



**EASTERN UNIVERSITY, SRI LANKA**  
**DEPARTMENT OF MATHEMATICS**  
**EXTERNAL DEGREE EXAMINATION IN SCIENCE -2009/2010**  
**THIRD YEAR SECOND SEMESTER (Apr./ May , 2016)**  
**EXTCS303 - INTERNET AND MULTIMEDIA APPLICATIONS**  
**(REPEAT)**

Answer all Questions

Time: 2 Hours

1)

i) Define the following terms:

- a) Internet;
- b) Intranet;
- c) Topology of the Internet;
- d) Internet Service Provider(ISP);
- e) Distributed applications.

ii) Describe the uses of the internet.

iii) Briefly explain each layers of **TCP/IP Reference Model**:

iv) Distinguish between Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).

v) Briefly explain the IPV4 (classful) format:

vi) Briefly explain the following two approaches:

- a) Dual Stack approach;
- b) Tunneling approach.

Q2)

- i) List three protocols which are commonly used in E-mail. State the main function of those protocols.
- ii) Distinguish between persistent and non-persistent connections.
- iii) Consider the url <http://www.esn.ac.lk/sci/math/com.html>, and write the sequence of steps to fetch this site using non-persistent connection.
- iv) Explain the HTTP Request and Response messages with the example.
- v) Briefly describe the scenario to send an e-mail from a person Bob to Bubby.

Q3)

- i) What is meant by **Subnetting** and Why we need to subnet the network addresses?
- ii) Consider an organization that needs to assign 120 hosts to connect the internet. Explain how to choose the most appropriate IPV4 class in classful address.
- iii) Consider a class B address: 129.10.h.h, and its default subnet mask of 255.255.0.0. This needs to be rearranged with its 120 subnets, find the following:
  - a) Subnet mask;
  - b) IP address of Subnet 2 and its usable host range;
  - c) 3<sup>rd</sup> Subnet ID and Broadcast address;
  - d) What subnet does the address 129.10.21.200.
- iv) The source host has an IP address of 194.168.0.1 and a subnet mask of 255.255.255.0. The destination host has an IP address of 194.168.25.33. Determine whether these hosts are on the same subnet or different subnets.

) What is the main difference between HTML and XHTML?

i) Briefly describe the use of the following tags:

- a) `<html></html>`;
- b) `<body bgcolor=?>`;
- c) `<em></em>`;
- d) `<ul></ul>`;
- e) `<a href=?>`.

iii) Explain the difference between lossy and lossless data compression:

iv) Write down three services of Domain Name System(DNS).

v) Why we need to compress data in a multimedia system and List two types of data compression methods.

vi) Apply **Run Length Encoding (RLE)** data compression technique to write the outputs for the following inputs:

- a) COMPPPPUTER;
- b) CCCCCCCCPUTERR;
- c) COMPUTERSSSSSSSSSSSCIIIIHNNCCCCC.....CCCCC (300 Cs)E.