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EASTERN UNIVERSITY, SRI LANKA

THIRD YEAR SECOND SEMESTER EXAMINATION IN SCIENCE - 2005/2006

(Aug/Sep, 2007)

CS 302 – Computer Networks

(Special Repeat)

Answer all questions   **Time Allowed: 02 Hours**

Q1)

a) List the seven layers of the OSI reference model and briefly describe the function of each layer.   (40)

b) Define the following terms under the data transmission:

    i) Frequency.

    ii) Spectrum.

    iii) Bandwidth. $(3 \times 5 = 15)$

c) Give a description of the application and limitation of each of the following types of transmission media:

    i) Optical Fiber Cable.

    ii) Satellite Microwave.

    iii) Broadcast Radio. $(3 \times 15 = 45)$

Q2)

a) Briefly describe the characteristics of the following multiplexing:

   iv) Frequency – Division Multiplexing.

   v) Synchronous Time – Division Multiplexing. (2 x 1

b) Describe each of the following switching techniques:

   i) Circuit switching.

   ii) Packet switching. (2 x 1!

c) List the main type of network topology currently in widespread use for LAN's an
   the aid of sketches, explain their operation.

Q3)

a) In the Networking environment "ISO/OSI" layers are very essential to transfer th
   "Data Link Layer" is the one of the layer in the "ISO/OSI" model. In this layer
   protocols are used to perform their duty. Here "Go – Back –N" and "Selective R
   protocols are used in this layer. Discuss the mechanism involved in the above prot

b) What do you mean by the term "Carrier Sense Multiple Access (CSMA)"?

Q4) Briefly describe the following topics:

a) Star – Ring Network Topology.

b) Router.

c) Bridge.

d) Parity Check.

e) Internet Protocol (IP). (20 x 5 = 10(