# Mark Scheme (Results)

# Summer 2021

Pearson Edexcel International Advanced Subsidiary
In Information Technology (WIT12)
Unit 2

| Question number | | Answer | Additional guidance | Mark |
|---|---|---|---|---|
| **1 (a)(i)** | A1 | Award **one** mark for:<br><br>• An individual component of an HTML document. (1)<br>• The opening tag, closing tag/content (if required). (1)<br>• An element provides semantic structure and meaning to objects (within a webpage). (1)<br>• Elements can contain attributes that define additional properties (of a component / part of a page). (1) | Accept:<br><br>The HTML element is the root element of the page | **1** |
| **1 (a)(ii)** | A2 | Award **one** mark for:<br><br>• A modifier of an HTML element. (1)<br>• Defines a property for an element. (1)<br>• A characteristic of an element. (1) | Accept a sensible example e.g.<br><br>The 'class' attribute allows you to style the element | **1** |

| Question number | | Answer | Additional guidance | Mark |
|---|---|---|---|---|
| 1 (b) | B1 B2 | Award **two** marks for a linked explanation such as:<br><br>• Line 3 contains a hyperlink /clickable link on an image (1) to a page called "booking.html". (1)<br>• An image called "bookingbutton.jpg" has been hyperlinked (1) to a page called "booking.html". (1)<br>• The code wraps a clickable link around an image (1) that will navigate the user to the booking.html page (1)<br>• The user will be taken to booking.html (1) when they click the image (1) | | 2 |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| 1 (c) | Award **one** mark for each correction up to a maximum of **two** marks. | | 2 |

| | C1 | <li> tag added to beginning of third list item (1) |
|---|---|---|
| | C2 | <ul> tag changed to <ol> tag (1) |

Correct code is:

```
 8      <ol>
 9          <li>Honey is food for young bees.</li>
10          <li>There are some species of bees that are killer bees.</li>
11          <li>A lot of people think all bees die after stinging. However, it is only some species.</li>
12          <li>Bees are calmed by smoke and this is why it is used when honey is being collected.</li>
13      </ol>
```

| Question number | Answer | | Additional guidance | Mark |
|---|---|---|---|---|
| 1 (d) | D1 D2 | Award **two** marks for a linked explanation such as:<br><br>Used to store/create/embed custom data (1) private to the page/application / about an element (1) | | 2 |
| **Total mark for question** | | | | 8 |

| Question number | Answer | | Additional guidance | Mark |
|---|---|---|---|---|
| 2 (a) | A1 A2 | Award **two** marks for a linked explanation such as:<br><br>• An ID can be used to identify one element (1), whereas a class can be used to identify more than one element. (1)<br><br>• Each element can only have one ID (1), whereas an element can use multiple classes. (1)<br><br>• Classes are not unique (1), element IDs must be unique. (1)<br><br>• An ID selector is a name preceded by a **hash character** ("#") (1), a class selector is a name preceded by a **full stop** (".") (1)<br><br>• The class selector is used to apply styles to a HTML element (1) whereas the ID selector is used to identify an element (1). | | 2 |

| Question number | | Answer | Additional guidance | Mark |
|---|---|---|---|---|
| **2(b)** | B1 B2 | Award **two** marks for a description such as:<br><br>When the user hovers over the (navigation) button/ link (1) the **background** colour changes to dark grey and the **font** colour to white. (1) | Need to be clear what the colours are being applied to | **2** |

| Question number | Answer | | | Additional guidance | Mark |
|---|---|---|---|---|---|
| **2 (c)** | Award **one** mark for using the border-radius setting and **one** mark for applying a solid border. | | | Border-radius minimum of 50% or 180px<br><br>Could specify pixels and black (#000) for the border.<br><br>Must be formatted using CSS styling | **2** |
| | C1 | border-radius: 50%<br>or<br>border-radius: 180px; (1) | | | |
| | C2 | Border: solid; (1) | | | |
| | Correct code is:<br><br>```
7       img {
8           border-radius:50%;
9           border:solid;
10      }
```   ```
7 ▼     img {
8           border-radius:180px;
9           border:solid;
10      }
``` | | | | |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **2 (d)** | Award **one** mark for each of: | Must be formatted using CSS styling | **4** |
| | D1 | table width set to 100% (1) | | |
| | D2 | text centred (1) | | |
| | D3 | header uses 20px font size (1) | | |
| | D4 | footer has a red background (1) | | |
| | Sample code | | |

```css
8      body {
9        font-family: Verdana;
10       text-align: center;
11     }
12
13     table {
14       width: 100%;
15     }
16
17     thead {
18       font-size: 20px;
19     }
20
21     tfoot {
22       background-color: red;
23     }
```

```css
8      table {
9        width: 100%;
10       text-align: center;
11     }
12     thead {
13       font-size: 20px;
14     }
15     tfoot {
16       background-color: red;
17     }
```

| | | **Total mark for question** | **10** |

| Question number | Answer | | Additional guidance | Mark |
|---|---|---|---|---|
| **3 (a)** | A1 A2 | Award up to **two** marks for answers such as:<br><br>•    <a href="success.html" (1)<br>•    onClick="window.open(this.href); return false" (1)<br>OR<br>•    <a href="#" (1)<br>•    onClick="window.open('success.html') (1) | JavaScript must be used to for the event<br><br>Accept:<br><br>• double/single quotes<br>• minor spelling errors<br>• alternatives that would work | |
| | Example code:<br><br>•    <a href="success.html" (1) onClick="window.open(this.href); return false" (1)> Open page in a new window</a><br>•    <a href="#" (1) onClick="window.open('success.html')" (1) >Open page in a new window</a><br><br>function newWindow() {<br>      window.location = "success.html" (1)<br>}<br><button onclick = "newWindow()"(1)>Click here</button><br><br><br>Function newWindow() {<br>      window.location.assign("success.html")<br>}<br><button onclick = "newWindow()"(1)>Click here</button> | | | |

```
Function newWindow() {
        window.location.replace("success.html")
}
<button onclick = "newWindow()"(1)>Click here</button>


Function newWindow() {
        window.open("success.html")
}
<button onclick = "newWindow()"(1)>Click here</button>
```

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **3 (b)** | Award **one** mark for each of: | Do not award sort mark if it is a manual sort | **4** |
| | B1 | Array initialised correctly (1) | | |
| | B2 | Array sorted alphabetically (1) | | |
| | B3 | "unsorted" added as first paragraph's ID (1) | | |
| | B4 | Sorted array displayed correctly (1) | | |

Sample code:

```
7      //Initialise the array with these values in this order: Avocado, Clover, Apple, Sage, Blueberry
8      var honeyArr = ["Avocado", "Clover", "Apple", "Sage", "Blueberry"]
9
10     function sortArray() {
11      //display the unsorted array
12      document.getElementById("unsorted").innerHTML = "This is the unsorted array: "+honeyArr
13
14      //add code to sort the array
15      honeyArr.sort()
16      //add code to display the sorted array
17      document.getElementById("sort").innerHTML = "This is the sorted array: " +honeyArr
18      }
19     </script>
20   </head>
21   <body>
22     <h3>Open in your editor and add your code</h3>
23     <button onclick="sortArray()">Show Array</button>
24     <p id="unsorted"></p>
25     <p id="sort"></p>
```

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **3 (c)** | Award **one** mark for each of: | | **4** |
| | | | |

| | | |
|---|---|---|
| C1 | termination of loop e.g. count<=inputName.length; (1) | |
| C2 | loop incremented e.g. count++ (1) | |
| C3 | each character in name replaced with * (1) | Allow follow through from C1 e.g. <inputName.length() |
| C4 | hidden name displayed correctly outside of the loop (1) | Accept hidden name being displayed in the loop if appropriate e.g. |

document.write(hiddenName)

hiddenName="*"
document.write(hiddenName)

For example, so long as an alert is not shown each time an asterisk is displayed

Example code:

```
14        for (count = 1; count <= inputName.length; count ++){
15           hiddenName += "*"
16        }
17        alert(hiddenName)
18      }
```

| Question number | Answer | | Additional guidance | Mark |
|---|---|---|---|---|
| **3 (d)** | D1<br>D2<br>D3 | Award up to **three** marks for a description such as:<br><br>• Line 8 sets up the validate function (1)<br>• Line 9<br>    o checks the length of the firstName (1)<br>    o if first name has not been entered / less than 1 an error message would appear (Line 10) (1)<br>• Line 16 validate function called on blur / first name has lost focus (1) | Award max of two marks for correct answer without line numbers | 3 |
| | | | **Total mark for question** | 13 |

| Question number | Answer | | | Additional guidance | Mark |
|---|---|---|---|---|---|
| **4** | Award **one** mark for each of the following points up to a maximum of **fourteen** marks. | | | | **20** |
| | **Evidence found in** | | | | |
| | HTML – Head | A1 | Uses an external style sheet | 1 | |
| | HTML – Body | A2 | At least one HTML5 semantic element used to define part of the page:<br>       &lt;header&gt;<br>       &lt;nav&gt;<br>       &lt;section&gt;<br>       &lt;article&gt;<br>       &lt;footer&gt; | 1 | |
| | HTML – Body | A3 | Internal link added | 1 | |
| | CSS | A4 | Colour set appropriately for at least one of:<br>header, nav, footer background - hex (#ffe570) | 1 | |
| | CSS – header | A5 | Bottom border applied | 1 | |
| | HTML – Header / CSS | A6 | Emphasis on either EcoBee or 'protecting our future' | 1 | |
| | CSS | A7 | Header – left aligned<br>Navigation - right-aligned<br>Article – justified<br>Footer – center aligned | 1 | |
| | | | **Below 600 pixels** | | |
| | CSS | A8 | Header – heading 24 pixels<br>Header – subheading 18 pixels<br>Navigation – 14 pixels<br>Article – headings 20 pixels<br>Article – text 14 pixels<br>Footer – 14 pixels | 1 | |
| | CSS | A9 | Images set to 100% width of page | 1 | |
| | | | **600 pixels and over** | | |
| | CSS | A10 | 14 pixels should be set to 16 pixels<br>24 pixels should be set to 40 pixels | 1 | |

| | | | 20 pixels should be set to 32 pixels<br>18 pixels should be set to 30 pixels | | |
|---|---|---|---|---|---|
| | CSS | A11 | Image 1 floated left of paragraph 1 or Image 2 floated right of paragraph 2 | 1 | |
| | CSS | A12 | Width of images set to 300 pixels | 1 | |
| | Page in browser >=600 pixels | A13 | Image 1 left of paragraph 1 with paragraph 1 text wrapping underneath it<br>Image 2 right of paragraph 2 with paragraph 2 text wrapping underneath it<br>Paragraph 3 underneath paragraph 2 | 1 | |
| | | | **Either** | | |
| | CSS | A14 | Suitable padding and/or margins used | 1 | |

Award up to a maximum of **six** marks for the adherence to the component layout and the application of CSS using the levels based mark scheme below.

| Topic Area | 0 | 1 | 2 | 3 | Mark |
|---|---|---|---|---|---|
| Adherence to component layout design | No awardable content. | There is little adherence to the component layout design, leading to a solution that is not fit for purpose or is not suitable for the intended audience. | An attempt to adhere to the component layout design leads to a solution that is, in parts, fit for purpose and is, in parts, suitable for the intended audience. | The webpage fully adheres to the component layout design and style requirements. The resulting solution is fit for purpose and is suitable for the intended audience. | 3 |
| Application of CSS to control presentation | No awardable content. | There is little attempt to make use of the facilities of CSS to control appearance and style. Most components rely on default configuration. | An attempt has been made to use CSS to control the appearance and style of some components. This has been successful in some cases. | Consistent and accurate application of CSS is used throughout to control the appearance and style of all components. | 3 |
| | | | | **Total mark for question** | **20** |

| Question number | Answer | | | Mark |
|---|---|---|---|---|
| **5** | Award **one** mark for each of the following points up to a maximum of **11** marks. | | | **20** |
| | | | **Marks** | |
| | | **registration.html** | | |
| | A1 | The mobile number input is stored in the variable mobileNumber | 1 | |
| | A2 | Regular expression created that would accept only digits [1-9] | 1 | |
| | A3 | Regular expression created that would accept exactly 11 digits {11} | 1 | |
| | A4 | At least one condition added<br>• check if last name is invalid<br>• check mobile phone is invalid | 1 | |
| | A5 | At least one suitable error messages added<br>• if last name is invalid<br>• if mobile number is invalid | 1 | |
| | A6 | Second part of username generated using first 2 digits of last name and stored in a suitable variable | 1 | |
| | A7 | Final part of username generated using last 3 digits of mobile and stored in a suitable variable | 1 | |
| | A8 | Username concatenated and stored in the variable username | 1 | |
| | | **welcome.html** | | |
| | A9 | Passed username displays on the page (ignore errors in generation of username) | 1 | |
| | A10 | 15 and under message displays correctly<br>**OR**<br>Over 15 message displays correctly<br><br>If the username that is passed has not been generated correctly look at the logic<br>Allow the use of alert though take this into account in levels-based marks for appropriate interface design | 1 | |
| | A11 | 15 and under message displays **on page** correctly<br>**AND**<br>Over 15 message displays **on page** correctly<br><br>f the username that is passed has not been generated correctly look at the logic<br>allow the use of alert though take this into account in levels-based marks for appropriate interface design | 1 | |

| Award up to a maximum of **nine** marks for the functionality, user interface design, use of notation. Using the levels based mark scheme below. | | | | | |
|---|---|---|---|---|---|
| **Topic area** | **0** | **1** | **2** | **3** | **Mark** |
| Appropriate functionality:<br><br>• components and code have been decomposed into appropriate parts<br>• dynamic behaviours are implemented in JavaScript. | | The component parts of the program are incorrect or incomplete, providing a program of limited functionality that meets some of the given requirements.<br><br>Mostly inappropriate logic used. | The component parts of the program are complete, providing a functional program that meets some of the given requirements.<br><br>Some parts of the logic are clear and mostly appropriate to the problem. | The component parts of the program are complete, providing a functional program that fully meets the given requirements.<br><br>The logic is clear and appropriate to the problem. | 3 |
| Appropriate interface design:<br><br>• error messages and other status reports<br>• Interactivity between JavaScript and HTML | | The design of the user interface lacks consideration for fitness for purpose and the intended audience. | The design of the user interface is in parts fit for purpose and addresses some of the needs of the intended audience. | The design of the user interface is fully fit for purpose and suitable for the intended audience. | 3 |

| Topic area | 0 | 1 | 2 | 3 | Mark |
|---|---|---|---|---|---|
| Appropriate use of notation:<br>• presentation of JavaScript ensures clear readability<br>• comments provide clarity. | | Uses programming constructs and techniques to produce some required outcomes in the code.<br><br>Uses data types that are rarely appropriate to the problem.<br><br>Limited use of accurate syntax.<br><br>Limited appropriate use and manipulation of data structures.<br><br>Some use of meaningful variable names with limited or unhelpful commenting.<br><br>Parts of the code are clear and readable but much of it makes limited use of appropriate spacing and indentation. | Uses programming constructs and techniques to produce most of required outcomes in the code.<br><br>Uses data types, some of which are appropriate to the problem.<br><br>Uses mostly accurate syntax.<br><br>Accesses and manipulates data structures to produce mostly correct results and/or outcomes.<br><br>Uses mostly meaningful variable names, with some use of appropriate commenting.<br><br>Code is mostly clear and readable, making some use of appropriate spacing and indentation. | Accurate programming constructs and techniques are used.<br><br>Appropriate data types are selected.<br><br>Accurate syntax is used.<br><br>Data structures are accessed and manipulated efficiently<br><br>Meaningful variable names and comments are used throughout.<br><br>Code is clear and readable, making effective use of appropriate spacing and indentation. | 3 |
| | | | | **Total mark for question** | **20** |

## Code Examples

### registration.html

```
6     <script>
7       function join(){
8         var firstName = document.getElementById("firstname").value
9         var lastName = document.getElementById("lastname").value
10        var age = document.forms.ageChoice.age.value;
11
12        // add code to assign the input mobile phone to the mobileNumber variable
13        var mobileNumber = document.getElementById("mobile").value
14
15        /* regular expression to accept a single uppercase letter followed by 1 or more lowercase lette
16        var acceptableNames = /^[A-Z]{1}[a-z]+$/
17
18        // add code to create a regular expression that will accept exactly 11 digits
19        var acceptableMobile = /^[0-9]{11}$/
20
21        // display error if first name is not entered by user
22        if (acceptableNames.test(firstName) === false){
23          alert("First name must start with an uppercase letter followed by lowercase letters ")
24
25        }else if(acceptableNames.test(lastName) === false){
26
27          // add code to display suitable error message*/
28          alert("Last name must start with an uppercase letter followed by lowercase letters.")
29
30        }else if(acceptableMobile.test(mobileNumber) === false){
31
32          // add code to display suitable error message*/
33          alert("Mobile number must be exactly 11 digits long")
34
35        }else if(age === ""){
36          alert("You must select an age group")
37
38        }else{
39          // generate first part of username using first 3 letters of first name
40          var firstpart = firstName.substring(0,3)
41
42          // add code to generate second part of username using first 2 letters of last name
43          var secondpart = lastName.substring(0,2)
44
45          // add code to generate the final part of username using last 3 digits of telephone number
46          var finalpart = mobileNumber.substring(8,11)
47
48          // add code to create the username
49          var username = firstpart + secondpart + finalpart
50
51          // load welcome.html and pass the username and age to it
52          window.location.href="welcomeFINISHED.html?userAndAge=" + username + "," +age
53        }
54      }
55    </script>
```

### welcome.html

```
// add code to display the username:
document.getElementById("usernameMessage").innerHTML = "Your user name
  is "+username
```

```
27
28        /* add code to display the relevant age related message.
29        The message for juniors is in the file junior.txt.
30        The message for adults is in the file adult.txt*/
31
32        if (age === "15"){
33          document.getElementById("ageMessage").innerHTML = "Please note that in the next few weeks we will be adding a junior
             section to our website. You will automatically have access to that part of the site.  There will be fun things to do and
             weekly competitions."
34        }else{
35          document.getElementById("ageMessage").innerHTML = "We would like to invite you to our weekly online fundraising idea
             forum. This takes place on a Tuesday between GMT hours of 19:00 and 20:00. We hope to see you there."
36        }
```

| Question number | Indicative content | Mark |
|---|---|---|
| 6 | **Should be identifying factors they think are important**<br>For example<br>• Website will have a total of 10 pages (including those from questions 4 and 5)<br>• The navigation must respond to the size of the screen without negatively affecting the user's experience<br><br>**Consideration and significance**<br>Should consider different sized screens.<br>Majority of mobile devices visiting websites (2021) are HD or better<br><br>*Horizontal scrolling menu*<br>• Would probably not be required on desktops as only 10 pages but could be useful on mobile devices<br>    o Could be sized to not take up too much space on the screen<br>    o Could try to ensure the most important links appear first<br>    o It would not take too much of the user's time to scroll through 10 links<br>    o Could possibly need to remove scrolling from desktop and add to mobile<br>    o Menus would look the same in either version just one would have scrolling and the other would not<br><br>*Vertical menu*<br>• Useful for desktops and mobiles<br>• Could end up taking up more vertical space than the actual content of the pages though<br>• For mobile devices could ensure the menu appears after all content with a link to it.<br>• Menus would look the same in either version<br>• Only 10 pages so would not be too many links – would not take up too much time | 9 |

*Dropdown menu*
- Would probably not be required on desktops as only 10 links but could be useful on mobiles. The menus would therefore be different
- User would need to know that there is a drop-down menu. 'Hamburger' is commonly used to denote this
- Menus would be accessed differently but could still have links in exactly the same order
- Only on screen as and when needed
- Useful for the 10 pages of this site

*Breadcrumbs*
- Useful but could potentially not be relevant to a site this size and where depth of pages/nesting is unknown

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1-3 | • Applies understanding with limited coherence, showing limited understanding of the given issue.<br>• Assessment of solution is superficial or unbalanced, and judgements lack support from evidence. |
| Level 2 | 4-6 | • Applies understanding to make some coherent connections, showing some understanding of the given issue.<br>• Assessment of solution is partially developed, but this may be unbalanced, using evidence to support some judgements. |
| Level 3 | 7-9 | • Applies understanding coherently, showing a thorough understanding of the given issue.<br>• Assessment of solution is balanced and developed, using evidence to support judgements throughout. |
| | | **Total for question** 9 |