

24.12.2021

TEVETA

Technical Education, Vocational and
Entrepreneurship Training Authority

DIPLOMA IN COMPUTER STUDIES

LEVEL 6 EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATIONS

SITTING: DECEMBER 2021

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. 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) List the three (3) advantages and two (2) disadvantages of using class, responsibility and collaboration based modelling. (10 marks)

[Total: 20 marks]**QUESTION 2**

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

[Total: 20 marks]**QUESTION 3**

Explain 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**

With the aid of a diagram, explain the parts of a compiler. (20 marks)

[Total: 20 marks]

QUESTION 6

- (a) Define the term 'language translators'. (2 marks)
- (b) Discuss five (5) advantages and four (4) disadvantages of three 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]