



EASTERN UNIVERSITY, SRILANKA

DEPARTMENT OF MATHEMATICS

SPECIAL REPEAT EXAMINATION IN SCIENCE –2007/2008

THIRD YEAR, FIRST AND SECOND SEMESTER (Feb, 2010)

CS 303 – INTERNET AND MULTIMEDIA APPLICATIONS

Answer all questions

Time allowed: 02 hours

Q1.

- a) Define the following terms:
- i. Internet;
 - ii. TCP/IP;
 - iii. Communication Links and Routers;
 - iv. Packet Switching;
 - v. Intranet.
- b) The internet connects many networks each of which runs a protocol known as *TCP/IP* (Transmission Control Protocol/ Internet Protocol). Draw the block diagram to describe the relation of "*TCP*", "*IP*", and "*UDP*" (User Datagram Protocol) and explain various protocols involved in each layer.
- c) Draw the "*IPV6*" packet format and explain each component of this packet.
- d) Explain the most important changes introduced in *IPV6* over *IPV4*.

Q2.

- a) Describe the "**IP**" addressing procedure.
- b) The source host has an IP address of 192.168.0.10 and a subnet mask of 255.255.255.0. The destination host has an IP address of 192.168.10.2. Determine if these hosts are on the same subnet or different subnets.
- c) Describe **LAN addresses** and **Address Resolution Protocol (ARP)**.
- d) Briefly explain the following:
 - WWW;
 - HTTP;
 - Web Page and URL ;
 - Browser;
 - Web server.
- e) Describe briefly **non-persistence** and **persistence** connections which are used to transfer web pages from server to client.

Q3.

- a) Explain how a web-cache satisfies an **HTTP** request on behalf of a client.
- b) Describe the three major components of an E- mail system:
- c) Describe the following type of WebPages
 - a. Static web pages
 - b. Dynamic web pages
 - c. Active web pages.

d) What is the main difference between HTML and XHTML?

e) Briefly describe the use of the following tags in "XHTML":

i. `<body vlink=?>`;

ii. `<h1></h1>`, `<h2></h2>`, `<h3></h3>`,

`<h4></h4>`, `<h5></h5>`, `<h6></h6>`;

iii. ``;

iv. `<p align=?>`;

v. ``;

vi. `<hr size=?>`;

vii. `<table></table>`.

Q4.

a) Briefly describe the term **Data Compression** and Identify two important compression concepts.

b) Define the terms "**interactive multimedia**".

c) Describe how multimedia can be applied in education and training.

d) Write down **Lempel-Ziv-Welch (LZW)** compression Algorithm.

e) The **Lempel-Ziv-Welch (LZW)** compression algorithm replaces string of characters with single code. Give the **LZW** compression algorithm in its simplest form. Run the **LZW** compression algorithm for the string "xyzxyzxyzxyzxyz", creating the corresponding compression table.

f) State clearly what is meant by "**Video - on - Demand**".