

THE OPEN UNIVERSITY OF SRI LANKA
Faculty of Engineering Technology
Department of Electrical & Computer Engineering



Bachelor of Software Engineering Honours

Final Examination (2016/2017)
ECI4164: Networking and Web Technology

Date: 18th November 2017 (Saturday)

Time: 9:30 am – 12:30 pm

1. *This is a CLOSED BOOK examination.*
2. *This question paper contains six (06) questions.*
3. *Answer any FOUR (04) questions. Each question carry equal marks.*

Q1.

- a) What is DOM and what are the components in HTML it defines? (4 Marks)
- b) Can you change CSS of an element using DOM? Justify your answer. (4 Marks)
- c) Can you delete elements in a web page using DOM? Justify your answer. (4 Marks)
- d) How do you identify the difference between HTML and XHTML by looking at the markup? (4 Marks)
- e) Write HTML code for the following table shown in Figure Q1. (*Hint: Code between <table> ... </table> is sufficient for the answer. And use rowspan and colspan appropriately*) (9 Marks)

heading1	heading2	heading3	heading4
Value 1		Value 2	Value 3
		Value 4	
		Value 5	Value 6
Value 7	Value 8	Value 9	Value 10

Figure Q1: HTML Table

Q2.

- a) What is an IP address (2 Marks)
 b) What are the available IP address classes? Explain with suitable examples. (3 Marks)
 c) Consider the following IP address and answer the questions.

IP Address: 128.42.11.4/21

- I. What is the broadcast address of the network?
 II. What is the network prefix of this network?
 III. What is the subnet-mask of this network?
 IV. Split the above network into two subnets and identify how many IP addresses are available in each subnet.

(5 x 4 = 20 Marks)

Q3.

- a) What is CSS related to web design? (2 Marks)
 b) Explain how do you use CSS and JavaScript together to hide and show an image on a button click (mention ONLY the steps, no code is required) (4 Marks)
 c) What is CSS class grouping and what are the advantages (explain at least two advantages) (4 Marks)
 d) List three ways that we can add CSS to an HTML page, and briefly explain how the style is applied when the style is defined for a particular element in all three ways. (4 Marks)
 e) How do you apply a style to all the paragraph within an element with id "paragraph container"? (4 Marks)
 f) Rewrite the following three classes to a single class, using CSS grouping

```
h1 {
    text-align: center;
    color: red;
}
h2 {
    text-align: center;
    color: red;
}
p {
    text-align: center;
    color: red;
}
```

(7 Marks)

Q4.

- a) Write a JavaScript function to accept *firstName* and *lastName* as arguments and return *fullName*. (6 Marks)
- b) What is the output of the following code?

```
var i;
for (i = 0; i < 10; i++) {
    if (i === 3) { continue; }
    text += "The number is " + i + "\n";
}
console.log(text);
```

(6 Marks)

- c) What will be printed in console when following JavaScript code is executed? Briefly explain the output of the following code.

```
var lastName;
lastName = "Silva";
console.log(lastName);
```

(6 Marks)

- d) Consider the following JavaScript code, what will be printed in the console?

```
var fullname = 'John';
var obj = {
    fullname: 'Smith',
    prop: {
        fullname: 'Perera',
        getFullname: function() {
            return this.fullname;
        }
    }
};
console.log(obj.prop.getFullname());
console.log("\n");
var test = obj.prop.getFullname;
console.log(test());
```

(7 Marks)

Q5.

- a) Is PHP case sensitive? (2 Marks)
- b) Explain the difference between *pass by value* and *pass by reference* in PHP, using an example. (5 Marks)
- c) There are three scopes for variables in PHP, state and briefly explain them using examples. (3 Marks)
- d) Briefly explain the difference between "=", "==", and "===" in PHP (3 Marks)
- e) What is an associative array in PHP? (2 Marks)
- f) How do you define and access associative array elements in PHP? (4 Marks)
- g) Write a function that *acceMarks* an integer as the input parameter to do the following, (hint: use most suitable conditional statement type)

If integer value is 10, return "White"

If integer value is 9, return "Blue"

If integer value is 8, return "Green"

If integer value is 7, return "Red"

For any other value, return "Black"

(6 Marks)

Q6.

- a) Briefly explain *well formed* and *valid* XML documents.
- b) What is an XML Parser ?
- c) Briefly explain the use of XPATH.
- d) What is a namespace in XML ?
- e) What is XSLT stands for ? explain the use of XSLT.

(5 x 5 = 25 Marks)