THE OPEN UNIVERSITY OF SRI LANKA

Department of Electrical & Computer Engineering
Bachelor of Software Engineering

FINAL EXAMINATION – (2011/2012)

ECI4164 - Networking and Web Technology

CLOSED BOOK EXAM

Time Allowed: **3 hours**

Date: 25th February 2012 **Time: 1330 – 1630 hours**

INSTRUCTIONS TO CANDIDATES

1. *This question paper contains 3 question in **Part A**, and 3 questions in **Part B** on 3 pages.*
2. *Answer **TWO** questions from **Part A** including **question 1.***
3. *Answer any **TWO** questions from **Part B.***
4. *Each question carries **25 marks.***

Continued...

Part A:

Answer question 1 and <u>any</u> one question from question 2 and question 3 in <u>Part A</u>

Question 01

Assume you need to design a computer network for a Computer Sales and Marketing Company in Sri Lanka.

The company has its head office at Colombo and 3 branches in Colombo, Kandy and Matara. The management wants to link all 3 branches with the Colombo head office.

Main company needs 5 computers, one server and a 2 network printers. It was decided to purchase 3 computers and one network printer for each branch. Head office maintains all database transactions and the main server. All the computers in the branches should connect with the main server to complete the transactions.

Answer the following questions, based on the above network:

a. Draw a best suitable network diagram for the above network. Explain why it can be considered as a best network diagram.
b. Justify the need of each hardware device you may use in the network at different locations.
c. What are the operating system software and other packages, you can install in each of these computers. Justify your answer.

Question 2

a. Explain the term ***"layered network model"*** with examples.
   (i) What are the advantages of using layered network models?

b. Describe OSI layered model with functions related to the each layer.
c. How do you categorize a network according to its topology?

Question 3

a. What are the common WAN types?
   (i) Briefly describe their advantages and disadvantages.

b. What are the variations of xDSL in use today?
c. Differentiate between the *connection- oriented* and *connectionless* services.

Part B:

*Answer **any two** questions from **Part B***

Question 4

a. Explain the functions of a web server and its interactions with web browsers.
b. Describe the following acronyms, and write brief description of each.
   1) URL
   2) DNS
   3) SSL
   4) DTD
   5) HTTPS

c. What are the benefits of using XHTML validator at http://validator.w3.org/ ?

Question 5

a. Write a XHTML home page for a University library web site. *(This web page should include at least 5 different html element types including hyperlinks and images.)*
b. Create and apply an external style sheet to change the appearance of the web page.
c. Write a JavaScript function to check whether a value of a text box is between 0 and 5.

Question 6

a. What are the differences between *HTML* and *XML*?
b. Briefly explain the functions of an XML parser.
c. Write a XML file to represent following data set.

MessageID, From, To, Subject, Message
122, Sarath, Prasanna, Reminder, Meeting at 10AM
132, Gamini, Thushan, Project Report, Soft copy attached
134, Sithari, Kevin, Workshop, Work shop on 22/03/2012
145, Menaka, Dilshi, Party, Office Party on Friday

--- The End ---