
            printf("Well done\n" );
            break;
        case 'D' :
            printf("You passed\n" );
            break;
        case 'F' :
            printf("Better try again\n" );
            break;
        default :
            printf("Invalid grade\n" );
    }
    printf("Your grade is %c\n", grade );

    return 0;
}

```

- c. List the different operators using in C programming. **[5 marks]**

Question FOUR

- a. Using the simplest C program code, List and explain the main parts which make a C program **[10 marks]**
- b. In functions the void type specifies that no value is available. List and explain the three kinds of situations in which the void type is used. **[6 marks]**
- c. C programming provides two kinds expressions when using variables. List the two kinds of expressions and explain. **[4 marks]**