ITS 323 – QUIZ 6 (CSA) ANSWERS

First name: _____ Last name: _____

ID: _____ Total Marks: _____
out of 10

Question 1 [3 marks]

Assume Classful Addressing is used.

a) Computer A has IP address 129.64.32.8. What class is it? _____

b) What IP address identifies the network of Computer A? _____

c) Is the computer with the following IP address on the same network as A? YES / NO

10000001 01000000 00000001 00000000

Answers

a. Class B – 129 in binary is 10000001, so the first two bits are 10 meaning Class B.

b. 129.64.0.0

c. Yes, the IP address begins with decimal 129.64, hence the same network.

Question 2 [3 marks]

Assume Classless Addressing is used.

a) What subnet mask should be used to create the same network size as that of Computer A in Question 1?

_____

b) Computer C has IP address 72.45.8.16. What is the network address for this computer if the subnet mask is 255.255.128.0?

_____

c) What is the broadcast address for computer C with subnet mask 255.255.128.0?

_____

Answer

a. 255.255.0.0 – With a Class B address, the split between network and host portion is after the first 16 bits.

b. 72.45.0.0 – With this subnet mask the first 18 bits are the network portion

c. 72.45.127.255 – Host bits are 0.

Question 3 [3 marks]

Multiple choice (circle the correct answer):

a) Which protocol provides error reporting capabilities in the Internet:
   i. ICMP
   ii. ARP
   iii. IP
   iv. UDP

b) For a network with a maximum of 1100 hosts, which subnet mask is most appropriate?
   i. /9
   ii. /23
   iii. /21
   iv. /11

c) The purpose of the Protocol Number field in the IP header is:
   i. Indicate the next higher layer protocol that the data is intended for
   ii. Indicate the version of IP being used
   iii. Indicate the lower layer (data link) protocol that the data is intended for
   iv. Indicate the protocol options used by IP

d) For an IP datagram with destination address 150.102.l2.10/24 at a router with the following routing table, what next router will the datagram be sent to:

Destination Network	Next Router
150.102.7.*/24	A
150.102.*.*/24	B
150.*.7.10/24	C
*	D

   i. A
   ii. B
   iii. C
   iv. D

Answer

a. ICMP – Internet Control Message Protocol

b. /21 – This leaves 11 bits for the host portion, giving a possible 2048 addresses, which is enough for a network with 1100 hosts (10 bits, or 1024 is not enough).

c. Indicate the next higher layer protocol that the data is intended for, e.g. 6 for TCP, 17 for UDP.

d. B – This will be the first entry that matches (the entries are tested row by row).