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

Friday 14 November 2008 (morning)

2 hours

INSTRUCTIONS TO CANDIDATES

• Do not open this examination paper until instructed to do so.
• Section A: answer all parts of the question.
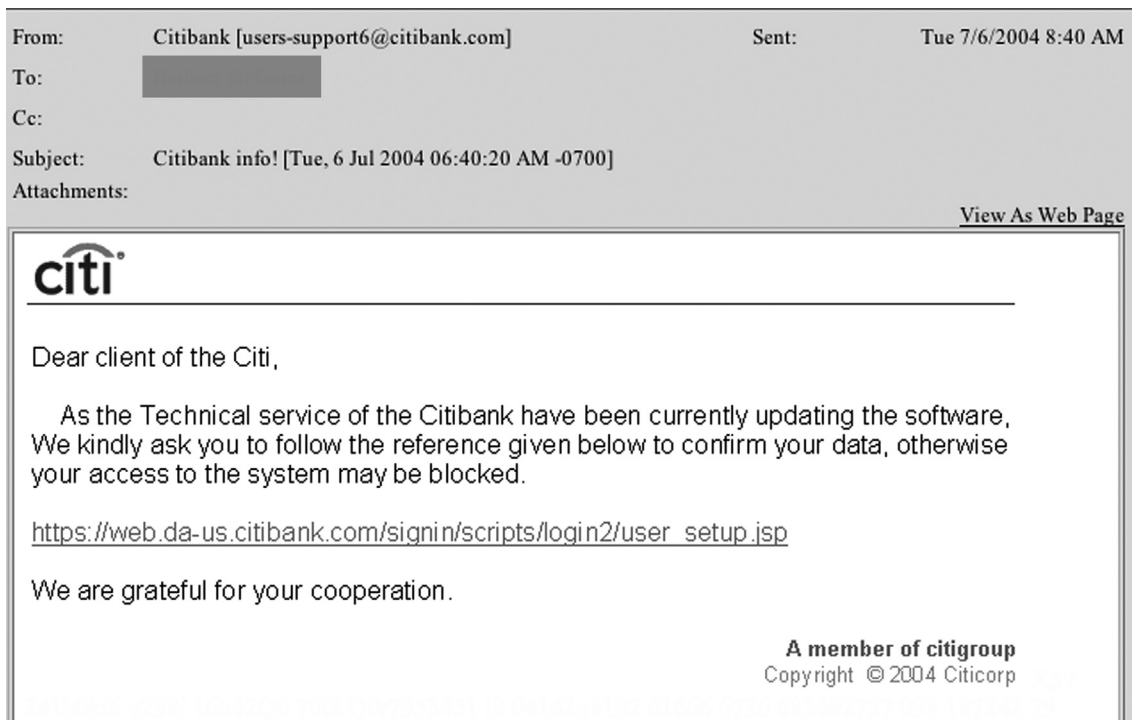• Section B: answer two questions.

SECTION A

*Answer **all** parts of the question.*

Area of impact: Business and employment

1. Bank customers can access their bank accounts through an Automatic Teller Machine (ATM) or by using online banking services. However, both methods of access have the risk that criminals could gain unauthorized access to their bank account details.

    A *Citibank* customer received the following e-mail. This is an example of phishing, the practice of trying to find out customers' bank account information through fraudulent e-mails.

From:	Citibank [users-support6@citibank.com]	Sent:	Tue 7/6/2004 8:40 AM
To:			
Cc:			
Subject:	Citibank info! [Tue, 6 Jul 2004 06:40:20 AM -0700]		
Attachments:			

View As Web Page

citi

Dear client of the Citi,

   As the Technical service of the Citibank have been currently updating the software, We kindly ask you to follow the reference given below to confirm your data, otherwise your access to the system may be blocked.

https://web.da-us.citibank.com/signin/scripts/login2/user_setup.jsp

We are grateful for your cooperation.

A member of citigroup
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[Source: http://www.ratemyteachers.co.uk, 10 March 2008. Used with permission.]

(a) Identify **two** ways that this e-mail could trick *Citibank* customers into providing sensitive information.   *[2 marks]*

(b) Describe the steps used by the bank's IT system to authorize a customer's access to their bank account when using a card at an ATM.   *[4 marks]*

(c) Explain **two** actions that could be taken by the bank to assist customers in identifying fraudulent e-mails.   *[4 marks]*

(d) To what extent have ATMs **and** online banking changed the way that people manage their finances?   *[10 marks]*

SECTION B

*Answer **two** questions.*

Area of impact: Education

2.   The web site *RateMyTeachers* has been created with free access that allows students to rate their teachers anonymously and add comments about them. The information is collected in a database that can be publicly viewed to display the ratings for all schools or to show the ratings and comments for individual teachers. A large number of schools have blocked access to this web site.

[Source: http://www.ratemyteachers.co.uk, 10 March 2008]

(a)   The location for the web site is http://www.ratemyteachers.co.uk/index.asp

   (i)   Identify the protocol used to access this web site.   *[1 mark]*

   (ii)   Identify the name of the file being accessed.   *[1 mark]*

(b)   *RateMyTeachers* requests personal information from the students such as name, address, birth date and gender when they register for accounts. Describe **two** ways that additional information can be collected about students' use of the web site without them being aware of it.   *[4 marks]*

(c)   Explain **two** situations where *RateMyTeachers* might be required to pass information entered on the web site to either school or legal authorities.   *[4 marks]*

(d)   "A web site allowing children to rate their teachers may sound harmless but it could ruin careers". To what extent do you agree with this statement?   *[10 marks]*

Area of impact: Health

3. Dr James is one of three doctors in a UK general practice. She uses a computer during consultations with patients and has found it has been beneficial in a number of ways. This computer is part of a small client/server LAN at her practice.

However, in contrast, most doctors in hospitals do not use computers in their work.

[Source: http://www.bmj.com/cgi/content/full/325/7372/1086?etoc, 10 March 2008]

(a) Identify **two** uses for a computer system during a consultation between Dr James and a patient. *[2 marks]*

(b) Describe **two** threats to the integrity of the data held on the LAN at Dr James' general practice. *[4 marks]*

(c) Explain the relationship between client computers and a server in a client/server LAN. *[4 marks]*

(d) Discuss reasons why the uptake of IT systems has been greater in small general practices than in large hospitals. *[10 marks]*

Area of impact: Arts, entertainment and leisure

4. The availability and use of online casino games such as roulette, blackjack and slot machines has increased on a worldwide basis.

(a) Identify **two** methods of payment used by customers in order to be able to place their bets with an online gambling casino. *[2 marks]*

(b) Describe **two** IT methods used by online casinos to attract new customers to online gambling. *[4 marks]*

(c) Explain why a casino customer would prefer to use an online casino instead of gambling in a traditional casino. *[4 marks]*

(d) Discuss the concerns that governments would have regarding the increase of online gambling. *[10 marks]*

Area of impact: Science and the environment

5. With changes in the world's weather, more extreme events are occurring. If the magnitude of, and areas affected by these events can be predicted, action can be taken to reduce the damage. It is possible to predict many of these events by using data initially collected at weather stations. This data is then transferred and added to a weather database and can be used in computer models and simulations.

By collecting weather data over long periods of time, the climate of these locations can also be established. Computers can be used to map the current weather patterns against the climate to see whether the climate is changing. From this information, governments can take action to cope with future climate changes such as by improving flood defences.

(a) Identify **two** ways that data collected in a weather station could be transferred to the weather database. *[2 marks]*

(b) Describe the differences between a computer model and a computer simulation. *[4 marks]*

(c) Explain why the path of a hurricane may not match the prediction from the computer simulation. *[4 marks]*

(d) Evaluate how the use of different IT systems could help a country prepare against natural disasters. *[10 marks]*

Area of impact: Politics and government

6.   The UK government has recently introduced biometric passports. These contain a RFID (Radio Frequency Identification) chip which stores biometric and personal data about the passport holder. Currently, the biometric data is a photograph submitted by the applicant, from which a set of facial measurements can easily be obtained. The chip is connected to an antenna which allows the data to be read by a device when brought close to it. All the data stored on the chip is also printed on one of the pages of the passport.

There are strict rules about the characteristics of a photograph that can be used in a new passport. For example, the size of the image must conform to the standards shown in the diagram:
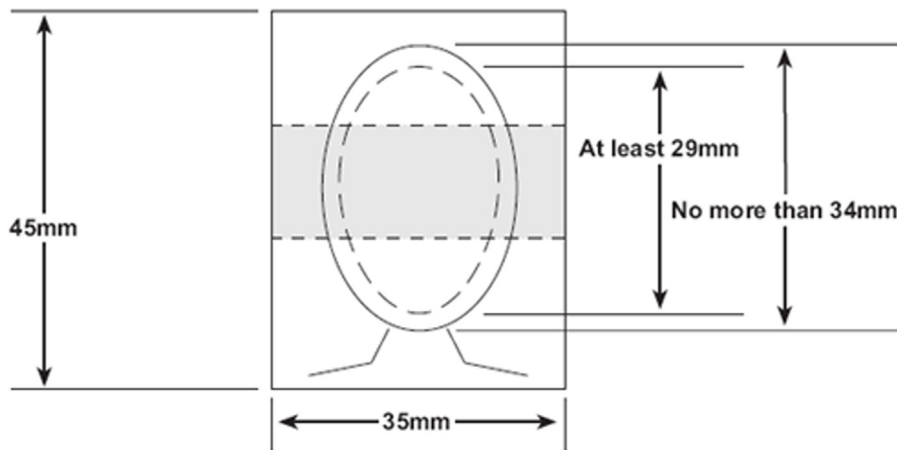
[Reproduced under the terms of the Click-Use Licence]

(a)   Identify **two** reasons why the new passport photographs must conform to strict regulations.   *[2 marks]*

(b)   Describe the steps that could be taken by an IT based check-in system to verify that a person is the authentic owner of a particular passport.   *[4 marks]*

(c)   Explain how the use of the biometric passports could speed up checking in at airports.   *[4 marks]*

(d)   Discuss possible objections to the introduction of biometric passports.   *[10 marks]*