



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**  
**FACULTY OF SCIENCES**  
**COMPUTER SCIENCE DEPARTMENT**  
**SEPTEMBER 2020\_1 EXAMINATIONS**

**CIT 474 – Introduction to Expert Systems**

**Credit: 2 Units**

**Time Allowed: 2 Hours**

**INSTRUCTIONS: Answer Question 1 and three (3) Others.**

- 1a). i. Give two (2) different definitions of Expert System. **(3 marks)**  
ii. With the aid of a well-labeled diagram, briefly explain the components of an Expert System. **(3 marks)**
- 1b). i. Outline eight (8) Expert System application areas. **(4 marks)**  
ii. Identify a Conversational Speech Interfaces? **(1 marks)**
- 1c). i. Distinguish six (6) characteristics of programming languages needed for expert systems work. **(3 marks)**  
ii. MYCIN is an expert system comprised of two major components. Briefly explain them. **(2 marks)**
- 1d). i. Draw the Blackboard model. **(2 marks)**  
ii. Explain the following terms associated with Frame Base Expert System. **(4 Marks)**  
a. Frame  
b. Slot  
c. Attribute  
d. Table  
iii. Analyse a shell? **(3 marks)**
- 2a). Give five (5) advantages of an expert system. **(10 Marks)**  
2b). How can you describe knowledge engineering. **(5 marks)**
- 3a). Expert systems have many characteristics?, in which “Domain-Specific” is one of them?. “Domain-Specific” means what? **(4marks)**  
**3b) Give** (5) disadvantages of an expert system. **(5 marks)**  
3c). Systems performance in speech recognition can be affected by a number of factors. Identify three (3). **(6 marks)**

4a). Outline six (6) distinguishing characteristics of programming languages needed for expert systems work. **(6marks)**

4b). Summarize procedural Languages **(9 marks)**

5a). Explain briefly the following.

- Knowledge Base **(2marks)**
- Reasoning Engine **(2marks)**
- Knowledge Acquisition subsystem **(2marks)**
- Explanation subsystem **(2marks)**
- User Interface **(2marks)**

**(Total 10 marks)**

5b). In a point, MYCIN expertise lies in what domain? **(5 marks)**