



22135512



**INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY  
STANDARD LEVEL  
PAPER 1**

Tuesday 14 May 2013 (afternoon)

1 hour 45 minutes

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**INSTRUCTIONS TO CANDIDATES**

- Do not open this examination paper until instructed to do so.
- Answer three questions. Each question is worth *[20 marks]*.
- The maximum mark for this examination paper is *[60 marks]*.

Answer **three** questions. Each question is worth [20 marks].

**1. Bank offers online services to customers**

The traditional bank *MyFastMoney* is offering new online services that customers may use to manage their accounts. In order to be able to use these new services customers need to register with the bank. After registering the bank will provide customers with a username and a password and will give the user the URL (<http://www.myfastmoney.com/index.html>) for the bank website.

One of the new services on offer for customers is EFT (electronic funds transfer). EFT is a payment method which can be used to release a payment from one account to make a deposit in another account.

- (a) (i) In the URL <http://www.myfastmoney.com/index.html> identify the following:
- protocol
  - domain name.
- [2]
- (ii) The bank has added a link at the bottom of the bank web page that says “Privacy policy”. Identify **four** statements that could be included in this policy. [4]
- (b) To enable EFT to take place the customer must log in to a secure environment using a username and password. However, many banks now use additional security measures. Analyse **two** possible additional security measures. [6]
- (c) Discuss the implications for the bank of the implementation of these new online services. [8]

## 2. Patient monitoring

A hospital is implementing a medical IT system to monitor the vital signs of patients. Monitoring of vital signs, such as body temperature, can provide health care professionals with up to date information about a patient’s medical condition, inform of unusual situations and possibly help avoid serious health consequences.

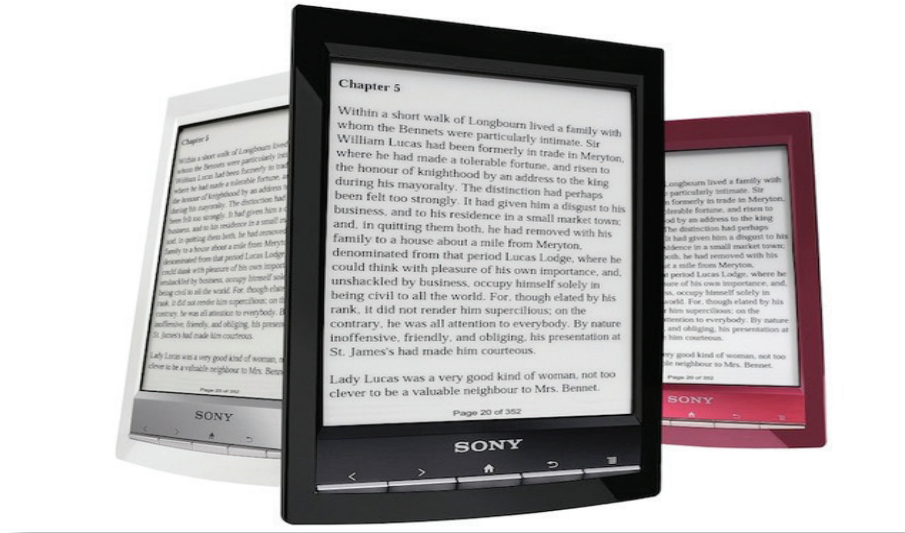


[Source: <http://sreemonitoring.com/IntellivueMP40andMP50.html>, 12 September 2011]

- (a) (i) State **two** vital signs, other than body temperature, that can be monitored using IT systems to inform doctors of the condition of a patient undergoing surgery. [2]
- (ii) Identify the steps taken by an IT monitoring system to detect when a sign or condition is abnormal and the patient requires special attention. [4]
- (b) Analyse the implications for doctors when the hospital implements new patient monitoring equipment for health care. [6]
- (c) Training will be provided by the hospital for staff to use the new IT patient monitoring system. It was decided to use a combination of online training and practical hands-on training. Justify this decision. [8]

### 3. Libraries and e-book loans

Many libraries around the world are offering electronic books for loan. In some cases you need to check via the e-book reader web page and in others you will need to be a registered member at the library and sign in with a current account into the library website.



[Source: Text: <http://www.pocket-lint.com/news/26619/how-to-loan-an-ebook>, 27 August 2009, by Stuart Miles.  
Image: [http://cdn1.sbnation.com/entry\\_photo\\_images/2117175/prs-t1\\_large\\_verge\\_medium\\_landscape.jpg](http://cdn1.sbnation.com/entry_photo_images/2117175/prs-t1_large_verge_medium_landscape.jpg)  
Used with permission]

The loan systems are able to set the length of the loan period depending on the type of book and how popular it is. The e-book is downloaded to the borrower’s e-book reader. At the end of the loan period some libraries will allow users to check out the books again just like a regular book. When the loan period has expired the book will no longer be available on the user’s reading device.

Libraries may have a limited number of licences for some e-books. Users can make a reservation for an e-book that is not currently available and when it is “returned” they will receive a notification and will be able to borrow it for the assigned period of time.

The library lending system is based on a relational database.

- (a) (i) Identify the steps a new library user must follow to log in to the library and “borrow” an e-book. [4]
- (ii) When e-books are purchased by the library it needs to record information about them in the relational database. All books require ISBN, publisher information, author and title. State **two** pieces of additional information that a library would need to record about an e-book. [2]

*(This question continues on the following page)*

*(Question 3 continued)*

- (b) (i) Some e-book readers use a proprietary file format, others use generic file formats. Explain **one** advantage for the company who produces and sells the e-books of using a proprietary format. [2]
- (ii) Explain why a relational database has been chosen as the basis of the lending system. [4]
- (c) A school library has introduced the loan of e-books. Discuss the impact on the students. [8]

**4. E-waste – recycling and carbon footprint**

*Abaco Publishing & Design* wants to reduce its carbon footprint in two ways:

- by replacing its existing electronic equipment with more energy efficient devices
- by recycling its e-waste.

The environmental manager at the company has requested information on the equipment they have at the office and is using information that *Apple Inc.* has published on its website.

The following table and graph were created using spreadsheet software.

The table lists the equipment found in the office area being evaluated (human resources).

- Cell A3 has the name of the equipment (“60 watt light bulb”).
- Cell B3 has the CO<sub>2</sub> emission for each light bulb (“48.4”).
- Cell C3 shows the number of light bulbs in the area (“8”).
- Cell D3 calculates the total CO<sub>2</sub> emission of the 8 light bulbs.

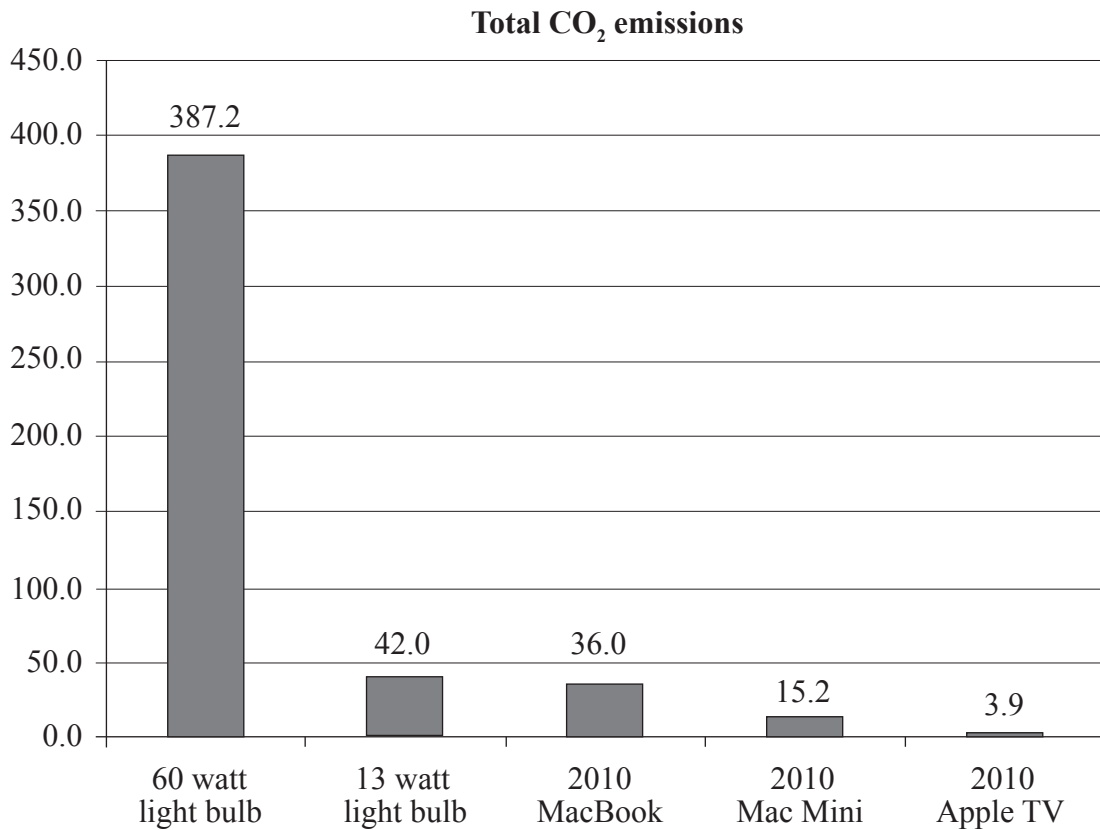
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>1</b>	<b>Area: human resources (HR)</b>			
<b>2</b>	<b>Type of equipment</b>	<b>CO<sub>2</sub> emissions (grams per unit)</b>	<b>Number available in area</b>	<b>Total CO<sub>2</sub> emissions (grams)</b>
<b>3</b>	60 watt light bulb	48.4	8	387.2
<b>4</b>	13 watt light bulb	10.5	4	42.0
<b>5</b>	2010 MacBook	9.0	4	36.0
<b>6</b>	2010 Mac Mini	7.6	2	15.2
<b>7</b>	2010 Apple TV	1.3	3	3.9
<b>8</b>	<b>TOTAL CO<sub>2</sub> emissions</b>			<b>484.3</b>

- (a) (i) State the formula needed to calculate the value in D3. [1]
- (ii) State the formula needed to calculate the value in D8. [1]

*(This question continues on the following page)*

(Question 4 continued)

- (iii) Identify the steps required by the user to produce the chart below. [4]



- (b) It is generally desirable to recycle e-waste. Explain **three** effects of the irresponsible disposal of e-waste. [6]
- (c) To what extent can a government encourage the responsible disposal and recycling of IT equipment? [8]

## 5. Blogs and social networking tools

Using social networking tools has become extremely popular and allows people to communicate and share experiences.

In the movie “Julie and Julia”, Julie decides to cook a different recipe each day and writes a blog to document her progress and share her experience.

[Source: <http://www.imdb.com/title/tt1135503/synopsis>, 12 September 2011]

- (a) (i) Define the term *blog*. [2]
  - (ii) In addition to blogs, identify **two** other types of social networking tools. [2]
  - (iii) Describe **one** way in which a social networking site can be used by family members living in different countries and wanting to share their daily experiences. [2]
  - (b) Many employers now check job applicants by viewing the information the applicants have posted on social networking sites. Analyse the benefits and risks of posting information on social networking sites. [6]
  - (c) Governments around the world have tried for years to control the internet and social networking sites claiming that this helps control illegal online activity. To what extent is this claim acceptable? [8]
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