COURSE CODE: CIT474
COURSE TITLE: INTRODUCTION TO EXPERT SYSTEMS
COURSE CREDIT: 2 UNITS
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER TWO (2) QUESTIONS

1a. List and explain the roles of Individuals who interact with the Expert system (8 marks)
1b. Outline the components of the KEE. (6 marks)
1c. What does the sensor stage in vision of a Mycin do? (6 marks)
1d. Outline five (5) components of Expert System (5 marks)
1e. Explain five (5) of the components listed in question 1d above (5 marks)

2a. Indicate the year each of the following was invented. (8 marks)
i. PROLOG by Colmerauer and Roussel
ii. HEARSAY I (speech recognition)
iii. DaMarkov algorithm for controlling rule execution
iv. CLIPS expert system tool by NASA.
v. OPS expert system Shell by Forgy, used in XCON/R1.
vi. Frames by Minsky
vii. Rete algorithm for efficient pattern matching AI becomes commercial
    Inference Corp. Formed (releases ART expert system).
vii. CLIPS expert system tool by NASA
2b. Expert systems are now in commercial and research use in a number of fields.
    State the fields. (12 marks)

3a. Write an overview of a Knowledge Engineering Environment (KEE). (5 marks).
3b. In the context of object-oriented programming, name seven (7) postulates of
    inheritance in Frame- Based experts. (7 marks)
3c. Define KEE and give the history of its invention (8 marks)

4a. Enumerate extensively the components of Knowledge Engineering Environment
(KEE) system. (10 marks)
4b. Draw the components of MYCIN system. (5 marks)
4c. Describe the method a Mycin operates. (5 marks).

5a. Categorize the following into "ADVANTAGE" or "DISADVANTAGE" of expert
    system:
i. Degradation (ii) Timeliness (iii) Creativity (iv) Learning (v)Scope (5 marks)
5b. Explain what this expert system characteristic means: "Make logical   inferences
based on knowledge stored." (4marks)
5c. Enumerate seven (7) distinguishing characteristics of programming languages
    needed for expert systems applications. (7 marks)
5d. State four (4) Natural language interface (4 marks)