EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
THIRD EXAMINATION IN SCIENCE –2013/2014
SECOND SEMESTER (OCT, 2017)
CS303 – INTERNET AND MULTIMEDIA APPLICATIONS
(SPECIAL REPEAT)

Answer all Questions **Time: 2 Hours**

Q1)

i) State the definition of internet.
ii) Describe the uses of the internet.
iii) Describe the following network services:
   a. Connection oriented;
   b. Connectionless.
iv) Briefly explain each layers of TCP/IP Reference Model:
v) Write short notes on the following topics:
   a. Internet Service Provider (ISP)
   b. Address Resolution Protocol (ARP)
vi) Briefly explain the following two approaches:
   a. Dual Stack approach;
   b. Tunneling approach.

Q2)

i) Describe IPV4 address format using classful addressing diagram.
ii) State three problems with classful IP address.
iii) Distinguish between Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).
iv) Consider a class B address, 180.10.h.h, and its default mask of 255.255.0.0 If this needs to be rearranged with 66 subnets, find the following:
   a. Subnet mask;
   b. IP address of Subnet 4 and its usable host range;
   c. 6^{th} Subnet ID and its Broadcast address;
   d. What subnet does the address 180.10.3.20 belongs to.
v) Consider an organization that needs to assign 254 hosts to connect the internet. Explain how to choose the most appropriate IPV4 class in classful address.

Q3)

i) Consider the url http://www.esn.ac.lk/sci/maths/comp.html, and write the series of steps to fetch this site using non-persistent connection.

ii) Explain the HTTP Request and Response messages with the example.

iii) Briefly describe the scenario to send an e-mail from a person Bob to Bubby.

iv) List three protocols which are commonly used in E-mail. State the main function of those protocols.

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

Q4)

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

ii) Briefly describe the use of the following tags:

a) <body bgcolor=?>;

b) ;

c) ;

d) <a href=?>.

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

iv) The Lempel-Ziv-Welch (LZW) compression algorithm replaces string of characters with single code. Create the LZW compression table for the string LMNOLMNLMNNLMNPLMNQ

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

a) AMCCDDEEEEE;

b) PPPPPPPPPQRRRQ;

c) ABCDEEFFFGGGGGGGGGGCCCCCC.....CCCCC (300 Cs)A.