GCSE
4333/01

INFORMATION AND COMMUNICATION TECHNOLOGY
UNIT 3: ICT in Organisations

P.M. THURSDAY, 21 May 2015
1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES
Use black ink or black ball-point pen. Do not use pencil or gel pen. Do not use correction fluid.
Write your name, centre number and candidate number in the spaces at the top of this page.
Answer all questions.
Write your answers in the spaces provided in this booklet.
If you run out of space, use the continuation pages at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES
The number of marks is given in brackets at the end of each question or part-question.
Quality of written communication will be assessed in question 12.
1. **Tick (✓) the correct box to show whether the devices listed below are used for either **Input** or **Output**. [4]

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphics tablet</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Speaker</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Webcam</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Mouse</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

2. **Name** a type of network topology and draw a **diagram** of the network topology, labelling the position of the workstations on that network. [2]

   **Name:** ....................................................................................................

   **Diagram:**
3. Examine Graphic A and Graphic B below.

Although both graphics appear the same, Graphic A is a *bitmap* graphic and Graphic B is a *vector* graphic.

(a) Tick (√) the correct box to show whether the statements below apply to a bitmap or vector graphic. [5]

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>BITMAP</th>
<th>VECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphics can be scaled up without loss of quality.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Graphics are made up of pixels.</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Graphics that use points, lines, curves and shapes stored as mathematical equations.</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The larger the graphic, the more pixels are needed and so the file size becomes larger.</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>If small graphics are enlarged, the graphic can become blurred.</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

(b) Graphics published on web pages should be optimised.

(i) State what is meant by *optimisation of graphics for the web* and give one way of optimising a graphic. [2]
(ii) Give one advantage of optimising graphics for publishing on a web page. [1]

4. Animators use many different techniques.

(a) Name the animation techniques described in the table below. [3]

<table>
<thead>
<tr>
<th>Description</th>
<th>Animation Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live actors are filmed. Frames are then traced over to produce a cartoon effect animation.</td>
<td></td>
</tr>
<tr>
<td>Clay figures are photographed, moved and photographed again. This is repeated since each photograph forms a frame that can be played in sequence to produce an animation.</td>
<td></td>
</tr>
<tr>
<td>The process of getting the computer to create the in-between frames between key frames in an animation.</td>
<td></td>
</tr>
</tbody>
</table>

(b) Describe what is meant by onion skinning. [2]

(c) Describe in detail what is meant by a storyboard. [2]
5. Many musicians use ICT.

(a) Name the interface that allows computers and musical instruments to communicate with each other. [1]

(b) Give three different uses or advantages of music composition software. [3]

(c) Some signals from a computer need to be converted so they can be output. Describe why this conversion is needed to play music through a speaker. [2]

(d) Give one benefit and one drawback of using WAV sound files against using MP3 sound files. [2]

Benefit: ........................................................................................................................................................................................

Drawback: ..................................................................................................................................................................................
6. Some computers use a *Graphical User Interface (GUI)*.

   (a) **Tick (✓) the correct boxes below to show which two statements are true for a GUI.** [2]

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>Tick (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A GUI consists of Windows, Icons, Menus and Pointers.</td>
<td>1</td>
</tr>
<tr>
<td>A GUI is less demanding on memory compared with a text-only interface.</td>
<td>2</td>
</tr>
<tr>
<td>A GUI allows you to customise your desktop.</td>
<td>3</td>
</tr>
<tr>
<td>A GUI does not allow the use of an on-screen keyboard.</td>
<td>4</td>
</tr>
</tbody>
</table>

   (b) **Different Human Computer Interfaces are used with different devices. For each interface named below give a suitable input device and a different example of its use.** [2 x 2]

   **BIOMETRIC:**
   
   Suitable input device: ..................................................................................................................................................  
   Example of use: ...................................................................................................................................................................  
   .......................................................................................................................................................................................  
   .......................................................................................................................................................................................  
   .......................................................................................................................................................................................  

   **VOICE DRIVEN:**
   
   Suitable input device: ..................................................................................................................................................  
   Example of use: ...................................................................................................................................................................  
   .......................................................................................................................................................................................  
   .......................................................................................................................................................................................  
   .......................................................................................................................................................................................  

   (c) (i) **State the name given to the type of interface that is a text-only interface.** [1]
(ii) Give two advantages of using a text-only interface.  

Advantage 1: ........................................................................................................................................................
........................................................................................................................................................
........................................................................................................................................................

Advantage 2: ........................................................................................................................................................
........................................................................................................................................................
........................................................................................................................................................

7. (a) Complete the following sentences about websites, using only the terms given in capitals below.

<table>
<thead>
<tr>
<th>HTML</th>
<th>SEARCHED</th>
<th>URL</th>
<th>LAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEB SERVER</td>
<td>HOSTED</td>
<td>POS</td>
<td>INTRANET</td>
</tr>
</tbody>
</table>

(i) The unique address for every website on the internet is called a ........................................... .  [1]

(ii) .............................................................................. is a language used to create a web page.  [1]

(iii) In order to allow people to view a website over the internet it must be .............................................................................. on a .............................................................................. .  [2]

(b) State what is meant by the following two website terms.  [2]

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home page</td>
<td></td>
</tr>
<tr>
<td>Hotspot</td>
<td></td>
</tr>
</tbody>
</table>
Give one reason why you would use a template when creating a website. [1]

Banner advertisements are often placed in a prominent location on a web page. State the name given to this type of banner. [1]

Give two advantages and two disadvantages of computerised data logging. [4]

Advantage 1: ...........................................................................................................................................................................

Advantage 2: ...........................................................................................................................................................................

Disadvantage 1: ....................................................................................................................................................................

Disadvantage 2: ....................................................................................................................................................................

Many pilots learn to fly using flight simulation models.

(i) State what is meant by a simulation model. [2]
(ii) Give two advantages of using simulation modelling. \[2\]

Advantage 1: ...............................................................................................................................................................

.............................................................................................................................................................................

Advantage 2: ..............................................................................................................................................................

.............................................................................................................................................................................

(iii) Give one disadvantage of using simulation modelling. \[1\]

.............................................................................................................................................................................

.............................................................................................................................................................................

9. Expert systems are used by car mechanics.

(a) State one use made of an expert system by a car mechanic. \[1\]

.............................................................................................................................................................................

.............................................................................................................................................................................

(b) Give two advantages of using an expert system. \[2\]

Advantage 1: ...............................................................................................................................................................

.............................................................................................................................................................................

Advantage 2: ..............................................................................................................................................................

.............................................................................................................................................................................
(c) Give two disadvantages of using an expert system. [2]

Disadvantage 1: ...................................................................................................................................................................

Disadvantage 2: ...................................................................................................................................................................

(d) State what is meant by the term artificial intelligence (AI). [1]

10. Many web based email accounts use cloud computing technology. The email software and email data are not stored on a local computer; instead they are stored in the email company’s computer cloud.

(a) State what is meant by the term cloud computing. [1]

(b) Give one advantage of cloud computing. [1]

(c) Give one potential risk with cloud computing. [1]
11. Some organisations have an online shopping (e-commerce) facility.

Discuss the advantages of an e-commerce system to the organisations and to the customers. [6]
12. Using ICT has had an effect on the way people work. Videoconferencing is one of these impacts.

Describe what is meant by videoconferencing and discuss in detail the **advantages** and **disadvantages** of videoconferencing to both the employer **and** to their staff.  

*Remember that the quality of written communication will be assessed in this question.*