

## Higher Information Systems

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### 2007P q.28c Expert Systems Component Parts

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REHAB is a rule-based expert system that is being developed for use in social security offices. The expert system will be used to refer recipients of social security disability allowance to employment rehabilitation services.

c. The knowledge engineer must decide whether to represent the domain knowledge as backward chaining or forward chaining rules.

(i). Suggest **two** factors would be used to determine the type of inference engine suitable for the REHAB expert system. Justify your answer by explaining the relevance of each factor you suggest.

(ii). Give **one** reason why the developers of the REHAB expert system may decide to incorporate both backward and forward chaining. **(3)**

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### 2008P q.28d Expert Systems Component Parts

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An expert system can be forward or backward chaining.

(i). How does the inference engine in a backward chaining expert system operate? **(2)**

(ii). The following information is used to identify some mountain features.

Produce backward rules that represent the knowledge contained in statements A and B above. **(2)**

A	An arête is a thin ridge of rock between two valleys
B	A plateau is a raised area of land consisting of a flat region

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### 2009 28b Expert Systems Component Parts

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The diagram below represents a screen from the expert system used to identify the coins. Text generated by the expert system is shown in normal style and user responses in bold style.

Describe the role played by each of the components of this expert system in producing the screen below.

Is the metal silver?  
?? **yes 60**

Is the picture a chariot?  
?? **yes 70**

Advice:  
Coin is a circllet 54.

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### 2009P q.24 Expert Systems Component Parts

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CallsforYou sell mobile telephones and call plans. The company recently introduced an expert system to assist customers in selecting the call plan to best suit their needs.

- a. State **two** cost factors CallsforYou would have considered before proceeding with the development of the expert system. **(2)**
  
- b. Describe the **three** components of an expert system. **(6)**