THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME: LEVEL 05
NO BOOK TEST 1 - 2011/2012
CPU3245 – COMPUTER NETWORKS AND SECURITY
DURATION: One and Half hours

Date: 02/03/2012 **Time: 4.00pm – 5.30pm**

Answer All Questions

QUESTION 1

1.1) Give a definition for a *node* in a computer network. List four (4) categories of components in a computer network by giving one example for each category.

1.2) What is the command that you need to issue in order to obtain the detailed network adapter information in a Windows Host?

1.3) Explain PAN and CAN network classifications.

1.4) Describe three (3) main topologies in computer networks with suitable diagrams. What could be the network topology used in the Computer Science laboratory of the Colombo regional centre.

1.5) List the differences in the functionality of a network switch and a network hub.

QUESTION 2

2.1) What is a protocol in the context of computer networking? Give an example for a connectionless protocol.

2.2) List the layers of the OSI model and the Internet model with the proper layer numbers.

2.3) Give the correct syntax of the command to find the intermediate node addresses of the packet routing path for the site www.cnn.com ?

2.4) Draw a diagram to show the process happens when a chunk of data is transmitted from Layer 7 to Layer 1 in the OSI model with proper names of the protocol data units.

2.5) Suppose you want to send a file of the size 1.2Gb from Colombo to Kandy and Matara via a WAN. The speed of the connectivity to the Internet in Colombo is 10Mbps and speed of connectivity to the Internet in Kandy and Matara is 2Mbps and 1Mbps respectively. Calculate the time required to send the file from Colombo to Matara and Colombo to Kandy. State all the assumptions and show the calculations.

QUESTION 3

3.1) What is meant by packet switching and circuit switching?

3.2) Identify the speed, the media type and the maximum distance supported in the following terms.

1. 10Base5
2. 10BaseT
3. 1000BaseSX

3.3) Give the color code of the Crossover UTP network cable in both sides.

3.4) Explain the functionality of the protocols PURE ALOHA and Slotted ALOHA.