NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCES
DEPARTMENT OF COMPUTER SCIENCE

COMPUTER APPLICATIONS AND PROGRAMMING

SCS 1212

Examination Paper

MARCH 2025

This examination paper consists of 4 pages

Time Allowed:	3 hours
Total Marks:	100
Examiner's Name:	Mr. K. G. Mahute
External Examiner:	Dr. C. Gorimbo

INSTRUCTIONS

1. Answer any four (4) questions

2. Each question carries 25 marks

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
TOTAL FOR ANY FOUR QUESTION	100

QUESTION ONE

(a). Identify the following OOP concepts and give appropriate examples on each.

   (i). Derived Class   [5]

   (ii). Data hiding   [5]

   (iii). Polymorphism   [5]

   (iv). Inheritance   [5]

(b). Using a flow-chart, draw an algorithm to add two numbers   [5]

QUESTION TWO

(a). Describe the following functions of an operating system.

   (i). Network Management   [5]

   (ii). I/O Management   [5]

   (iii). File Management   [5]

   (iv). Process Management   [5]

(b). Write a java program that computes average of five numbers   [5]

QUESTION THREE

(a). Describe a software application package that is used in your line of work (Geologist/ Civil & Water Engineer) at Professional level. Describe its application and how it is used.   [15]

(b). In programming, there are two programs used to execute the source code. These programs are called Interpreter and Compiler. Compare and contrast the two programs.   [10]

QUESTION FOUR

(a). Write a java program that automates the grading of Final year project marks given the following ranges in Percentage. DISTINCTION 75 and above , 65-74 is 2.1, 60-64 is 2.2, 50-59 is Pass and below 50 is FAIL [20]

(b). What is an array in programming? Give a code snippet of declaration of a 2D array of five whole numbers on each. [5].

QUESTION FIVE

(a). Discuss the following terms used in software development and provide in-depth details.

(i). Software outsourcing. [10]

(ii). Software insourcing. [10]

(b). A school requires you to develop software that displays numbers from 1-100 to the young learners. Write a java program using any one of the three loops. [5]

END OF QUESTION PAPER