

Computer Science (H046, H446)

HTML CSS JavaScript

Mr. Montgomery

Daichen

32
40

Duration: Not set

Please note that you may see slight differences between this paper and the original.

Candidates answer on the Question paper.

OCR supplied materials:

Additional resources may be supplied with this paper.

Other materials required:

- Pencil
- Ruler (cm/mm)

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions, unless your teacher tells you otherwise.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Where space is provided below the question, please write your answer there.
- You may use additional paper, or a specific Answer sheet if one is provided, but you must clearly show your candidate number, centre number and question number(s).

INFORMATION FOR CANDIDATES

- The quality of written communication is assessed in questions marked with either a pencil or an asterisk. In History and Geography a *Quality of extended response* question is marked with an asterisk, while a pencil is used for questions in which *Spelling, punctuation and grammar and the use of specialist terminology* is assessed.
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is 40.
- The total number of marks may take into account some 'either/or' question choices.

- 1 The Big Brains exam board has produced a website that allows students to access revision videos.

All pages in the site contain the following tag in the head section.

```
<link href="themes/standard.css" rel="stylesheet" type="text/css" />
```

Describe one advantage of storing the CSS in an external file rather than it being embedded within HTML files.

Using an external CSS file allows you to apply styling to multiple tags at once, making styling more efficient. Since you don't have to manually style each tag you ^{want} ~~not~~ ~~it~~ ~~the~~ ~~style~~ over and over again. For example, you ~~want~~ to make a multitude of tags have red text, you can just give all the tags the same class, and then in external file, reference that class to have red text and all tags with said class will have red text. [3]

(2)

2(a) A website has the following HTML code.

```
<html>
<head>
<title>My Stamp Collection - European Stamps</title>
</head>
<body>
<h1 style="font-family:Arial; color:darkGreen">United
Kingdom</h1>
<p>These are my stamps from the uk.</p>
<!-- Code A -->
```

<!-- Code B -->

```
</body>
</html>
```

the site's owner wants to add the photo UKstamps.jpg in place of the comment

<!-- Code A -->

Write the code that should go in place of the comment <!-- Code A -->:

----- [2]

(b) Where the comment <!-- Code B --> is, the site's owner wants to add the text:

Find out more about UK stamps as a link to the UK Stamp Collectors Guild website which has the URL:

<http://ukstampcollectorsguild.co.uk>

Write the code that should go in place of the comment <!-- Code B -->

<p> Find out more about UK stamps as a link to the UK
Stamp Collectors Guild website which has the URL: </p>

<p> http://ukstampcollectorsguild.co.uk </p> [2]

X

(c) The site uses styling set out as attributes in tags rather than a linked CSS file.

(i) Give one disadvantage of this to the site's owner.

If the site owner makes a mistake with one embedded CSS, ^{and creates a bug,} they have to look manually at every tag with an embedded CSS to see which tag's CSS caused the bug. [1]

(ii) Give one disadvantage of this to the site's visitors.

It might take longer for the content and styling effects to load because all the CSS is done in the same file and opening system has to translate both HTML and CSS at ^{same} time. [1]

(d) The site needs a light green (web colour lightGreen) background. ^{Same}

Explain what change needs to be made to the current page in order to do this.

Inside the ^{opening} <body> tag, you need to add ^{embedded} CSS that changes the background colour to light green like so:
<body style="background-color: lightGreen;" >

This is because you want to change the colour of the page, which is in the body tag. [1]

- (i) Describe what is meant by the term *JavaScript*.

A programming language that can be used together with HTML and CSS. It is a programming language that can be used to ^{make} a website function and have interactions with the user. E.g. buttons that let you buy plane tickets. [2]

- (ii) Explain why it is usually the case that JavaScript is interpreted rather than compiled.

Different users have different operating systems which ~~are~~ are different from each other since they don't all use the same language. If you compiled JavaScript, you would have to compile it in so many different languages ~~because~~ whereas if you interpret, the JavaScript ~~for~~ is translated depending on what operating system is reading it. [2]

- 4 The following JavaScript has been found to crash certain web browsers. it, makes it more efficient.

Line	Code
1	var total = "";
2	for(var j = 0; j < 200000; j++)
3	{
4	total = total + j.toString();
5	history.pushState(0,0, total);
6	}

`j.toString()` converts `j` to a string. It is the JavaScript equivalent to `str(j)`.

Complete the table below.

Line	Effect of Code
1	creates a variable with value of nothing in string type ^{data}
2	starts a for loop that runs as long as long as <code>j</code> is strictly below 200000, increments ^{by 1 each time loop runs.}
3	
4	adds the current value of <code>j</code> in string form ^{into} the variable "total" (a concatenation)
5	Pushes total onto a stack that holds the browser's history.
6	

[2]

[1]

[1]

- 5(a) One page in the website contains a hyperlink on an image. When the image stored as "ticket.png" is clicked, the user is hyperlinked to the page stored as "booking.htm".

Write the HTML code to implement this hyperlink.

`< a href="booking.htm" >`

``

``

[3]

- (b) A website sells tickets for sporting events. The website uses HTML, CSS and JavaScript.

Describe the purpose of HTML and CSS within the code of the website. *Structure*

HTML HTML is responsible for the layout of the website. Like the headers, and text that appear on screen. It is the content of the web page. All the information in the web page for the user is put there using HTML. E.g header that says "Tickets shop"

CSS CSS is used for the styling and design of the web page. Like all the colors, ^{text} styles, background colour. This is all controlled by CSS.

E.g, The header that says "Get your tickets here" is in bold and ~~has~~ red in colour.

[4]

2

- 6 Laser Tag is a game where teams of players move round an arena shooting each other with infrared guns. Players wear sensors that keep track of how many times they have been hit by the laser. This is known as being 'tagged'.

Below is an extract from a Laser Tag company's website:

Reasons to Choose Us

Come play *Laser Tag* with us for:

- State of the art equipment
- Friendly staff
- Match recordings available to purchase
- Buy two games get one free.

The web page is written in HTML.

Write some HTML code which could have been used to produce this extract. You can assume it is already inside <body> tags.

<h1>Reasons to Choose Us </h1>
 Come play Laser Tag with us for:
 State of the art equipment
 Friendly staff
 Match recordings available to purchase
 Buy two games get one free.

[4]

(3)

- 7(a) A website charges a booking fee of £2.99 on each ticket sold. In addition, if the tickets are purchased from outside of the UK, £4.99 is added to the booking fee. The booking fee is calculated using a JavaScript function named `bookingfee()`.

Complete the definition of the `bookingfee()` function below.

```
function bookingfee(numtickets, country) {  
  
    var nonUKprice = 4.99;  
  
    var perTicketPrice = 2.99;  
  
    var total = 0;  
  
    if (country!="UK") {  
        total = total + non UK price;  
    }  
  
    total = total + (num tickets * perTicketPrice);  
  
    return return total;  
}
```

[4]

(b) The JavaScript function above is used to show users the booking fee. When users click to buy the tickets, the booking fee is calculated again on the server.

(i) Explain why server side processing is used to recalculate the booking fee.

If the booking fee is calculated on client side, the client could just change the fee to equal 0 meaning they get the tickets for free, which would be stealing. If processing ~~to~~ to recalculate the booking fee is done on the server side, the company is able ^{to} set the correct booking fee so the company doesn't get robbed from. (1) [3]

(ii) Explain one advantage of client side processing to either the customer buying the tickets, or to company who own the website.

Client side processing is safer for the client because their data does not need to be sent to the servers meaning the data cannot be intercepted and stolen. [2]

END OF QUESTION PAPER

