

EASTERN UNIVERSITY, SRILANKA

DEPARTMENT OF MATHEMATICS

EXTERNAL DEGREE EXAMINATION IN SCIENCE –2008/2009

THIRD YEAR ~~FIRST~~ <sup>SECOND</sup> SEMESTER (Jan, /Feb, 2011)

EXTCS 303 –INTERNET AND MULTIMEDIA APPLICATIONS

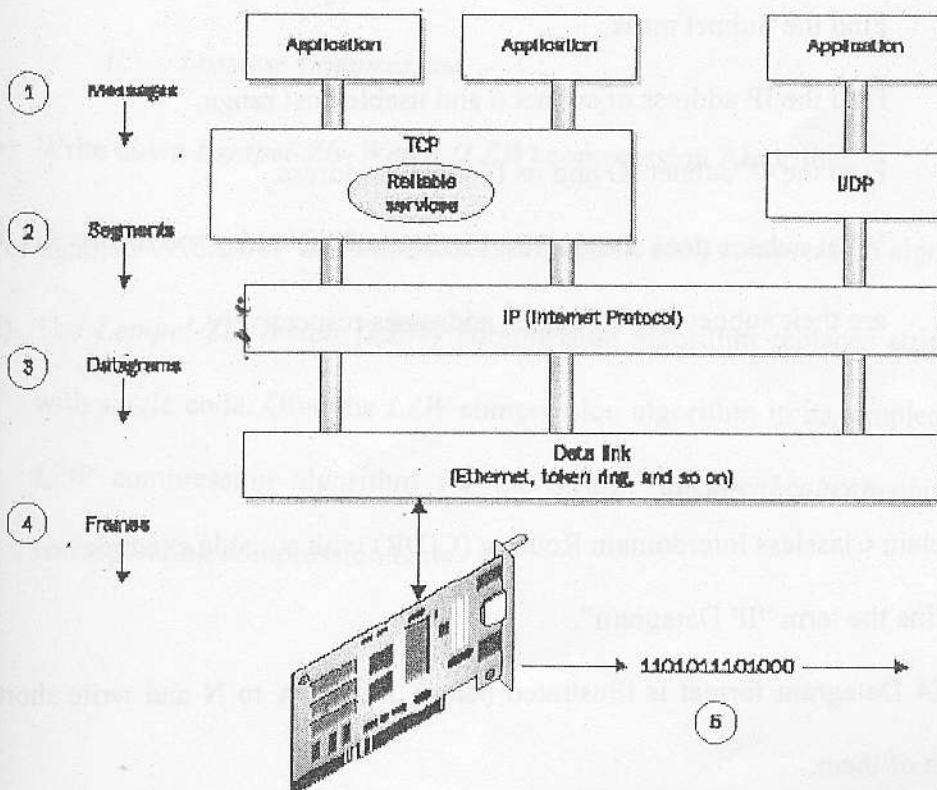
(PROPER)

Answer all questions

Time allowed: 02 hours

Q1)

- a) What is meant by the internet?
- b) What is the difference between the Internet and the World Wide Web (WWW)?
- c) The figure below describes the TCP/IP protocol stack in relation to applications and the network.



Briefly describe the following:

- i. Messages;
- ii. Segments;
- iii. Datagram;
- iv. Frames.

d) Briefly describe TCP/IP Reference Model.

e) Describe the three major components of an E- mail system

Q2)

a) Briefly explain the IPV4 address format.

b) What is meant by the “subnetting”?

c) What are the advantages of subnetting?

d) Consider a class C address 130.2.h.h and its default mask of 255.255.0.0 if this to be rearranged with 64 host subnet,

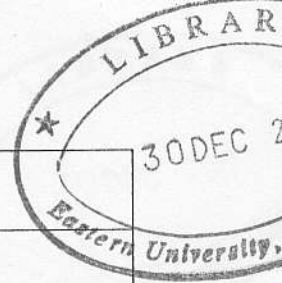
- i. Find the Subnet mask,
- ii. Find the IP address of subnet 6 and usable host range,
- iii. Find the 4<sup>th</sup> subnet ID and its broadcast address,
- iv. What subnet does the address 130.2.3.20 and 130.2.3.99 belongs to and are their subnet and broadcast addresses respectively.

Q3)

a) Explain Classless Interdomain Routing (CIDR) with suitable example?

b) Define the term “IP Datagram”.

c) IPV4 Datagram format is illustrated below, Define A to N and write short notes each of them,



A	B	C	D	
E		F	G	
H	I		J	
K				
L				
M				
N				

- d) Briefly explain the IPV6 addressing format.
- e) Explain any one of the approaches of transitioning from IPV4 to IPV6.

Q4.

- a) Define the following terms:
  - i. *Lossy Compression*
  - ii. *Lossless Compression*
- b) Write down *Lempel-Ziv-Welch (LZW)* compression Algorithm.
- c) Draw the flow chart for *Lempel-Ziv-Welch (LZW)* compression algorithm.
- d) 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 "*abcabcabcabcabcabc*", creating the corresponding compression table.