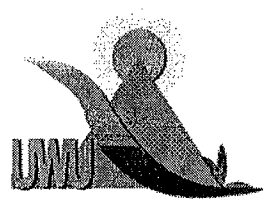


Uva Wellassa University, Sri Lanka

End Semester Examination – February 2011

IIT 221-2 Computer Networks and Applications

Time: Two (02) Hours



Part A contains 15 questions.

Part B contains 03 questions.

Answer all questions in part A and part B.

No part A -

Part B

- 1) To get the Internet connection a student connected his 3G capable mobile phone and his laptop via Bluetooth. When he checks the speed of the link with the mobile phone it was 3 Mbps. When he checks the speed with a server, it was 0.1 Mbps in downlink and 0.03 Mbps uplink. He realized that the phone operates in 2G connection. Next he turned on 3G connection and checked the speed with that previous server again. Then the speed of downlink was 1.54 Mbps and uplink speed was 0.33 Mbps.
- (a) Write down two advantages in connecting devices through Bluetooth. (4 Marks)
 - (b) Even though the operating system says the link speed is 3 Mbps, what are the reasons to report the maximum downlink speed as 1.54 Mbps? (5 Marks)
 - (c) Give reasons to have two different speeds for uplink and downlink? (4 Marks)
 - (d) His friend suggested use a USB cable instead of Bluetooth to get higher internet speed. Can you agree for that suggestion? Explain your answer. (4 Marks)
 - (e) Explain UMTS, HSDPA and HSUPA in mobile phone technology. (4 Marks)
 - (f) If he uses a HSDPA dongle instead of 3G phone, can he get higher Internet speed? Explain your answer. (4 Marks)
- 2) You are given a full block of IP addresses (from 200.201.202.0 to 200.201.202.255) to create six (6) subnets. Each subnet should facilitate 25 hosts.
- (a) To fulfill these requirements how many bits should be borrowed from host section? (6 Marks)
 - (b) What is the subnet mask that can be used in this scenario? (6 Marks)
 - (c) What is the maximum number of hosts supported by each subnet? (6 Marks)
 - (d) Write down the IP address ranges in each subnet. (7 Marks)
- 3)
- (a) Give reasons why the uplink frequencies are higher than downlink frequencies in satellite communication? (5 Marks)
 - (b) Write down three (3) key elements that should be there to have a proper communication session in general. (5 Marks)
 - (c) What is the principal difference between connectionless communication and connection oriented communication? (5 Marks)
 - (d) What is a "spoofed" packet? (5 Marks)
