

School of Mathematics & Computer Applications

CA-015(Computer Networks)

End Semester Exam. (12/12/2006)

Time: 3 Hr

M.M. 36

Note: Question No. 1 is **compulsory**. Attempt only five questions are ~~compulsory~~. Attempt all parts of a question in sequence.

- Q1.a How a network software is designed? Explain your answer in detail. 3
- b What is the difference between fully qualified domain name and flat names? Is it possible to use the flat name on the Internet? Explain the service which uses FQDN and which uses flat names. 3
- c Explain any four services for which UDP protocol is preferred? Give 2 reason. 2
- Q2.a If the data link can detect errors between hops, do you think why we need another checking mechanism at the transport layer? Explain your answer. 2
- b Explain the functionalities of the presentation layer in OSI reference 3 model? 3
- c Calculate the bit rate for a telephone having bandwidth of 3000 Hz and signal to noise ratio 4095. How we can increase the bit rate from the calculated value? 2
- Q3.a What is multiplexing? Explain FDM. 2
- b Compare and contrast the Go Back N ARQ protocol with Selective Repeat ARQ? 2
- c Construct the Hamming code for the bit sequence 1001001100, by using 3 even parity. Explain your answer. 3
- Q4.a When bit stuffing is used, is it possible for the loss, insertion, or 3 modification of a single bit to cause error not detected by the checksum? If not, why not? If so, how? Does the checksum length play a role here?
- b Find the maximum throughput for the pure ALOHA and slotted ALOHA. 2
- c What is multiple access? Which sub layer controls the multiple access in a 2 standard Ethernet?
- Q5.a Is Internet connection oriented or connectionless architecture? Explain 3 your answer?

- b An Ipv4 packet arrived with the first few hexadecimal digits as shown 2
0x 45000028000202...
How many hops this packet can travel before being dropped? Write the upper layer protocol number to which the packet belongs?
- c What is address aggregation? Why it is used? 2
- Q6.a Explain the ARP packet format? 3
- b Explain the addresses, which are used in the networking? 2
- c Explain the use of XOR and AND operation in the networking. Explain with examples. 2
- Q7.a Explain the TCP header, in detail? 3
- b Explain the following services 2
(i) Ping
(ii) Telnet
- c Which one is faster FTP or TFTP? Give reasons for your answer 2