



**INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY
HIGHER LEVEL
PAPER 2**

Tuesday 16 May 2006 (morning)

2 hours

INSTRUCTIONS TO CANDIDATES

- Do not open this examination paper until instructed to do so.
- Answer three questions.

Answer **three** questions.

Area of Impact: Business and employment

1. In 2003, 42.2 million Americans booked their travel online (Greenspan 2004).

(a) Describe the meaning of the term URL in the context of online travel. **[2 marks]**

(b) Describe **two** different ways that IT could be used to authenticate a passenger's identity when boarding a plane. **[4 marks]**

(c) Describe **two** advantages of Internet access for a travel agent when making customer bookings. **[4 marks]**

(d) Passengers are often worried about booking travel online.

Discuss privacy, security and reliability concerns when passengers book their trips online. Evaluate these concerns. **[10 marks]**

Reference:

Greenspan, R. 2004, *Internet high on travel destinations*, <http://www.clickz.com/stats/markets/travel/article.php/3304691> [17 July 2004]

Area of Impact: Education

2. Lakeside International High School has a computerised library catalogue and borrowing system. Students can access the catalogue from inside the library or via the school’s Intranet.
- (a) Identify **three** tables that could be part of the library’s relational database. *[3 marks]*
 - (b) The librarian needs to produce a list of drama books that Year 12 students have not returned on time. Describe the query needed. *[3 marks]*
 - (c) Describe **two** policies that should be implemented for backing up the library’s data. *[4 marks]*
 - (d) Discuss **three** advantages of this computerised school library system compared with a manual system. Evaluate these advantages. *[10 marks]*

Area of Impact: Health/Science and environment

3. Robotic Surgery has opened the possibility for telesurgery, where a doctor may perform surgery on a patient who is not in the same location. Doctors may now perform operations on patients located in different countries without having to travel.
- (a) Describe the role of a computer program in a surgical robot. *[2 marks]*
- (b) Describe **two** sensors used in robotic surgery. *[4 marks]*
- (c) Explain the terms **WAN** and **bandwidth** in the context of telesurgery. *[4 marks]*
- (d) Issues of concern related to robots include the following:
- reliability
 - cultural awareness
 - cost
 - privacy
 - legal implications
- Discuss **three** of the above issues that may arise when the possibility of performing telesurgery is considered. Evaluate these issues. *[10 marks]*

References:

How Stuff works, <http://electronics.howstuffworks.com/robotic-surgery1.htm>

Intuitive Surgical, http://www.intuitivesurgical.com/products/da_vinci.html

Area of Impact: Business and employment/Politics and government

4. Home computers with an Internet connection are easy targets for malicious attacks.
- (a) Describe **two** types of malicious attacks. *[4 marks]*
 - (b) Describe **two** ways in which information in a computer can be protected from damage caused by malicious attack. *[4 marks]*
 - (c) Explain why some companies release software that invades people’s computers. *[4 marks]*
 - (d) In the United States, legislation is under consideration that will allow the government to ban the use of software such as spyware, that invades people’s computers.

Discuss an economic issue and a privacy issue that the government should recognize when considering the implementation of this legislation. Evaluate these issues. *[8 marks]*
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