

SOUTH EASTERN UNIVERSITY OF SRI LANKA
FOURTH YEAR EXAMINATION IN BACHELOR OF BUSINESS ADMINISTRATION &
COMMERCE – 2006/2007
SEMESTER – I, DECEMBER 2007

MIS 4110 – INFORMATION & COMMUNICATION NETWORK

Answer **all** questions.

Time: 03 hours

01. a) Describe two main security risks of data transmission over the Internet? (04 marks)
- b) Using an example, explain how parity check is used to detect data errors. (04 marks)
- c) Find the data word with parity for the code word “0110101” using Hamming Code technique. (06 marks)
- d) i) What is transmission impairment? (02 marks)
- ii) Give three examples for the transmission impairment. (03 marks)
- iii) Briefly discuss each of them. (06 marks)
- (Total 25 marks)
02. a) Why encryption is used in data transmission? (03 marks)
- b) Discuss the importance of Public Key and Private Key cryptography in data transmission with a suitable example. (08 marks)
- c) OSI layer has seven layers. Briefly describe the functions handled by each layer? (08 marks)
- d) List three network topologies used in networking. (03 marks)
- e) For each of the network topologies you listed above, give two advantages and two disadvantages. (03 marks)
- (Total 25 marks)

03. a) If you are given a sub netted class – C IP block of 14 usable addresses, what would be the subnet mask used to configure the hosts?
(01 marks)
- b) Given a class C network of 204.15.5.0 which has a natural mask 255.255.255.0, create 8 subnets and specify their ranges using a network diagram.
(10 marks)
- c) Draw the signal – time diagram that results in encoding the bit pattern 1010011101 using Manchester Encoding format.
(05 marks)
- d) Name two broad classes of Network Operating Systems. Identify an advantage and a disadvantage of each of them.
(04 marks)
(Total 25 marks)
04. a) Give a brief description of the steps followed by a host in accessing a CSMA/CD network.
(05 marks)
- b) Distinguish between Ethernet hubs, switches and IP routers in terms of their functionality.
(05 marks)
- c) Briefly describe the following terms.
- i) Firewall
 - ii) Digital Signature
 - iii) ISDN
 - iv) Bluetooth
 - v) ADSL
- (15 marks)
(Total 25 marks)

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