ITS 323 – QUIZ 6 (IT) ANSWERS

First name: _____   Last name: _____

ID: _____   Total Marks: _____

<div align="right">out of 10</div>

Question 1 [4 marks]

Assume Classful Addressing is used.

    a) Computer A has IP address 17.203.64.12. What class is it?   _____

    b) Computer B has IP address 17.204.64.12. Are A and B on the same network?   YES / NO

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

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

                  00010001 11010011 01010000 00000000

Answers

a. Class A – 17 in binary is 00010001, so the first bit is 0 meaning Class A.

b. Yes. For class A address, the first 8 bits (or the first part of the dotted decimal notation) identify the network. As they are the same (17 in decimal), the computers are on the same network.

c. 17.0.0.0

d. Yes, again the IP address begins with 00010001 or decimal 17, 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 64.33.8.3. What is the network address for this computer if the subnet mask is 255.255.192.0?

                                         _____

    c) What is the broadcast address for computer C with subnet mask 255.255.192.0?

                                         _____

> **Answer**
>
> a. 255.0.0.0 – With a Class A address, the split between network and host portion is after the first 8 bits.
>
> b. 64.33.0.0 – With this subnet mask the first 18 bits are the network portion
>
> c. 64.33.63.255 – Host bits all 1's.

Question 3 [3 marks]

Multiple choice (circle the correct answer):

a) Which protocol maps IP addresses into physical address (like IEEE MAC addresses):

  i. ICMP

  ii. ARP

  iii. DNS

  iv. IP

b) For a network with a maximum of 1000 hosts, which subnet mask is most appropriate?

  i. /18

  ii. /22

  iii. /24

  iv. /10

c) 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.*.7.10/24	B
150.102.*.*/24	C
*	D

  i. A

  ii. B

  iii. C

  iv. D

> **Answer**
>
> a.
>
> b. /22 – This leaves 10 bits for the host portion, giving a possible 1022 addresses, which is enough for a network with 1000 hosts.
>
> c. C – This will be the first entry that matches (the entries are tested row by row).