NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
JUNE/JULY EXAMINATION

COURSE CODE: CIT474
COURSE TITLE: Introduction to Expert Systems (3 units)
TIME ALLOWED: 3hrs
INSTRUCTION: Answer any **five (5)** questions.

1a. State the form of knowledge represented below:

   IF he has a shave
   THEN he will look smart

                                                                    (2 marks)

1b. Give a brief description of each of the following terms in the
    context of expert systems:

   i.   Class   )
   ii. Slot   )
   iii. Facet   ) 3 marks each
   iv. Frame   )

                                                                    (12 marks)

                                              **[Total = 14
                                              marks]**

2a. Explain the procedure for designing and building a rule engine.
    (10 marks)

2b State or Mention 2 common 'Rule Actions' in expert systems.
        (4 marks)

                                              **[Total =
                                              14marks]**

3. Give a brief description of each of the following:

   a. MYCIN   )
   b. Speech Synthesizer   )
   c. Natural Language   ) 3 marks each

d. Working Memory   )

(12 marks)

3e. Specify the major means through which users communicate with expert systems.
(2 marks)

[Total = 14 marks]

4a. Expert systems are said to be essentially interactive systems. Explain. (6 marks)

4b. Mention 2 common forms of inferences and state their differences. (8 marks)

[Total = 14 marks]

5. List and describe the components of a shell. Use a well-labelled diagram to illustrate your points.

[Total = 14 marks]

6. Identify the main role of each of the following key words within the context of the Explanation Facility:

a. TRACE
b. WHY   ) 3 marks each
c. HOW   )
d. WHAT-IF   (12 marks)

6e. Explain the term 'grammar'.   (2 marks)

[Total = 14 marks]

7a. State the specific roles of individuals who interact with expert systems. (12 marks)

7b. Give a concise description of how expert systems resolve uncertainties.   (2 marks)

[Total = 14 marks]