

Scenario 1**Questions 1, 2, 3, 4 and 5**

International Exploration & Mining (IEM) is a multi-national company specialising in mineral prospecting.

Fergal is employed by the company as an inspector to visit and inspect geological sites in search of deposits of mineral ores.

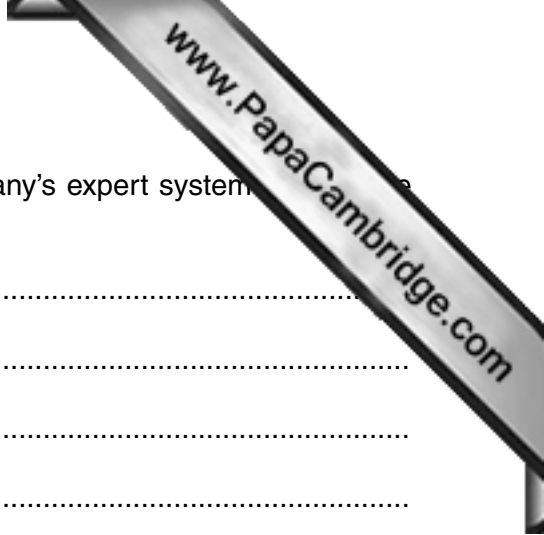
Fergal takes a laptop computer when visiting a potential site and uses it to record his findings.

IEM has created an expert system for use by their inspectors and geologists who can access it using the Internet and the company network.

He uses his own knowledge and the company's expert system to predict the likelihood of a particular mineral ore being found in the location.

Fergal connects the laptop to the company network using the Internet to send back his findings and to keep in regular contact with the company and other inspectors.

The company also uses Fergal's findings and those of its other inspectors and geologists to construct computer models to predict where mineral ore deposits might be found.



1 (a) Describe how the facts in the knowledge base of the company's expert system have been obtained.

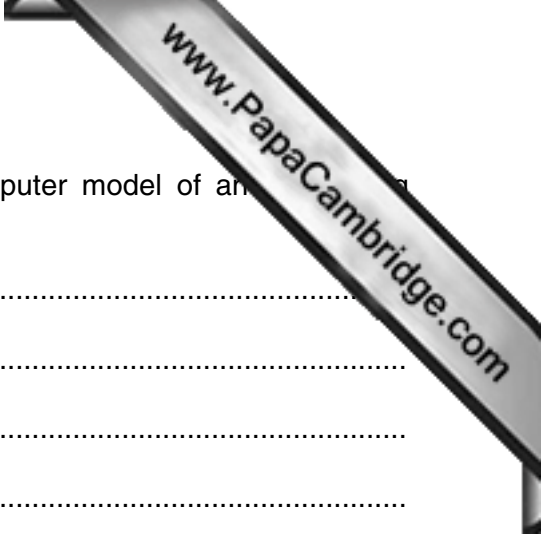
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(b) Give **two** examples of the input data that would be needed from Fergal for use by the company's expert system.

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.....[2]

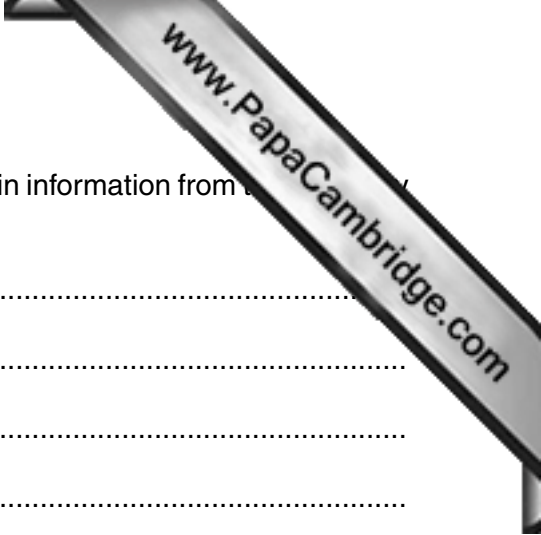


3 Describe **three** steps that are taken when constructing a computer model of an area to be prospected.

- 1
- 2
- 3[3]

4 Describe the purpose of these network components in the company network.

- (a) hub[2]
- (b) switch[2]
- (c) wireless access point[2]
- (d) firewall[2]



5 (a) Explain how each protocol shown below could be used to obtain information from a network.

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(b) Describe **two** ways Fergal can ensure that his findings are kept secure while being transferred to the company.

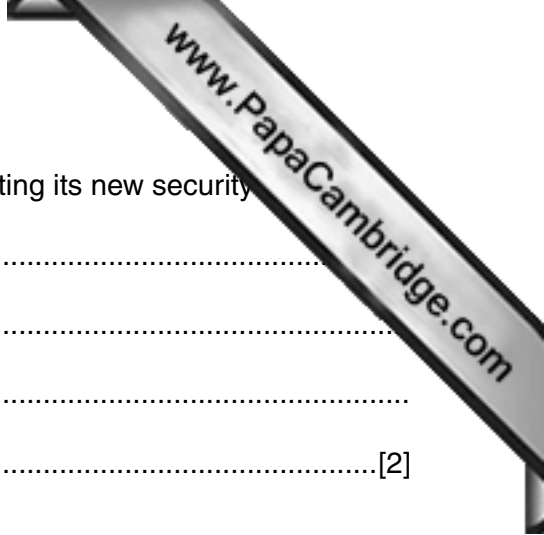
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Scenario 2
Questions 6, 7 and 8

Many people use online booking systems, online auctions and online transaction services.

A government agency has been set up to attempt to reduce the antisocial use of ICT and computer fraud.

It is developing new security software to try to make people more confident about the security of their personal data when using these services.



8 Describe how timeline software would help the agency when creating its new security

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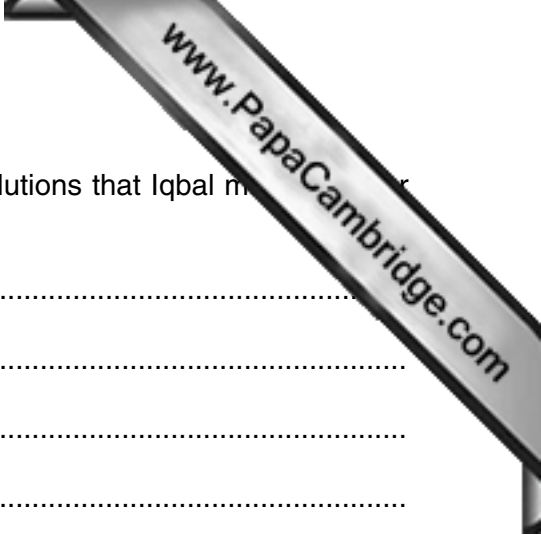
Scenario 3
Questions 9, 10 and 11

A regional government has asked Iqbal (a website designer), to create a new website which will include the following facilities for:

- an online focus group
- weblogs
- wikis.

A new road is to be built through the region. The website facilities will allow citizens to register their details and to have more influence on their political representatives during the building of this road.

Before the website is implemented, Iqbal must be confident that there are no security issues and must appoint moderators for the online focus group.



9 Describe **three** different security problems and **three** different solutions that Iqbal might implement before implementing the website.

Problem 1

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Solution 1

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Problem 2

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Solution 2

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Problem 3

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Solution 3

.....[6]

10 Describe how, other than using focus groups, political representatives could use the Internet to communicate with, and gather feedback from, citizens.

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