

## ITS 323 – QUIZ 7 ANSWERS

First name: \_\_\_\_\_ Last name: \_\_\_\_\_

ID: \_\_\_\_\_

Total Marks: \_\_\_\_\_

out of 4

### Question 1 [2 marks]

- a) If a source host with IP address X has an IP datagram to send to the Next Router (which has IP address Y), what protocol is used to find the MAC address of the Next Router?

**Answer: Address Resolution Protocol (ARP)**

- b) Assume the last 8 digits of your ID are an IP address (in dotted decimal notation), where each two digits of your ID is separated by a dot. If your IP address has a subnet mask 255.255.255.128, what address would you send to reach all computers on your network?

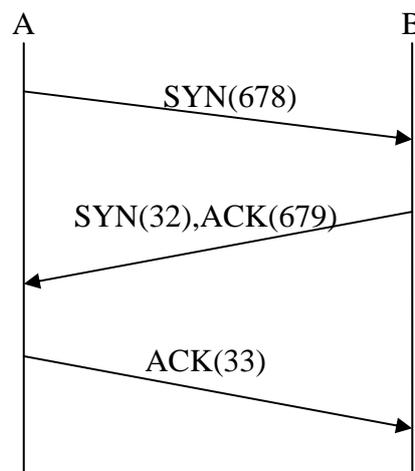
**Answer: 255.255.255.255 (or, if IP = 12.34.56.78, then 12.34.56.127)**

- c) What are the four items that uniquely identify a TCP connection in an internet?

**Answer: Source IP address, Source Port number, Destination IP address, Destination Port number**

### Question 2 [2 marks]

- a) Draw a diagram to illustrate the TCP Three-Way Handshake for connection setup from Host A to B. For each TCP segment sent you must show the type of segment (e.g. DATA, ACK, SYN, RST, FIN) and the corresponding Sequence or Acknowledgement number. Assume the initial sequence number chosen by A is the last three digits of your ID, and the initial sequence number chosen by B is 32.



- b) What is the sequence number included in the first TCP segment containing DATA sent from A to B?

**Answer: Sequence number = 679**