



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

**VISUAL PROGRAMMING CONCEPTS AND  
PROGRAMMING  
SCS 1206**

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**

