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Candidate surname

Other names

**Pearson Edexcel**  
**International**  
**Advanced Level**

Centre Number

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Candidate Number

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**Tuesday 19 May 2020**

Morning (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.

Turn over ►

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## 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 space provided.

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

1 Web pages use HTML and CSS.

(a) The purpose of HTML is to create the structure of a web page.

Give the purpose of CSS.

(1)

(b) **Figure 1** shows how a list of facts about London should be displayed in a browser.

The HTML code should:

- display each line with the bullet type shown
- display each fact on a new line
- include the citation shown.

### Facts about London we bet you never knew!

- Many experts say that the name London came from the Celtic word “Londinous”, which means to be bold.
- More than 80 billionaires live in London.
- London buses were not always red.

Facts taken from *Interesting Facts About London* a blog about London.

### Figure 1

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

Open file **Q01b.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 **Q01bFINISHED.html**

(2)



(c) A web page needs to have an iframe.

The source of the iframe will be `https://www.bridgelon.com`

It must have a width of 150 pixels and a height of 350 pixels.

Write the HTML code to display this iframe.

(3)

Use this space to write your code.

(d) State what is meant by the term **metadata**.

(1)

(e) **Figure 2** shows HTML code.

```
2 <head>
3   <meta name="description" content="London facts you will never believe">
4 </head>
```

**Figure 2**

Explain the purpose of the HTML code on line 3.

(2)

**(Total for Question 1 = 9 marks)**



2 Browsers use HTML and CSS to display web pages.

(a) CSS code can be referenced within HTML documents by using style sheets.

Explain **one** difference between an external and an internal style sheet.

(2)

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(b) A web page contains a heading.

The heading must have:

- a red, white and blue linear gradient background
- a 3-pixel red border
- centre-aligned text
- padding of 20 pixels.

Open file **Q02b.html** in your editor.

Amend the CSS code to implement the heading.

Save your amended code as **Q02bFINISHED.html**

(4)

(c) A web page contains two animations that show traffic moving across the page.

The first animation moves an image from left to right.

The second animation moves another image from right to left.

The first animation has already been completed.

The second animation should move the image **leftFacing.jpg** across the page from right to left along the same path as the first animation.

The images must start from an off-screen position.

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

Amend the code to complete the second animation.

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

(3)



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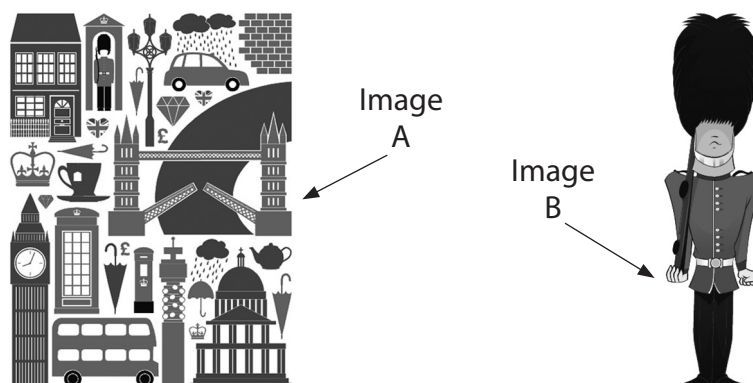
**QUESTION 2(d) BEGINS ON THE NEXT PAGE.**



(d) **Figure 3** shows two images used on a web page.

When a user hovers over image A, image B replaces image A.

When the user is no longer hovering, image A replaces image B.



**Figure 3**

**Figure 4** shows the HTML and CSS code that enables this to happen.

```
6 .image-container {
7   position: relative;
8   display: inline-block;
9 }
10
11 .image {
12   width: 200px;
13   height: 263px;
14 }
15
16 .image-b {
17   display: none;
18 }
19
20 .image-container:hover .image-b {
21   display: block;
22   position: absolute;
23   top: 0;
24   left: 0;
25 }
26 </style>
27 </head>
28 <body>
29 <div class="image-container">
30 
31 
32 </div>
```

**Figure 4**



Describe how the CSS code on lines 16 to 25 work together to show and hide image B.

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

(4)

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**(Total for Question 2 = 13 marks)**

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3 JavaScript provides interactivity for web pages.

(a) Regular expressions can be used to validate user input.

This is an example of a regular expression.

$$[A-Z][a-z]{2}\d{3}(a|b)q+$$

This regular expression would validate user input to ensure it matches this format.

1 uppercase character	[A-Z]
2 lowercase characters	[a-z]{2}
3 digits (i.e. numbers 0 to 9)	\d{3}
The character a or the character b	(a b)
One or more of the character q	q+

Examples of valid input include Crt987bqq, Bew123aq and Xvq367aqqq.

Examples of invalid input include aaa123aqq, Ac111bqq and Abg123rqqq.

This is another regular expression.

$$(E|R)[a-z][A-Z]+\d{4}$$

Give **two** reasons why the input WAb1235 would fail validation.

(2)

1 .....

2 .....





(b) Write a regular expression that will validate user input.

It must ensure the input:

- begins with one digit
- is then followed by four uppercase characters
- is then followed by the digit 0 or 1
- is then followed by one or more lowercase characters.

(1)

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

The JavaScript code contains an incomplete function for registering tour guides.

When the details of a tour guide are input, and the register button is clicked:

- a new guide object is created to display the details
- the form is cleared.

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

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

(3)

(d) A window has been opened using JavaScript code.

Write the HTML and JavaScript code that will close the window when a button is clicked.

(2)

Use this space to write your code.



(e) Give **one** benefit of using comments within JavaScript code.

(1)

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**(Total for Question 3 = 9 marks)**

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**SECTION B BEGINS 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.

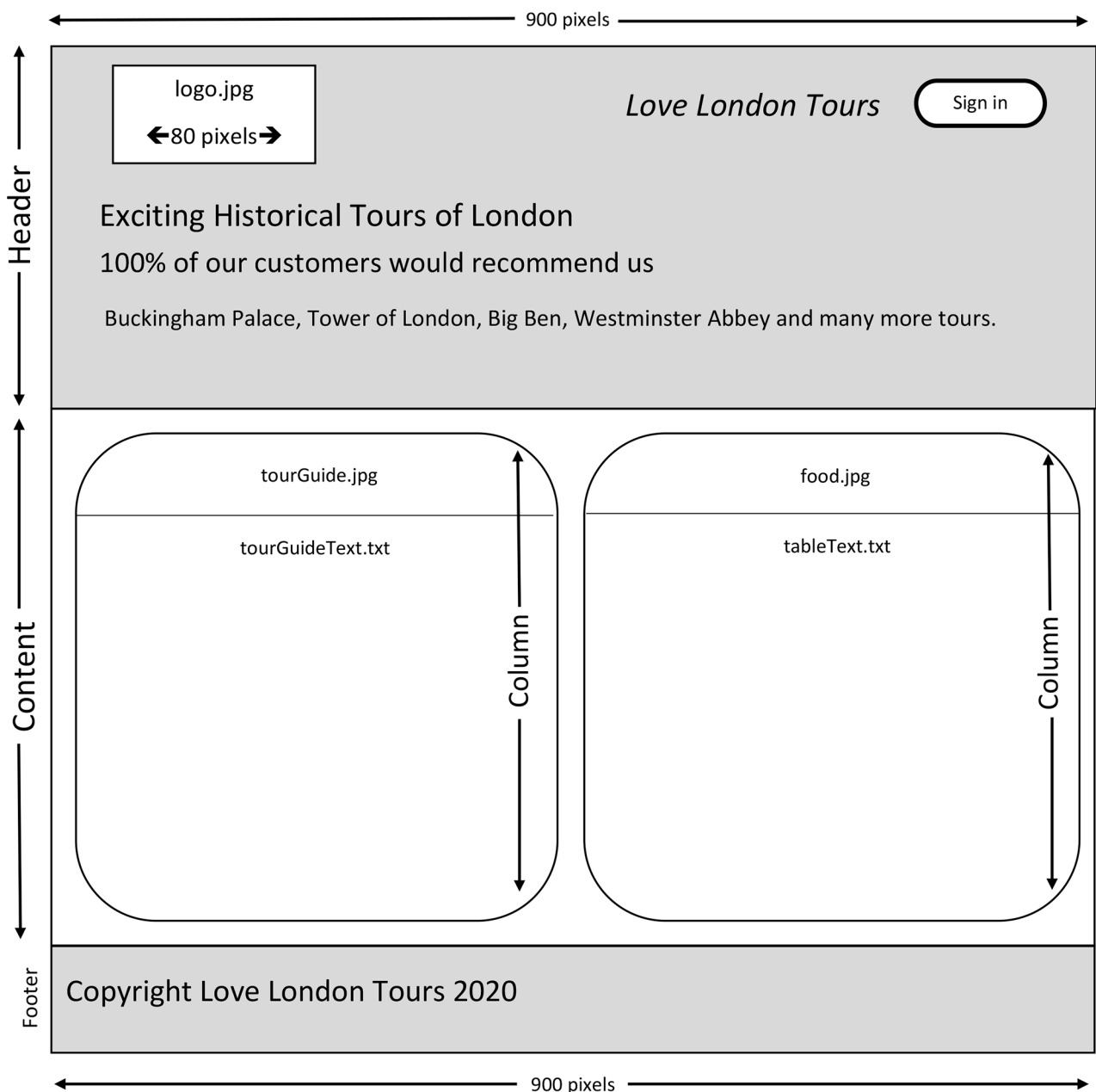
4 Love London Tours needs a web page.

A wireframe, style guide and some initial code have been provided.

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

**Figure 5** shows the wireframe.

A mock-up, in PDF format, can be found in the assets folder.



**Figure 5**

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## Overall page requirements

- Use HTML5 elements to define the different parts of the page.
- Use Arial font style.
- Use an external style sheet.
- Use suitable padding and/or margins.

## Web Design Style Guide

### Header

- Set background colour to midnight blue (#191970).
- Insert the logo image as shown. The image can be found in the assets folder.
- Set the width of the logo image to 80 pixels.
- Insert the text 'Love London Tours' as shown.
- Set the font size to 30 pixels.
- Set the font colour to white (FFFFFF).
- Embolden and italicise the text.
- Insert the text 'Exciting Historical Tours of London' as shown.
- Set the font size to 35 pixels.
- Set the font colour to white (FFFFFF).
- Insert the text '100% of our customers would recommend us' as shown.
- Set the font size to 25 pixels.
- Set the font colour to white (FFFFFF).
- Insert the text 'Buckingham Palace, Tower of London, Big Ben, Westminster Abbey and many more tours' as shown.
- Set the font size to 18 pixels.
- Set the font colour to white (FFFFFF).
- Create the 'Sign in' button as shown.
- Set the font size to 18 pixels.
- Set the font colour to white (FFFFFF).
- Set the background colour to firebrick (B22222).
- Add a hyperlink to the page **signin\_form.html**

### Content

- Set the background colour to light blue (ADD8E6).

#### Columns

- Insert two columns.
- Set the background colour to white smoke (F5F5F5).
- Insert the images, text and table as shown. The images and text can be found in the assets folder.
- Set the font size to 14 pixels.
- Justify the text.
- Format the table.
  - Set the text alignment to center.
  - Set the border colour to gray (404040).
  - Set the background colour of the first row to gray (404040).
  - Set the font colour of the first row to white (FFFFFF).



**Footer**

- Insert the text 'Copyright Love London Tours 2020' as shown in the wireframe.
- Set the font size to 16 pixels.
- Set the font colour to white (#FFFFFF).
- Set the background colour to firebrick (#B22222).

Develop a prototype for the web page for Love London Tours using the wireframe, mock-up, style guide, images and text provided.

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

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

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



5 The goal of search engine optimisation (SEO) is to improve the ranking of a web page on search engines.

The web page you created in Q04 is not fully optimised for a high ranking.

Analyse your prototype to identify aspects that are already optimised and make recommendations for changes that would improve the ranking of the web page.

(9)

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(Total for Question 5 = 9 marks)



## 6 Love London Tours wants to improve the functionality of its website.

The website needs:

- a new member page that will allow site visitors to sign up for newsletters
- a search page that will be used to find tour guides and their tour locations.

All of the required files are supplied in the Q06 folder.

No additional resources are required.

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

### New member page

**newMember.html** contains an early prototype.

Complete the prototype to allow new member registrations.

When the save button is clicked an automated method must ensure that:

- a last name has been input
- the age input is at least 18
- suitable error messages for invalid data will be displayed on the page
- a message to say member details have been saved will be displayed on the page
- member details will be displayed on the page.

**Figure 6** shows how the results must be displayed when valid data has been input.

**New Member Registration**

Enter Personal Information

First name

Last name

Age

Select a gender:

**Member details have been saved**

First name: Test  
Last name: Test  
Age: 18  
Gender: Male

**Figure 6**

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

**Save your file as newMemberFINISHED.html**



**Search page**

**search.html** contains an early prototype.

Complete the prototype.

When the name of a tour guide is input, and the search button clicked, an automated method must:

- check whether the name exists in the 2D array
- display the name of the tour guide and their tour location above the list of names if they have been found
- display an error message above the list of names if the name of the tour guide was not found.

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

**Save your file as searchFINISHED.html**

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**(Total for Question 6 = 20 marks)**

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**TOTAL FOR PAPER = 80 MARKS**



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