



NATIONAL OPEN UNIVERSITY OF NIGERIA

PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI, ABUJA

FACULTY OF SCIENCES

2021_1 EXAMINATION

COURSE CODE: CIT 478

COURSE TITLE: ARTIFICIAL INTELLIGENCE (AI)

SET A

CREDIT: 2 UNITS

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3)

Q1a. Write extensively on the term Intelligent Agent? Give the distinction between rational agent and rational action. **(5 marks)**

b. Define the term Knowledge representation and list the main features of knowledge representation language **(5 marks)**

c. Give the Pseudocode of Generic Best First Search algorithm **(4 marks)**

d. Differentiate between a static and a dynamic environment **(4 marks)**

e. What is the advantage of using six wheels instead of four wheels in a robot? **(4 marks)**

Q2a. Differentiate between Table-based and Percept-based agents **(6 marks)**

b. What do you understand by the term Heuristics? **(5 marks)**

c. State the two (2) cases in AI searches where heuristics are needed **(4 marks)**

Q3a. (i) What is hill climbing? **(5 marks)**. (ii). Give a mathematical description of how hill climbing works **(5marks)**

c. List five (5) algorithms that are meant to solve Two-Player Games problem **(5 marks)**

4a. Explain the term Computer Vision **(4 marks)**

b. List any three (3) programming languages for artificial intelligence and itemize three (2) areas where Lisp has been used **(5 marks)**

c. State three (3) advantages and three (3) disadvantages of expert system **(6 marks)**

5a. What is Inference Engine? Explain the Two (2) major categories of Knowledge bases **(8 marks)**

- b. List any four (4) locomotion approaches implemented in robots (**4 marks**)
- c. Who is a knowledge engineer? (**3 marks**)