EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
THIRD YEAR EXAMINATION IN SCIENCE - 2012/2013
SECOND SEMESTER (Sept./Oct., 2015)
CS 303 – INTERNET AND MULTIMEDIA APPLICATIONS
(PROPER & REPEAT)

Answer all questions   **Time allowed: 02 hours**

1. The Internet interconnects hundreds of millions of computing devices throughout the world.

a) Describe briefly the uses of Internet with respective examples.

b) What are the major differences between TCP/IP and ISO-OSI reference models?

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

d) Write short notes on following topics:
   i.   Hypertext;
   ii. File Transfer Protocol(FTP);
   iii. Internet Service Provider(ISP);
   iv. Cookies in internet.

2. An IP address is that uniquely and universally defines the connection of the end system to the internet.

a) What is subnetting? Why we need to subnet the network addresses?

b) Draw a flow chart to find out the class of given network address.

c) Consider a class B address, 181.2.h.h, and its default mask of 255.255.0.0 if this needs to be rearranged with 64 subnets, Find:
   i.   The subnet mask;
   ii. 3rd subnet ID and its broadcast address;
   iii. IP address of subnet 5 & its usable range;
   iv. What subnet does the address 181.2.3.40 & 181.2.33.69 belongs to and what are their subnet & broadcast addresses respectively.

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03.

a) Discuss the process of Address Resolution Protocol (ARP) with a simple example.

b) Hyper Text Transfer Protocol (HTTP) is the foundation of data communication for the World Wide Web. Briefly explain how HTTP works.

c) Distinguish between persistent and non-persistent connections.

d) Two types of HTTP messages are given below:

```
GET /doc/test.html HTTP/1.1 ——————→   x
Host: www.test101.com
Accept: image/gif, image/jpeg, */*
Accept-Language: en-us
Accept-Encoding: gzip, deflate        y
User-Agent: Mozilla/4.0
Content-Length: 35

bookId=12345&author=Tan+Ah+Teck    }  z
```

```
HTTP/1.1 200 OK
Date: Sun, 08 Feb xxxx 01:11:12 GMT
Server: Apache/1.3.29 (Win32)
Last-Modified: Sat, 07 Feb xxxx
ETag: "0-23-4024c3a5"
Accept-Ranges: bytes
Content-Length: 35
Connection: close
Content-Type: text/html

<h1>My Home page</h1>
```

Figure a   Figure b

i.   Identify above two types of HTTP messages.
ii.   Name the parts of above HTTP messages which indicates x, y, z and p, q, r.
iii. What is the version of these HTTP messages?
iv.   What do you understand from the common status code "*200 OK*" in figure b?
v.   What is meant by the request method *GET*?

04.

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

b) Briefly explain the process of sending E-mail from a sender to a recipient. (Use appropriate figure support your answer.)

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

d) Why we need to compress data in a multimedia system?

e) List two types of data compression method with example.