

FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2024 1 EXAMINATION

COURSE CODE: CIT301

COURSE TITLE: STRUCTURED PROGRAMMING

COURSE CREDIT: 3 UNITS

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS

Q1.

(a) Differentiate between a function and a procedure?

2 marks

(b) List any 10 keywords in C?

5 marks

(c) Describe 4 elements of structured programming?

4 marks

(d) You are invited by a social works group to automate the cleaning of a client's kitchen. Using the first four phases of program development and respective tools, practically illustrate this process.

14 marks

Q2.

(a) In a table distinguish using 4 characteristics, structured and unstructured programming?

8 marks

(b) Discuss 5 programming mistakes that can trigger semantic/logic errors?

5 marks

(c) List 4 advantages of assembly languages?

2 marks

Q3.

(a) What is an expression? Give 2 examples.

5 marks

(b) List 6 operators used in C programming language?

3 marks

(c) Given the mathematical expression: $S + 3 \times Y - 1$, where $S = 5$ and $Y = 34$. Reconstruct the expression in C format and evaluate it. Reconstruct the express such that the result will be 271.

4 marks

(d) With a diagram, classify control statements?

3 marks

Q4.

(a) Differentiate between if and if else statements in C programming language using diagram ONLY.

4 marks

(b) Write a sample C code for illustrating a function that accepts two arguments, and returns values.

4 marks

(c) For each segment describing the basic structure of a C program below, give an example to qualify each segment?

Documentation section [Used for Comments]
Link section
Definition section
Global declaration section [Variable used in more than one function]
main() { Declaration part Executable part }
Subprogram section [User-defined Function] Function 1 Function 2 : : Function n

7 marks

Q5.

(a) Write syntax segments illustrating the **switch** and **if else if** statements in C? Give examples?

10 marks

(b) Write a C function to multiply the series: -10, -20, -30, ..., n

5 marks

Q6.

(a) Write a simple class to prepare a dish?

6 marks

(b) Why is the main program in C compulsory? Construct the structure of the main program?

6 marks

(c) List 3 requirements of a function prototype?

3 marks