



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI – ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2023_2 EXAMINATIONS

COURSE CODE: CIT 474

COURSE TITLE: INTRODUCTION TO EXPERT SYSTEMS

COURSE CREDIT: 2 UNITS

TIME ALLOWED: 2 HOURS

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

QUESTIONS

QUESTION 1

- 1a. Describe the procedure for designing and building a rule editor. *(6 marks)*
- b. Indicate the year each of the following was invented. *(5 marks)*
 - i. Rete algorithm
 - ii. SMP
 - iii. CLIPS
 - iv. OPS.
 - v. Frames
- c. Categorize the following into “**ADVANTAGE**” or “**DISADVANTAGE**” of expert system:
 - (i) Degradation (ii) Timeliness (iii) Creativity (iv) Learning (v) Scope *(5 marks)*
- d. State two (2) issues that must be considered when building a natural interface for an expert system? *(4 marks)*
- e. Name five (5) distinguishing characteristics of programming languages needed for expert systems applications. *(5 marks)*

QUESTION 2

- 2a. Outline and elucidate five (5) components of Expert System *(10 marks)*
- b. Write an overview of a Knowledge Engineering Environment (KEE). *(5 marks).*

QUESTION 3



- 3a. Write down the four (4) steps involved in the execution of rule Engine? (**4 marks**)
- b. In the context of object oriented programming, name six (6) postulates of inheritance in Frame- Based experts. (**6 marks**)
- c. Explain what this expert system characteristic signifies: “**Make logical inferences based on knowledge stored.**” (**5 marks**)

QUESTION 4

- 4a. Expert systems are now in commercial and research use in a number of fields. State the fields. (**9 marks**)
- b. Describe the method a Mycin operates. (**6 marks**).

QUESTION 5

- 5a. What does the sensor stage in vision of a **Mycin** do? (**3 marks**)
- b. Enumerate extensively the components of Knowledge Engineering Environment (KEE) system. (**7 marks**)
- c. Draw the components of MYCIN system. (**5 marks**)