



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (MECHANICAL ENGINEERING)

BACHELOR OF COMMERCE

BMS 201: COMPUTER PROGRAMMING

EMM 201: PROGRAMMING 1

DATE: 17/12/2021

TIME: 8.30-10.30 AM

INSTRUCTIONS: Answer Question ONE and any other TWO Questions in this paper

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the following terms as used in programming
 - i. Machine language (3 marks)
 - ii. Assembly language (3 marks)
 - iii. High level language (3 marks)
- b) Outline three examples of reserved words in C Programming Language. (3 marks)
- c) Discuss TWO types of computer software (4 marks)
- d) Outline TWO differences between distributed computing environment and client/server environment of computing. (4 marks)
- e) Distinguish between pre-processor directive and header file as used in programming using an examples in each case. (4 marks)
- f) State three roles of functions in programming (3 marks)
- g) Write a code snippet to illustrate the use of a local variable. (3 marks)

QUESTION TWO (20 MARKS)

- a) Explain the term variable in C programming using an example. (3 marks)
- b) State TWO examples of storage classes in C Programming language. (2 marks)
- c) Explain a programmer defined function. (3 marks)
- d) Give a brief description of the following terms;
 - i) Returnable function (3 marks)
 - ii) Recursive function (3 marks)
- e) Write a program in C that calls for radius and calculates the area of a circle. (6 marks)

QUESTION THREE (20 MARKS)

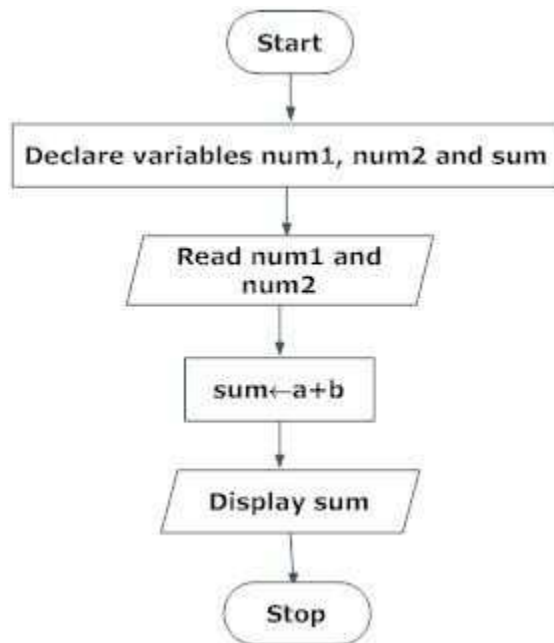
- a) Explain THREE types of errors in programming. (6 marks)
- b) What is Sentinel controlled repetition with reference to looping structures (2 marks)
- c) Discuss three areas where C programming has been used. (6 marks)
- d) Briefly describe THREE program control structures used in C. (6 marks)

QUESTION FOUR (20 MARKS)

- a) What is the name given to this “/*.....*/” and what is its purpose in C Programming language? (4 marks)
- b) Explain the use of break in C Programming Language. (2 marks)
- c) Write a code program to determine if a number is odd or even using the if – else statement. (5 marks)
- d) Convert the code in c above to use the ‘for’ loop to do the same task and get the same results. (5 marks)
- e) Differentiate between an interpreter and compiler. (4 marks)

QUESTION FIVE (20 MARKS)

- a) Write a C program that solves the same problem as the flow chart below. (6 marks)



- b) Outline THREE reasons why C is widely used to develop programs (3 marks)
- c) i. Explain what an algorithm is. (3 marks)
- ii. Outline FOUR characteristics of an algorithm. (4 marks)
- iii. Write an algorithm for a program that calculates the average of three integers. (4 marks)