

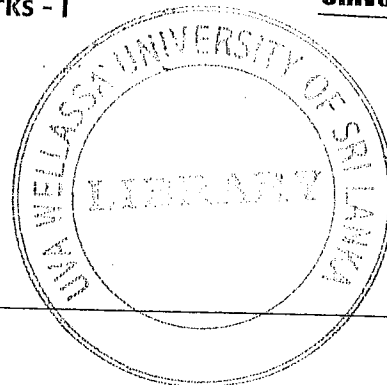
Part B

Instructions to candidates

Number of questions: Three (03) essay questions

Answer all questions

Mark allocation: 60 mark



1.
 - a. List and describe the components of the data communication model by using a diagram. (6 mark)
 - b. List two (02) guided media types and give two (02) characteristics for each. (6 mark)
 - c. Describe two (02) usages of computer networks. (4 mark)
 - d. Name and describe the categories of computer networks based on the scale. (4 mark)

2.
 - a. Briefly explain the client server architecture using a diagram. (4 mark)
 - b. Briefly explain 'periodic signal' in data transmission. (2 mark)
 - c. Name the parameters of a sine wave. (3 mark)
 - d. What is meant by 'line configuration' of a network? (2 mark)
 - e. Compare and contrast Internet Protocol address version 4 (IPv4) with Internet Protocol address version 6 (IPv6). (7 mark)
 - f. Write network commands to carryout the following tasks in Windows operating system.
 - i. To get the IP address of your computer. (1 mark)
 - ii. To check whether a remote computer is connected or not. Assume that the IP address of the remote computer is 10.93.9.44 and it is in the same network. (1 mark)

3.
 - a. 192.168.48.30 / 27 IP address was assigned to a device in a network.
 - i. What is the class of the above IP address? (1 mark)
 - ii. How many bits were used for this network? (1 mark)
 - iii. What is the network address? (2 mark)
 - iv. Write the subnet mask (net mask) of the above IP address. (2 mark)
 - v. How many subnets that you can build in the above network? (2 mark)
 - vi. How many hosts (maximum number) could be connected to the above network? (2 mark)

b. Answer the given questions based on the following output.

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Connection-specific DNS Suffix . : cst.uwu.ac.lk
Description . . . . . : Intel (R) WiFi Link 5100 AGN
Physical Address . . . . . : 00-22-FB-88-A8-E0
DHCP Enabled . . . . . : Yes
Auto configuration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::1591:32f4:7fd6:1e4%11(Preferred)
IPv4 Address . . . . . : 10.93.9.54 (Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.93.9.254
DHCP Server . . . . . : 10.93.2.248
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- i. What is the Internet Protocol address of version 4 (IPv4) of the device? (1 mark)
 - ii. What is the hardware address of the device? (1 mark)
 - iii. Briefly, explain the functionality of the 'DHCP Server'. (2 mark)
 - iv. What is the DHCP server address which the above device was attached? (1 mark)
- c. Briefly describe any two (02) transmission impairments. (4 mark)

