Candidate surname | Other names

**Pearson Edexcel**
International
Advanced Level

Centre Number | Candidate Number

**Time** 3 hours

Paper reference **WIT12/01**

# Information Technology
## International Advanced Subsidiary/Advanced Level
## UNIT 2

**You must have:**
A computer workstation with a text editor, browser software and Questions folder (containing assets, HTML and CSS files).

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions **requiring a written answer** in the spaces provided
  – *there may be more space than you need.*
- Carry out the practical tasks on the computer workstation and save new or amended files using the file name given in the question.
- You must **not** use the internet during the examination.

## Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

## Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Save your work regularly.
- Check your answers if you have time at the end.
- Good luck with your examination.

*Turn over* ▶

**Pearson**

**SECTION A**

**You are advised to spend about 60 minutes on this section.**

**Answer ALL questions in this section. Answer the questions requiring a written answer in the spaces provided.**

**Some questions will require you to save code in a specified format.**

1   HTML is used to structure web pages.

(a) (i)   State what is meant by an HTML **element**.

**(1)**

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(ii)  State what is meant by an HTML **attribute**.

**(1)**

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(b) **Figure 1** shows some HTML code.

| 2 | |
|---|---|
| **3** | `<a href="booking.html"><img src="bookingbutton.jpg"></a>` |
| **4** | |

**Figure 1**

Explain the purpose of the HTML code on line 3.

**(2)**

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(c) **Figure 2** shows how a list of facts about bees should be displayed in a browser.

The HTML code should:

• show a number for each fact

• display each fact on a new line.

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1.   Honey is food for young bees.
2.   There are some species of bees that are killer bees.
3.   A lot of people think all bees die after stinging. However, it is only some species.
4.   Bees are calmed by smoke and this is why it is used when honey is being collected.

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**Figure 2**

The page does not display as intended because there are **two** errors in the HTML code.

Open file **Q01c.html** in a browser to identify the errors.

Open the file in your editor.

Amend the code to correct the **two** errors.

Save your amended code as **Q01cFINISHED.html**

(2)

(d) Explain the purpose of the data-* attribute.

(2)

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**(Total for Question 1 = 8 marks)**

**2** CSS is used by browsers to style HTML elements.

(a) CSS selectors indicate which HTML elements are being styled.

Two of the most common CSS selectors are the class and ID selectors.

Explain the difference between class and ID selectors.

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(b) **Figure 3** includes the code for a navigation button.

| 6 | `<style>` |
|---|---|
| 7 | `    nav a {` |
| 8 | `        display: block;` |
| 9 | `        height: 25px;` |
| 10 | `        width: 100px;` |
| 11 | `        padding: 4px;` |
| 12 | `        background-color: lightgrey;` |
| 13 | `        color: black;` |
| 14 | `        text-decoration: none;` |
| 15 | `    }` |
| 16 | |
| 17 | `    nav a:hover {` |
| 18 | `        background-color: darkgrey;` |
| 19 | `        color: white;` |
| 20 | `    }` |
| 21 | `  </style>` |
| 22 | `</head>` |
| 23 | `<body>` |
| 24 | `  <nav><a href="bees.html">Home</a></nav>` |

**Figure 3**

Lines 7 to 15 in **Figure 3** show CSS styling for the navigation button on line 24.

Describe the effect that the CSS code on lines 17 to 19 has on the button.

(2)

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(c) A web page contains an image of a bee.

The image should have a black border and be displayed as a circle.

Open file **Q02c.html** in your editor.

Amend the CSS code to implement a black border and a circle effect.

Save your amended code as **Q02cFINISHED.html**

(2)

(d) A web page contains an HTML table that needs to be formatted using CSS.

The table should take up the full width of the page.

All text should be centred.

The table header should use the font size 20 pixels.

The table footer should have a red background.

Open file **Q02d.html** in your editor.

Amend the code to complete the formatting of the table.

Save your amended code as **Q02dFINISHED.html**

(4)

**(Total for Question 2 = 10 marks)**

**3** JavaScript provides interactivity for web pages.

(a) JavaScript and HTML code is needed to open a web page called **success.html** in a new browser window.

The JavaScript code must:

- be triggered by a mouse click

- open a web page called **success.html** in a new window.

Write the JavaScript and HTML code.

**(2)**

Use this space to write your code.

(b) Open file **Q03b.html** in your editor.

The JavaScript code contains an incomplete array and function.

When the button is clicked, the user should be able to see:

• the unsorted array values

• the array values sorted alphabetically.

Amend the HTML code and the JavaScript code to complete the array and function.

Save your amended code as **Q03bFINISHED.html**

(4)

(c) Open **Q03c.html** in your editor.

The JavaScript code displays a 'start' button.

When the user clicks the button a prompt box appears requesting the input of a name.

After the input, the name is 'hidden' by replacing each character with an asterisk.

The 'hidden' name is then displayed.

For example, Mobin would be input and then displayed as *****

Amend the code so that it:

• replaces each character in the name with an asterisk

• displays a message containing the hidden name.

Save your amended code as **Q03cFINISHED.html**

(4)

(d) **Figure 4** shows some code containing a blur event.

```
7    <script>
8      function validate(itemToValidate) {
9        if (itemToValidate.value.length<1){
10         alert("You must enter your first name")
11       }
12     }
13   </script>
14 </head>
15 <body>
16 <p>Enter your first name: <input type="text" id="firstName" onblur="validate(firstName)"></p>
```

**Figure 4**

Describe how the code works.

**You must use line numbers to support your description.**

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**(Total for Question 3 = 13 marks)**

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**SECTION B STARTS ON THE NEXT PAGE.**

**SECTION B**

**You are advised to spend about 120 minutes on this section.**

**Answer ALL questions in this section. Answer the question requiring a written answer in the space provided.**

**Some questions will require you to save code in a specified format.**

**4** EcoBee is an organisation interested in bee conservation. It needs a new responsive web page.

Two mock-ups, a style guide and some initial code have been provided.

The initial code can be found in **Q04.html** and **Q04.css**

A mock-up shows how a web page should appear.

**Figure 5** shows a mock-up for screen sizes less than 600 pixels wide.

**Figure 6** shows a mock-up for screen sizes of 600 or more pixels wide.

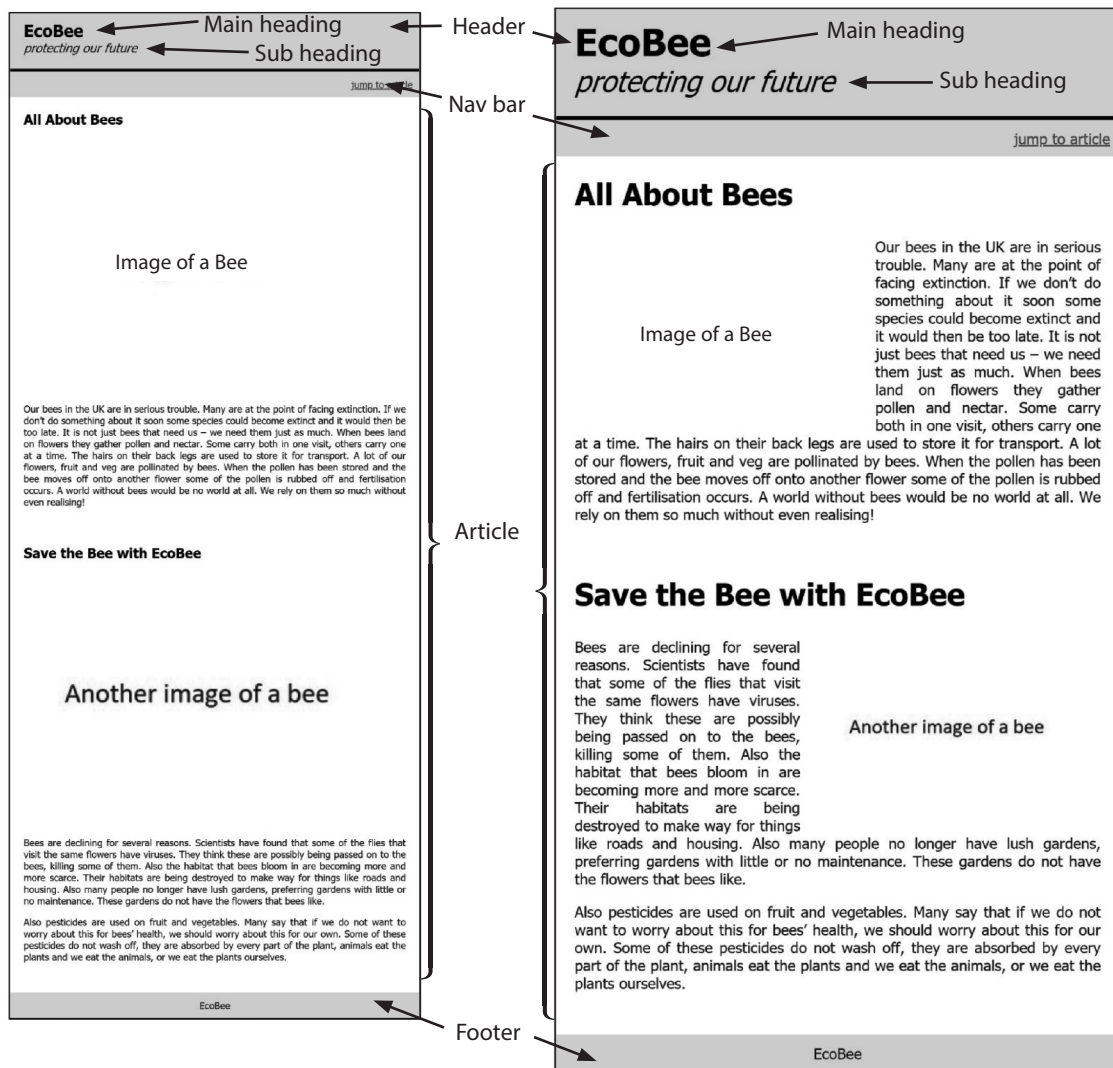PDF versions of the mock-ups can be found in the assets folder.



**Figure 5**   **Figure 6**

**Overall page requirements**

- Use HTML5 elements to define the different parts of the page.

- Use a responsive layout with a breakpoint defined to target screens at 600 pixels and above.

- Use Tahoma font style.

- Use an external style sheet.

- Use suitable padding and/or margins.

**Web Design Style Guide – less than 600 pixels wide (Figure 5)**

**Header**

- Set background colour to hex (#ffe570).

- Insert the main heading 'EcoBee' as shown.

- Set font size of the main heading to 24 pixels.

- Insert the sub heading 'protecting our future' as shown.

- Set font size of the sub heading to 18 pixels.

- Add a bottom border.

**Navigation bar**

- Create the navigation bar as shown.

- Set background colour to hex (#ffe570).

- Right-align the text 'jump to article'.

- Add an internal link to the article.

- Set font size of the internal link to 14 pixels.

**Article**

- Insert the headings, images and text as shown. The images and text can be found in the assets folder.

- Set font size of the headings to 20 pixels.

- Set font size of the text to 14 pixels.

- Justify the text.

- Set the width of the images to 100% of the width of the page.

**Footer**

- Set background colour to hex (#ffe570).

- Insert the text 'EcoBee' as shown.

- Centre-align the text.

- Set font size to 14 pixels.

**Web Design Style Guide – 600 or more pixels wide (Figure 6)**

**Font sizes**

- Set fonts with a size of 24 pixels to 40 pixels.

- Set fonts with a size of 18 pixels to 30 pixels.

- Set fonts with a size of 14 pixels to 16 pixels.

- Set fonts with a size of 20 pixels to 32 pixels.

**Article**

- Set the width of both images to 300 pixels.

- Position the first image to appear to the left of the first paragraph of text.

- Position the second image to appear to the right of the second and third paragraphs of text.

- Wrap text around the images.

Develop a prototype for the responsive web page for EcoBee using the mock-ups, style guide, images, text and initial code provided.

Save your files as **Q04FINISHED.html** and **Q04FINISHED.css**

**(Total for Question 4 = 20 marks)**

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**QUESTION 5 STARTS ON THE NEXT PAGE.**

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**5** EcoBee wants to improve the functionality of its website.

The website needs:

- a registration page that allows a visitor to register as a member

- a welcome page that displays the username of the newly-registered member and a suitable message.

All of the required files are supplied in the Q05 folder.

No additional resources are required.

You only need to add HTML, JavaScript and comments to the existing files.

**Registration page**

**registration.html** contains an early prototype.

Complete the prototype to allow a visitor to register as a member.

When the join button is clicked an automated method must:

- use a regular expression and validation to ensure that both **first name** and **last name** are input in this format:

   ◦ 1 single uppercase letter

   ◦ followed by 1 or more lowercase letters

- use a regular expression and validation to ensure a mobile telephone number is input using exactly 11 digits

- ensure an age group has been selected

- generate a username in this format:

   ◦ the first 3 letters of the first name

   ◦ followed by the first 2 letters of the last name

   ◦ followed by the last 3 digits of the mobile telephone number

- load the **welcome.html** page and pass the generated username and age group to it.

You must add suitable comments to your code to explain how it works.

**Save your file as registrationFINISHED.html**

**Welcome page**

**welcome.html** contains an early prototype.

Complete the prototype.

When the welcome page is loaded an automated method must display:

• the generated username that was passed to it by the registration page

• the junior message for those aged up to and including 15

• the adult message for those who are over 15.

You must add suitable comments to your code to explain how it works.

**Save your file as welcome.html**

**NOTE if you use any other filename the prototype will not work.**

**(Total for Question 5 = 20 marks)**

**6** EcoBee wants to expand its responsive website.

The website will include these additional web pages.

- Our projects

- Fundraising

- Frequently asked questions (FAQs)

- Bumblebees

- Carpenter bees

- Honey bees

- Killer bees

EcoBee has been advised to use an intuitive navigation system for the expanded website.

It is considering:

- a horizontal scrolling menu

- a vertical menu

- dropdown menus

- breadcrumb navigation.

Assess the suitability of all four of these navigation methods for the EcoBee website.

(9)

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**(Total for Question 6 = 9 marks)**

**TOTAL FOR PAPER = 80 MARKS**

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