Sri Lanka Institute of Information Technology

B. Sc. Special Honours Degree/ Diploma
in
Information Technology

Final Examination
Year 1, Semester II (2017)

IT104 - Internet Technology and Applications

Duration: 02 Hours

Instruction to Candidates:

- This paper has 03 questions. Answer all questions.
- Provide answers on the answer booklet given.
- Total marks 100.
- This paper contains 05 pages including the Cover page.

Question 1 (20 Marks)

a) A VPN (virtual private network) is an extension of a private network over a larger public one, such as the Internet. Name two reasons to implement VPN in an organization.

(4 marks)

b) Briefly explain two advantages and two disadvantages of Peer-to-Peer Architecture.

(8 marks)

c) Some of the disadvantages of The internet are given below. Explain two of them.

- Theft of Personal Information
- Spamming
- Malware Threats
- Age-inappropriate Content
- Social Isolation, Obesity, and Depression

(8 marks)

Question 2 (20 Marks)

a) Define "**Cross Channel Marketing**"

(4 marks)

b) Social media marketing is the use of social media to market a product or service. It helps to achieve higher "**conversion rates**". Explain the term "**conversion rate**" in this context.

(4 marks)

c) Compare and contrast **Symmetric** and **Asymmetric cryptographic** algorithms emphesizing strategies and weaknesses of each.

(6 marks)

d) Briefly explain the security properties given by a **Digital Signature**.

(3 marks)

e) Briefly explain the purpose of **hash function** in the context of cyber security.

(3 marks)

Question 3 (60 Marks)

a) Study the given source code in Appendix A ("**StringProcessor.html**"). Attach Appendix A to the answer booklet given and write codes (HTML.CSS or JavaScript) according to the tasks given in the table below (i – xvi). You can refer some useful syntaxes given in page 4.

<table>
<tr><th>StringProcessor.html
Line No.</th><th>Task</th><th></th></tr>
<tr><td>38</td><td>i) Add "*--- Text Converter ---*"as a H3 type header.</td><td>2 mark</td></tr>
<tr><td>39</td><td>ii) Add a text box with an id "inText"</td><td>2 marks</td></tr>
<tr><td rowspan="2">40-43</td><td>iii) Add four buttons as follows
<table>
<tr><th></th><th>id</th><th>value</th></tr>
<tr><td>Button 1</td><td>a-z</td><td>Convert to Simple</td></tr>
<tr><td>Button 2</td><td>A-Z</td><td>Convert to Capital</td></tr>
<tr><td>Button 3</td><td>length</td><td>String Length</td></tr>
<tr><td>Button 4</td><td>0-9</td><td>Digits Only</td></tr>
</table></td><td>8 marks</td></tr>
<tr><td>Call the JavaScript function "TextConverter(op)" in each button click event by passing the individual button ids namely a-z, A-Z, length and 0-9.</td><td>8 marks</td></tr>
<tr><td>44</td><td>iv) Add a paragraph with an id "result"</td><td>2 marks</td></tr>
<tr><td>3</td><td>v) Start a javascript code block</td><td>2 mark</td></tr>
<tr><td>5</td><td>vi) Declare a javascript function "TextConverter(op)" to accept the button id.</td><td>2 mark</td></tr>
<tr><td>8</td><td>vii) Assign textbox (inText) input value in to the JavaScript variable "text".</td><td>2 marks</td></tr>
<tr><td>10-12</td><td>viii) If user press the button (a-z), Convert the input text in to the lowercase and assign to the variable "result".</td><td>4 marks</td></tr>
<tr><td>13-15</td><td>ix) If user press the button (A-Z), Convert the input text in to the uppercase and assign to the variable "result".</td><td>4 marks</td></tr>
</table>

16-18	x)	If user press the button (length), Calculate the length of the input text and assign to the variable "result".	4 marks
20	xi)	Display the value of "result" in the paragraph (result) as an " inner HTML".	2 marks
23	xii)	Declare a javascript function **function GetNum()**	2 mark
26	xiii)	Assign textbox (inText) input value in to the JavaScript variable "text".	2 marks
29	xiv)	Read the input string	4 marks
30	xv)	Extract all the digits (0 to 9)	6 marks
31	xvi)	Display all the extracted digits in the paragraph (result) as an "inner HTML".	4 marks

Useful JavaScript methods and properties:

- **document.getElementById("xyz").innerHTML="ABC";**
  The innerHTML property sets the HTML content "ABC" of an element "xyz".

- **document.getElementById("xyz").innerHTML;**
  The innerHTML property returns the HTML content (inner HTML) of an element "xyz".

- **string.length**
  The length property returns the length of a string (number of characters).
  The length of an empty string is 0.

- **text.charAt(i)**
  The charAt(i) method returns the character at the specified index "i" in a string named text.
  The index of the first character is 0, the second character is 1, and so on.

- **isNaN()**
  The isNaN() function determines whether a value is an illegal number (Not-a-Number).
  This function returns true if the value equates to NaN. Otherwise it returns false.

End of the Question Paper

Appendix A – Source code of **StringProcessor.html**

```
1.  <html>
2.  <head>
3.
4.  //----------------------function TextConverter() ----------------------------------------
5.                                          {
6.  var result="";
7.  var text="";
8.  text=
9.  switch(op) {
10. case "a-z":
11.
12.
13. case "A-Z":
14.
15.
16. case "length":
17.
18.
19. }
20.
21. }
22. //-----------------------function GetNum() ----------------------------------------
23.                         {
24. var text="";
25. var result2="";
26. text=
27. document.getElementById("result").innerHTML="";
28. var i;
29. for (                        ) {
30. if (                        ) {
31.
32. }
33. }
34. }
35. </script>
36. </head>
37. <body>
38.
39. Input Text
40.
41.
42.
43.
44.
45. </body>
46. </html>
```