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22105511

INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY
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PAPER 1

Thursday 20 May 2010 (afternoon)

1 hour

Candidate session number

0	0								

INSTRUCTIONS TO CANDIDATES

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Answer all the questions in the spaces provided.

0111

1. A Linux based sub-notebook is a popular type of personal computer (PC). It is much smaller than a normal laptop and has no CD drive or hard disk. Storage is achieved by the use of integral flash memory. It is much cheaper, smaller and lighter than a normal laptop. Much of the software used is open source software*.

A specification for a sub-notebook is given below.

Specifications:

CPU speed	900 Mhz
Operating system	Linux
Display size	7" (800×480)
RAM	512 MB
Flash	4000 MB
Battery life (tested)	3.4 – 4.1 hours
Weight	920g
Size (w/h/d)	225/165/35 mm

Physical Interfaces:

10/100 Mbit Ethernet

MMC/SD card reader

3 USB 2.0 ports

Wireless Interfaces:

802.11b/g

Image used with permission.

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Additional Specifications and Accessories (can vary):

Built-in camera

Microphone

Speakers

Linux

Open office

Choice of other open source software

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* open source software: software that can be freely distributed and modified by users

(This question continues on the following page)

(Question 1 continued)

(a)   Identify **two** ways in which this personal computer can communicate with   *[2 marks]*
       other devices.

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(b)   A travelling businessman has decided to take a sub-notebook PC with him
       when he is away from the office, instead of a normal laptop. Describe **two**
       disadvantages of this decision.   *[4 marks]*

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(Question 1 continued)

(c) Many consumers are now purchasing personal computers with open source software rather than commercial software installed. Explain reasons for this trend. *[4 marks]*

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(Question 1 continued)

0411

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0511

Turn over

2. An international examining organization currently uses printed examination papers with the candidates answering on lined paper. Examiners receive completed papers by post, which may take up to a week to arrive. After the examination papers are marked, the examiners enter the marks online using their own personal computers (PCs) and then return the marked papers to the examining organization by post.

The management of the examining organization is considering using an IT system to replace parts of this process. In the new system, the papers are sent to a central location and scanned. The examiners then have to install a special piece of client software onto their PCs to access and mark their papers. The scanned papers, which are in the form of bit-map images, are then made available to examiners online after they have logged on with their username and password.

The software comes with a marking toolbox which contains a tick, a cross and six other commonly used annotations such as "TV" which means "Too Vague". These tools are selected by clicking on one of them and then clicking on the paper to place the mark.

(a) Define the term *bit-map image*. *[2 marks]*

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(b) Describe the steps that may be taken in authenticating an examiner when logging on to the examining organization's IT system. *[4 marks]*

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(Question 2 continued)

    (c)   Examiners are trained in the use of the new software with an online training package. Explain **one** advantage and **one** disadvantage of using online training for this purpose.   *[4 marks]*

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3. In many cities, an information system records where buses are on the route and can display information to people waiting at the bus stops. The bus stops have displays which show when the next bus is due and where it is going.

[Source: http://secondavesagas.files.wordpress.com/2007/08/londonbus813.jpg, 1 June 2009]

(a) Define the term *information system*. *[2 marks]*

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(This question continues on the following page)

(Question 3 continued)

(b)   Describe how the information system is able to provide an up-to-date display
      such as the one shown in the image on the previous page.   *[4 marks]*

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(c)   Explain ways in which the information system could be used to improve the
      efficiency of the bus service.   *[4 marks]*

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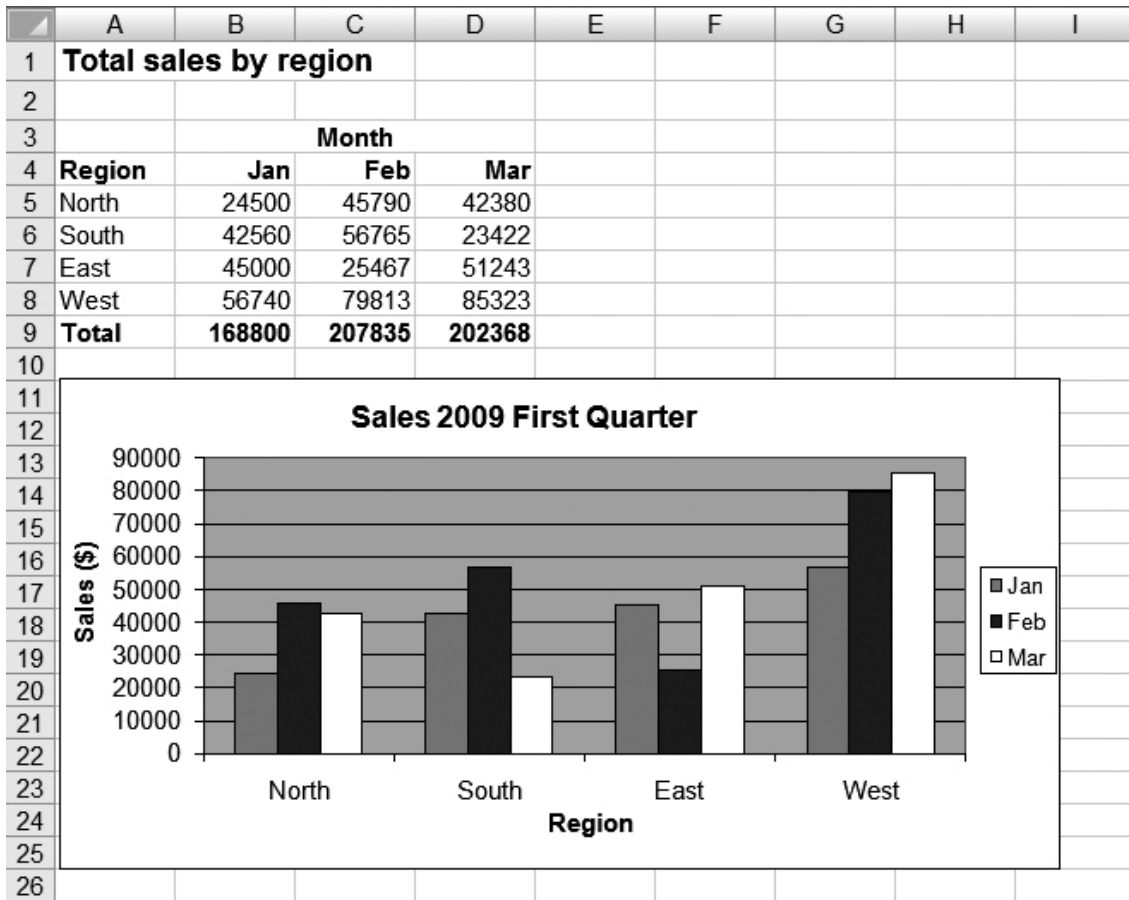. . . . .

4. The office workers in the sales department of a company make extensive use of spreadsheets for many purposes. They use formulae and functions to perform calculations. Each worker sets up spreadsheets to do the work as required. Every three months, they are required to print out a sales report that produces a chart of sales figures such as the one in the screenshot below.

(a) The value in cell B9 was calculated using the SUM function. Identify **two** features of a spreadsheet function. *[2 marks]*

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(This question continues on the following page)

(Question 4 continued)

(b)   Describe the steps taken to produce the chart in the spreadsheet on the
      previous page.   *[4 marks]*

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(c)   Many companies allow individuals to create their own macros to carry
      out standard tasks.   Explain **one** advantage and **one** disadvantage of the use
      of macros.   *[4 marks]*

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