



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

COMPUTER APPLICATIONS AND PROGRAMMING

SCS 1212

Examination Paper

OCTOBER 2024

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). Class [5]

(ii). Encapsulation [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 calculates average of five numbers [5]

QUESTION THREE

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

[15]

(b). List and describe briefly any five benefits of OOP programming.

[10]

QUESTION FOUR

(a). Write a java program that automates the grading of examination 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. [5].

QUESTION FIVE

(a). Identify the following types of software and provide in-depth details.

(i). Off-the shelf Software. [10]

(ii). Customized Software. [10]

(b). Write a program, using java, that displays numbers from 40-60:
[5]

END OF QUESTION PAPER

