



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST/SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

BACHELOR OF COMMERCE

BMS 201/SIT 120: COMPUTER PROGRAMMING

DATE: 25/3/2021

TIME: 8.30-10.30 AM

INSTRUCTION: Answer Question ONE and any other TWO Question

QUESTION ONE- COMPULSORY (30 MARKS)

- a) Distinguish between the following
- i. Source code and object code (2 marks)
 - ii. Syntax error and logical error (2 marks)
 - iii. Primary and secondary memory (2 marks)
 - iv. For loop and while loop (2 marks)
- b) Describe Three types of translators used in programming (6 marks)
- c) Describe Three components of the structure of C program (6 marks)
- d) Explain Five advantages of using preprocessor during program execution (5 marks)
- e) Explain the action of the following codes:
- i. `int Sum=x+y+z;` (2 marks)
 - ii. `void main()`
`{`
`int a=10, b=2`
`int s= (a>b) ? a:b;`
`printf("value is:%d");`
`}` (3 marks)

QUESTION TWO (20 MARKS)

- a) Explain Five characteristics of a good algorithm (5 marks)
- b) Explain the roles performed by the following in programming (4 marks)
 - i. Preprocessor:
 - ii. Link Editor
- c) Describe Three types of Operators used in programming (6 marks)
- d) Explain the purpose of the program below. If value 21 is entered into the program below, what would be the output? (5 marks)

```
void main()
{
    int n;
    printf ("enter a number:");
    scanf ("%d", &n);
    If (n%2==0)
    printf ("even number");
    else
    printf("odd number");
}
```

QUESTION THREE (20 MARKS)

- a) Using suitable examples, describe Two types of functions used in programming (5 marks)
- b) Given the program below, state Four good programming practices not adhered to. Examine the program carefully and re-write the program using good programming practices. Explain what the program actually does. (6 marks)

```
public class CL{public static void main(String [] args)
{char [] l={'a', 'b', 'c', 'a', 'e', 'a', 'g'};
int n=0;for (int i=0; i < l.length; i++){ if (l[i]=='a')n++;}
System.out.printf("Number of letter a = %d\n", n);} }
```

- c) Outline the structure of a While Loop Syntax (4 marks)
- d) Outline Five advantages of using high level languages in code writing (5 marks)

QUESTION FOUR (20 MARKS)

- a) Write a C program to display the statement “welcome to my first program” (5 marks)
- b) Write the syntax for declaring and initializing a single dimensional array (4 marks)
- c) Draw a flowchart to add two numbers entered by user. (6 marks)
- d) Outline Five input devices of a computer system (5 marks)

QUESTION FIVE (20 MARKS)

- a) Write a C program to add two numbers (8 marks)
- b) Describe the Three parts of a function (6 marks)
- c) Explain the process of creating and running programs (6 marks)