



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF LOGISTICS
AND SUPPLY CHAIN MANAGEMENT
2ND YEAR 2ND SEMESTER 2022/2023 ACADEMIC YEAR
MAIN CAMPUS

COURSE CODE:ITB 9210

COURSE TITLE: FUNDERMENTALS OF PROGRAMMING

EXAM VENUE:

STREAM:

DATE:

EXAM SESSION:

TIME:

INSTRUCTIONS

- 1. Answer Question 1 (Compulsory) and ANY other TWO questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE

30 MARKS

- a) Define the following programming language terminologies.
- i. Global Variable
 - ii. Variable 2 marks
- b) John took a loan of Kshs. 400,000 from a local bank at an interest rate of 10% payable in Seven years. As a developer you are to track monthly simple interest repayments for John Using flow chart symbols :
- i. Identify the input, processing , output and storage requirements for such a program 4 marks
 - ii. Design the algorithm for the program above using a simple flowchart and pseudo-code. 4 marks
- C) List and Explain three advantages of C programming as a high –level language. 4 marks
- D) Using block diagrams distinguish between *while loop* and *a do while loop* programming 6 marks
- E) Outline TWO features of each of the following types of programming languages:
- i. Machine language,
 - ii. Assembly language,
 - iii. Structured languages. 6 marks
- F) Describe each of the following program design tools.
- i. Pseudo code
 - ii. Flowcharts 4 marks

QUESTION 2 -

20 MARKS

- a) With Examples, differentiate between the 4th generation languages and 3rd generation languages. 4 marks
- b) What is file handling in relation to programming? list 2 popularly used functions in file handling. 4 marks
- c) With the aid a diagram and syntax explain the following control structures:
- (i) Conditional (Decision making) Control structure
 - (ii) Iterative (looping)Control structure 8 marks

- d) Draw and explain any four symbols used for different states in a flow chart? 4 marks

QUESTION 3 -

20 MARKS

- a) List and explain any 6 keywords (reserved) words in C programming and how they are used in programming 6 marks
- b) A lecturer requested a programmer to design for her a simple program that would help her do the following:
- Enter the names of students and marks obtained in 6 subjects – Fundamental of programming, Logistics and supplies, Financial Accounting, Logistic Laws, Business studies, Computer Literacy.
 - After entering the mark for each subject, the program should calculate the total and average marks for each student.
 - Depending on the Average mark obtained, the program should assign grade as follows:
 - i. Between 80 and 100 – A
 - ii. Between 70 and 79 – B
 - iii. Between 60 and 69 – C
 - iv. Between 50 and 59 – D
 - v. Below 50 – E

Task

The program should then display each student's Name, Total marks and the Average grade.

Using a pseudo code and a flowchart, write an algorithm that shows the design of the program.

14 marks

QUESTION 4 –

20 MARKS

- a) Explain arithmetic and relational operators in C language, and how their operations can be performed to a file? 6 marks
- b) Explain the importance *compiling* and *testing* in programs when handing them over to the users 4 marks
- c) The following standard library functions in c programming are critical when writing codes explain their roles
- i. Printf ()
 - ii. Scanf ()
- d) Describe three errors in programming. 6 marks

Question 5 – (20 marks)

- a) Explain any THREE reasons for algorithm analysis is critical when developing a program. 6 marks
- b) Define the following terms as used in computer programming.
- (i) Compiler 2 marks
 - (ii) Interpreter 2 marks
 - (iii) Assembler 2 marks
- c) Declare the following in c language:
- i) A two-dimensional array 2 marks
 - ii) A local variable to hold your age 2 marks
- d) What are the advantages of a translator in programming? 2 marks
- e) A program is required to read in three numbers from the user then displays the greatest of the three numbers.

Required:

- i. Draw a flow chart to show the sequence of steps.
- ii. Write a C program that implements the above algorithm 4 marks