



**NATIONAL OPEN UNIVERSITY OF NIGERIA,
PLOT 91, CADASTRAL ZONE, UNIVERSITY VILLAGE, JABI – ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2023_1 POP EXAMINATION.**

COURSE CODE: CIT474

COURSE CREDIT: 2

COURSE TITLE: INTRODUCTION TO EXPERT SYSTEMS

TIME ALLOWED: 2 HOURS

INSTRUCTIONS: ANSWER QUESTION (1) AND ANY OTHER TWO (2) QUESTIONS

- 1a. Name and briefly describe how expert systems can be employed in the following fields: (12marks)
- i. Teaching
 - ii. Cloning
 - iii. Treating cancer patients
 - iv. Devising attack strategies
- 1b. A common expert system scheme that has found application in various spheres of life is the blackboard approach. Write down ten (10) specific areas where they have been applied. (10marks)
- 1c. Give three reasons to support the answer you have provided for 1a. (3 marks)
- 1d. State any five (5) drawbacks of an expert systems. (5marks)
- 2a. Enumerate any five benefits of blackboard architectures (5marks)
- 2b. Within the context of an expert systems list and describe the generic components of a shell (10marks)
- 2c. State the distinction between the forward and backward chaining (5marks)
- 3a. Write down three (3) good reasons that justify the cost-effectiveness of expert systems when compared to human experts. (9marks)
- 3b. Exemplify this distinction in terms of studying and passing her exams for the deep knowledge. (6marks)
- 3c. Explain expert system in the content of Expert System Interfaces (5marks)
- 4a. Write short note on knowledge engineering (5marks)
- 4b. Enumerate the two major components of Mycin expert system (3marks)
- 4c. Differentiate between Tacit and Explicit knowledge (4marks)
- 4d. State Three (3) disadvantages of Semantic nets (3marks)
- 4e. Explain expert system architecture in the content of Inference Engine (5marks)
- 5a. Enumerate five (5) factors in selecting an expert system or expert based tool (5marks)
- 5b. Give a concise description of the following terms within the context of expert systems:
- i. Grammar (2marks)
 - ii. Shell (2marks)
 - iii. Natural Language Interface (2marks)
- 5c. Enumerate any five drawbacks of blackboard architectures (5marks)
- 5d. Exemplify this distinction in terms of Lola studying and passing her exams for the shallow knowledge. (4 marks)