



IB DIPLOMA PROGRAMME
PROGRAMME DU DIPLÔME DU BI
PROGRAMA DEL DIPLOMA DEL BI

N06/3/ITGSX/SP2/ENG/TZ0/XX



88065515

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

Tuesday 14 November 2006 (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. Personal Digital Assistants (PDAs), mobile phones (cell phones) and digital cameras are often connected to computer systems in order to transfer data.
 - (a) Identify **two** ways in which PDAs can communicate with computer systems. **[2 marks]**
 - (b) The term “convergence” is used to describe instances where different mobile digital devices are combined to produce one new product. Describe **two** new products where the features from different mobile digital devices are combined. **[4 marks]**
 - (c) Some people think that PDAs will eliminate the need for people to use laptop computers. Examine this argument. **[4 marks]**
 - (d) Discuss the advantages of multi function PDA equipment to businesses and their employees. Evaluate these advantages. **[10 marks]**

SECTION B

Answer **two** questions.

Area of impact: Education

2. Many schools use Information Technology (IT) to help them with administration tasks, finance and timetabling. IT is also used for maintaining pupils' records.
- (a) Identify **two** different types of software that could be used to produce an advertising brochure for the school. **[2 marks]**
 - (b) Describe **two** advantages of using spreadsheets for preparing the school budget over a paper-based system. **[4 marks]**
 - (c) Describe **two** rights that International Baccalaureate (IB) students should have regarding their personal data being stored in the school administrative system. **[4 marks]**
 - (d) The IB has developed a central database system for storing and maintaining IB student records and assessment results. Discuss the advantages of maintaining records on a centralized computer system like the one used by the IB rather than having computerized records stored within individual schools. Evaluate these advantages. **[10 marks]**

Area of impact: Health

3. Due to advances in technology it is now possible for people to seek medical advice using Information Technology (IT), rather than travelling to visit a doctor or hospital.
- (a) Identify **two** ways IT can be used to provide medical advice and information directly to people. **[2 marks]**
 - (b) A person thinks that he may have a disease called “Fibromyalgia”. Describe **two** ways in which IT-based resources may be helpful to this person. **[4 marks]**
 - (c) Describe **two** advantages of an IT medical system compared to direct consultation with a doctor. **[4 marks]**
 - (d) Many people are reluctant to use IT-based advice instead of advice direct from doctors. Discuss the concerns that they may have. Evaluate these concerns. **[10 marks]**

Area of impact: Arts, entertainment and leisure

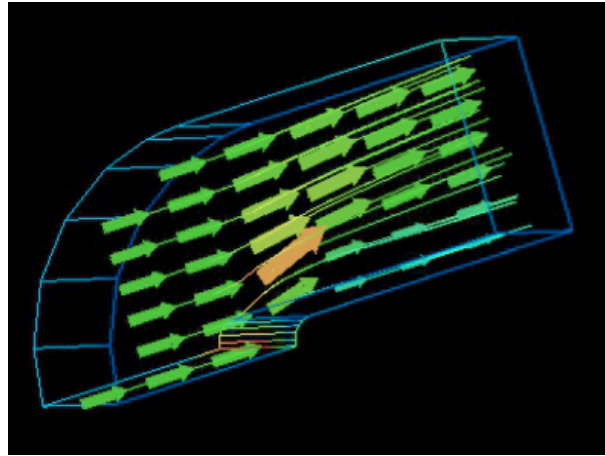
4. In January 2003, 5.9 million Europeans visited online gaming sites. It is predicted that global revenues from online gambling will reach USD 14.52 billion in 2006 (NUA 2004).
- (a) The URL for the online casino is: <http://www.casinodot.co.uk>. Identify what is meant by *http* and www.casinodot.co.uk in the above URL. **[2 marks]**
 - (b) The website <http://www.casinodot.co.uk> places cookies on user's computers. Define the term "cookie" in this context. **[2 marks]**
 - (c) Explain why the gambling site would use cookies. **[2 marks]**
 - (d) Describe **one** advantage and **one** disadvantage for customers using online casinos instead of traditional ones. **[4 marks]**
 - (e) There is a growing concern that increased availability of gambling may be harmful for particular groups of people in society. Discuss **two** possible measures that online gambling sites can use to protect vulnerable groups. Evaluate these measures. **[10 marks]**

Reference:

NUA, 2003, <http://www.nua.ie/surveys/> [18 July 2004]

Area of impact: Science and the environment

5. Designers and engineers often use simulation software together with animation techniques to demonstrate the flow of air over an aircraft wing. In the animation, the arrows move over the surfaces to represent airflow.



Adjustments can be made to the rate of airflow and the shape of the wing and the results can be immediately visualized in changes to the pattern of arrows.

- (a) Identify **two** hardware components that are necessary in order for complex simulations to be run in a short period of time. **[2 marks]**
- (b) Explain why the results of the simulation are best displayed as an airflow animation rather than as a table of calculated results. **[4 marks]**
- (c) Describe **two** other situations in which a simulation can be used in design processes. **[4 marks]**
- (d) Discuss reliability issues related to the use of simulation software for design processes. Evaluate these issues. **[10 marks]**

Reference:

“Visual and Spatial Technology Centre.” University of Birmingham. <http://www.vista.bham.ac.uk/avs-vis/examples.htm>. [31 Aug. 2005]

Area of impact: Politics and government

6. The local city council in Cardiff, Wales has created a wireless computer network (WiFi) across the city. More than 50 “hotspots” (access points) have been located in Cardiff, bringing greater Internet accessibility to residents, tourists and local businesses.

Anyone with a laptop or PDA that can connect using WiFi technology will be able to access the Internet when near a hotspot. Each hotspot can support about 15 users at a range up to about 100 metres.

Users can subscribe to the service through the city council or pay online as they use the service.

- (a) Identify **two** hardware components of a WiFi system other than the user’s computing hardware. **[2 marks]**
 - (b) Describe **two** reasons why Internet access appears to be very slow for users in some locations in the city. **[4 marks]**
 - (c) Describe **two** reasons why a business traveller, visiting Cardiff, might be unwilling to make use of the wireless network. **[4 marks]**
 - (d) Some people in Cardiff do not think that it is right to use their local taxes to finance and install a wireless network for businesses to use. Discuss **two** arguments that could be used to convince them that it is a worthwhile use of their taxes and will benefit local residents and services. Evaluate these arguments. **[10 marks]**
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