

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

Tuesday 25 May 2004 (morning)

2 hours

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**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. Software is often installed on networked computers in business offices to monitor the actions of office workers.
  - (a) Identify **four** actions of office workers that can be monitored using software. *[4 marks]*
  - (b) Explain **three** reasons used by employers to justify why employees should be monitored. *[6 marks]*
  - (c) Discuss **three** ethical **and/or** social considerations associated with office worker monitoring. Evaluate your arguments. *[10 marks]*

Total: *[20 marks]*

**SECTION B**

Answer **two** questions.

**Area of Impact: Education**

2. Libraries are offering more services as a result of information and subscription sources being available on the Internet. Some libraries use automated services and employees to respond to requests submitted online 24 hours a day.
- (a) Identify **two** different information sources that are available to libraries by subscription on the Internet. *[2 marks]*
  - (b) Describe **two** problems associated with students' over reliance on Internet sources for research. *[4 marks]*
  - (c) Describe **two** reasons why individuals would make requests to libraries rather than find the information for themselves through Internet sources. *[4 marks]*
  - (d) Discuss **three** ethical **and/or** social impacts on public libraries, that result from an increased demand for assistance in finding information. Evaluate your arguments. *[10 marks]*

Total: *[20 marks]*

**Area of Impact: Health**

3. As part of the Human Genome Project a collection of 500 000 DNA samples is to be gathered from the British population and stored in a relational database.
- (a) Identify **two** different files that would be part of this relational database. *[2 marks]*
  - (b) Describe **two** reasons why the database must be relational in this situation. *[4 marks]*
  - (c) Explain **two** health advantages that will result from this program. *[4 marks]*
  - (d) Discuss **two** concerns arising from the project. Evaluate the importance of each one. *[10 marks]*

Total: *[20 marks]*

**Area of Impact: Arts, Entertainment and Leisure**

4. Peer-to-Peer (P2P) technology has replaced accessing files on central servers. It has made possible the sharing of music files across the Internet.
- (a) Identify **two** software technologies necessary for sharing or using music files. *[2 marks]*
  - (b) Describe **one** alternative information technology, other than P2P, that could be used for sharing commercial music files and evaluate the ethics of the method. *[4 marks]*
  - (c) Describe **two** advantages to the artist of having their music available using P2P technology. *[4 marks]*
  - (d) Discuss **three** social **and/or** ethical disadvantages involved with the distribution of music files using P2P technologies. Evaluate your arguments. *[10 marks]*

Total: *[20 marks]*

**Area of Impact: Science and the Environment**

5. Many individuals and businesses rely on accurate weather forecasts and knowing in advance when severe weather conditions are developing.
- (a) Identify **two** pieces of information needed by a computer model to forecast tomorrow's weather. *[2 marks]*
  - (b) Describe **two** advantages of using computers to predict the weather. *[4 marks]*
  - (c) Describe **two** reasons why it is impossible for a computer model to predict the weather with total accuracy. *[4 marks]*
  - (d) Discuss **three** issues related to providing weather forecasts to the community. Evaluate your arguments. *[10 marks]*

Total: *[20 marks]*

**Area of Impact: Politics and Government**

6. Governments store information about visitors on computers. People often protest against the storage and availability of this information.
- (a) Outline **two** sources that can provide this information. [2 marks]
  - (b) Describe **two** reasons given by governments for collecting personal information. [4 marks]
  - (c) Define *data mining* and *data matching*. Give an example of each, using government databases. [4 marks]
  - (d) Discuss **three** social **and/or** ethical concerns which the individuals should have about personal data being stored in government databases other than the example of data matching cited in part (c). Evaluate your arguments. [10 marks]

Total: [20 marks]

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