



DIPLOMA IN COMPUTER STUDIES
TQF LEVEL 6 EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATIONS

SITTING: NOVEMBER/DECEMBER 2023

SUBJECT: ADVANCED PROGRAMMING

TIME: THREE (3) HOURS

TOTAL MARKS: 100

PASS MARK: 50

INSTRUCTIONS

1. Write your examination number and National Registration Card number on the answer Booklet provided. Ensure to append your signature in the space provided on the answer booklet.
2. Write your answer **SCRIPT SERIAL NUMBER** on the examination register provided and the entry slip.
3. There are **SEVEN (7)** questions in this paper.
4. Attempt any **FIVE (5)** questions of your own choice.
5. All questions carry equal marks.
6. Cell phones and programmable calculators are **NOT** allowed in the examination room.

DO NOT TURN THIS PAPER UNTIL YOU ARE TOLD TO DO

QUESTION 1 ✓

- a) With the use of examples, explain the meaning of Artificial Intelligence (AI) and its application in real life. (10 marks)
- b) State **three (3)** advantages and **two (2)** disadvantages of using class, responsibility and collaboration-based modelling. (10 marks)

Total (20 marks)

QUESTION 2 ✓

- a) Distinguish between stacks and queues. (8 marks)
- b) Explain the concept of hashing. (6 marks)
- c) State three **(3)** types of arrays. (6 marks)

Total (20 marks)

QUESTION 3 ✓

Describe the following concepts:

- a) Methods (4 marks)
- b) Properties (4 marks)
- c) Classes (4 marks)
- d) Objects (4 marks)
- e) Message passing (4 marks)

Total (20 marks)

QUESTION 4

Explain the following types of polymorphism:

- a) Static (4 marks)
- b) Dynamic (4 marks)
- c) Inclusion (4 marks)
- d) Ad hoc (4 marks)
- e) Parameter (4 marks)

Total (20 marks)

QUESTION 5

a) With the aid of a diagram, describe **five (5)** parts of a compiler. (10 marks)

b) Explain the following Microsoft Programs:

i) Word

(2 marks)

ii) Excel

(2 marks)

iii) Power point

(2 marks)

iv) Publisher

(2 marks)

v) Access

(2 marks)

Total (20 marks)

QUESTION 6

a) Define the term 'language translators'.

(2 marks)

b) Explain **five (5)** advantages and **four (4)** disadvantages of three (3) language Translator programs. (18 marks)

Total (20 marks)

QUESTION 7

Explain the following terms:

a) Fuzzy Logic systems

(5 marks)

b) Information hiding

(5 marks)

c) Machine language

(5 marks)

d) Assembly language

(5 marks)

Total (20 marks)