



MACHAKOS UNIVERSITY

University Examinations 2022/2023

SCHOOL OF ENGINEERING & TECHNOLOGY- TVET

FIRST TERM EXAMINATION FOR

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

MODULE II

COMPUTER APPLICATION II

DATE: 24/3/2023

TIME: 8:30 – 11:30 AM

INSTRUCTIONS TO THE CANDIDATES:

1. You should have the following for this examination:-
 - Answer booklet
2. Answer four of the six questions in this question paper.
3. All the questions carry equal marks
4. Do not write on this question paper

This paper consists of three printed pages

Candidates should check the question paper to ensure that all the pages are printed as indicated and that no questions are missing

QUESTION ONE

- a) List three applications of Artificial Intelligence as used in the world today. **(3 marks)**
- b) Discuss four properties of agent environments. **(8 marks)**
- c) Explain the following types of intelligence.
 - i. Logical-Mathematical intelligence **(2 marks)**
 - ii. Spatial intelligence **(2 marks)**

QUESTION TWO

- a) Using examples explain the following types of Rule Based Systems
 - i. Forward chaining (2 marks)
 - ii. Backward chaining (2 marks)
- b) Explain four benefits of G.I.S use in the today's world. (8 marks)
- c) Differentiate between *Perception* and *Reasoning* components of A.I and how they can be implemented. (3 marks)

QUESTION THREE

- a) Outline any four limitations of expert systems. (4 marks)
- b) Distinguish between each of the following sets of agent environments. Give an example in each case.
 - i. Dynamic and Static environments (4 marks)
 - ii. Discrete and Continuous Environments (4 marks)
- c) Artificial intelligence systems have been put in good use in most areas of ICT. However, there are some challenges associated with the use A.I powered systems. Outline two challenges that are as a result of this. (3 marks)

QUESTION FOUR

- a) Explain four components of G.I.S (4 marks)
- b) Outline three applications of Robots (3 marks)
- c) Explain the following types of Knowledge acquisition as used in A.I.
 - i. Observational Learning (2 marks)
 - ii. Perceptual Learning (2 marks)
 - iii. Episodic Learning (2 marks)
 - iv. Motor Learning (2 marks)

QUESTION FIVE

- a) Justify the statement that “Artificial Intelligence is Multi-disciplinary” (3 marks)
- b) Difference between Human and Machine Intelligence. (4 marks)
- c) Outline two challenges associated with the implementation and use of Natural Language Processing. (2 marks)
- d) Explain three challenges facing speech recognition technology. (6 marks)

QUESTION SIX

- a) Various organizations around the globe have embarked on a mission to implement A.I enabled systems. Discuss any four advantages of A.I as used in today's daily chores.
(8 marks)
- b) Explain the meaning of the abbreviation G.I.S used in computer applications.
(3 marks)
- c) Outline two ways of using GIS in each of the following.
 - i. Remote sensing (2 marks)
 - ii. Cartography (2 marks)

