



# Scott Christian UNIVERSITY

## SCHOOL OF PROFESSIONAL STUDIES

### BACHELOR OF INFORMATION COMMUNICATION TECHNOLOGY

### UNIT CODE/NAME: BCT 314: WEB APPLICATION PROGRAMMING

September – December 2019/2020 End Semester Exam - Time: 2 Hours

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

#### QUESTION ONE

- Explain three ways in which Web applications are revolutionary compared to traditional applications. (6 Marks)
- Discuss the phases of web development (10 Marks)
- Consider the following fragment of JavaScript. Give the output that would be produced in the browser window by the pieces of code in parts (a) through (d) below. (6 Marks)

```
// Part (a)
var i
for (i = 2; i < 8; i += 2) {
  document.writeln("The value of i is "+i+"<br />")
}
```

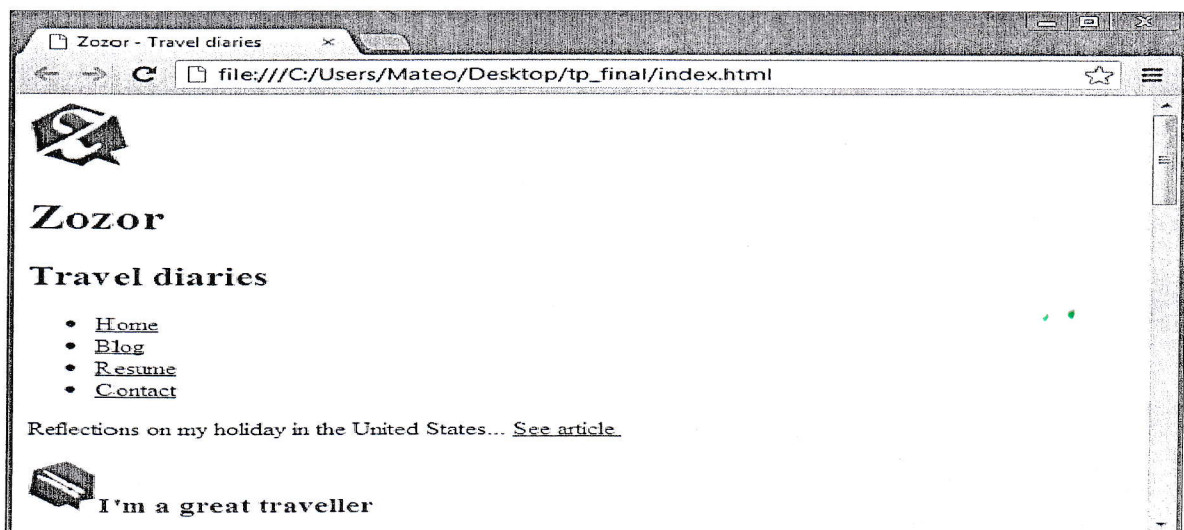
```
// Part (b)
var s = "Able was I ere I saw Elba."
document.writeln(s.indexOf('I'))
  document.writeln("<br />")
```

```
// Part (c)
document.writeln(s.indexOf('I',11))
document.writeln("<br />")
```

```
// Part (d)
document.writeln(s.substring(12,19))
document.writeln("<br />")
```

- Write an HTML code to generate the page shown below

(8 Marks)



## QUESTION TWO

- a) Write a form that will collect information from a visitor and send it to be processed by JavaScript in the page summary.html. The form should collect the following information: petName (the name of a pet), petType (which can be either Dog, or Cat, or Bird) and pedigreed (which is either true or false, and should start out checked). Your form should include a Submit button, and should demonstrate proper use of the <label> tag. (7 Marks)
- b) Explain domain and web hosting (6 Marks)
- c) List any 2 categories of web organizational schemes (2 Marks)

## QUESTION THREE

- a) State the importance of five primary technologies for the web (5 Marks)
- b) Below are pairs of JavaScript commands. For each pair, (i) determine whether a function should be used to carry out the work of both lines, and (ii) if so, give the function definition and set of calls to it that would replace the original pair or commands. An example has been done for you. (10 Marks)

a). document.writeln("My favorite color is blue.<br />")  
document.writeln("My favorite color is red.<br />")

**Ans:** function tellColor(clr) {  
// prints a message about my favorite color.  
document.writeln("My favorite color is "+clr+"<br />")  
}  
tellColor("blue")  
tellColor("red")

b). total += price1+0.05\*price1  
total += price2+0.05\*price2

c). document.writeln("This message will appear in the body.")  
alert("This message will appear in a pop-up window.")

d). document.getElementById("link1").href = "error.html"  
document.getElementById("link2").href = "home.html"

## QUESTION FOUR

- a) Describe a web application (8 Marks)
- b) Give a complete HTML document that would create a set of frames as follows: the right half of the browser window is a single frame named fright showing the file right.html. The left half of the browser window is divided into an upper portion 135 pixels tall, and two lower portions taking up one third and two thirds of the remainder of the window, respectively. These three frames should display the files logo.jpg, toc.html, and help.html, respectively, and should be named flogo, ftoc, and fhelp. (7 Marks)

## QUESTION FIVE

- a) State 2 different ways that CSS supports the DRY (Don't Repeat Yourself) principle. (1 Mark)

b) Given the following pairs of potential attacks and countermeasures, state whether the countermeasure is ineffective, somewhat effective, or very effective against the attack, and justify your answer: **(8 Marks)**

- i. Spoofed sites for phishing : extended validation certificates
- ii. Session hijacking via stolen cookies : HTTPS
- iii. Mixed content attack : relative resource links
- iv. SQL injection : escaping user-supplied data when generating HTML

c) Write three style rules for the following HTML snippet, as described below. **(6 Marks)**

```
<p class="poetry" id="stanza1">  
'Twas brillig, and the slithy toves  
Did gyre and gimble in the wabe  
All mimsy were the borogoves  
And the mome raths outgrabe.  
</p>
```

- i. Write a rule that would make this and all other paragraphs appear in 12-point font.
- ii. Write a rule that would make this and other paragraphs in the same class as this example appear in italic type.
- iii. Write a rule that would make this particular paragraph only appear in bold type.