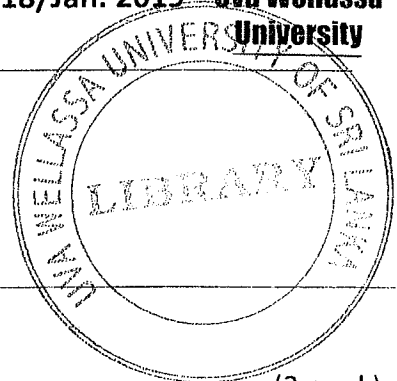


Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
100 level 2nd Semester Examination – Dec. 2018/Jan. 2019
CST131-2 Computer Networks I



Instructions to candidates

Duration: Two (02) hours

Number of questions: Five (05) Essay.

Mark allocation: 100

Answer any four (04) questions only.

1.
 - a. Define computer network and give an example. (3 mark)
 - b. Describe the use of computer networks in following areas.
 - i. Business application (4 mark)
 - ii. Mobile application (4 mark)
 - c. Explain the following transmission technologies and give an example for each.
 - i. Broadcast link (4 mark)
 - ii. Point-to-point link (4 mark)
 - d. Name the ISO – OSI seven (07) layers in proper order and briefly explain the functionality of any two (02) layers. (6 mark)

2.
 - a. 192.168.10.30 / 26 IP address was assigned to a device in a network.
 - i. What is the network address? (2 mark)
 - ii. Write the subnet mask (net mask) in decimal of the above IP address. (2 mark)
 - iii. How many bits were used for this network? (1 mark)
 - iv. How many subnets that you can build in the above network? (2 mark)
 - v. How many hosts (maximum number) could be connected to the above network? (2 mark)
 - b. A network address is given as 192.168.100.10/ 26. Complete the following table considering all the subnets which you could build. Computation steps should be shown. (16 mark)

	First Subnet	Second Subnet	Third Subnet	Fourth Subnet
Network Address				
First Host Address				
Last Host Address				
Broadcast Address				

3.

- a. Briefly explain the client server architecture using a diagram. (4 mark)
- b. If you classify computer networks according to the scale, name and describe the different categories. (5 mark)
- c. Compare and contrast Internet Protocol address version 4 (IPv4) with Internet Protocol address version 6 (IPv6). (6 mark)
- d. Compare Personal Area Network (PAN) with Wide Area Network (WAN). (5 mark)
- e. Define the term "Topology" and give three (03) examples for topologies. (5 mark)

4.

- a. Briefly explain how data travels through a fiber cable using a diagram. (5 mark)
- b. Explain all the terms in '10Base-5'. (3 mark)
- c. Change the following IPV4 address from binary notation to dotted decimal notation.
10000001 00001011 00011011 11100010 (2 mark)
- d. State the network identification (net_id) and the host identification (host_id) of the 192.248.48.3 class full IP address. (4 mark)
- e. Explain virtual private network (VPN) (5 mark)
- f. List four (03) differences between Bluetooth and Wi-Fi. (6 mark)

5.

- a. Briefly explain guided media and give two (02) examples. (3 mark)
- b. What is meant by 'line configuration' of a network? (4 mark)
- c. Briefly explain the following terms.
 - i. Internet (3 mark)
 - ii. Internet Service Provider (ISP) (3 mark)
- d. With an aid of a diagram explain Domain Name System (DNS) hierarchy and give two (02) examples for top level domain. (6 mark)
- e. List two (02) services provided over the Internet. (2 mark)
- f. Briefly describe any two (02) transmission impairments. (4 mark)

