Networks LAB
Lab Test 02 (Part B - Quiz)
Date: 7 April 2023, Friday

Question 1:
Suppose you make a successful bind call on a TCP socket. What will happen if you make another bind call on it immediately, with same or different IP and/or port?
Select one:
a. The bind call will always give an error
b. The bind call will give an error only if both the IP and port in the second bind call is the same as in the first bind call
c. The bind call will always return with no error
d. The bind call will give an error only if the IP and/or port in the second bind call is different from that in the first bind call

Question 2:
Suppose you make the following two accept calls in sequence: "firstfd = accept(sockfd, ….); secondfd = accept(firstfd, ….)" where sockfd is a TCP socket created and bound to an address properly, firstfd and secondfd are int variables, and assume that the rest of the parameters of the two accept calls are filled properly. What do you think will happen?
Select one:
a. The 2nd accept call will succeed, the original socket firstfd will be closed and a new socket will be created and its id stored in secondfd
b. The 2nd accept call will return with an error
c. The 2nd accept call will succeed, and firstfd and secondfd will both contain the same value (so will point to the same socket)
d. The 2nd accept call will succeed and a new socket will be created and its id stored in secondfd

Question 3:
What will happen if you make a recvfrom call on a UDP socket with buffer size (3rd parameter) = 200, and MSG_WAITALL flag set (fourth parameter)?
Select one:
a. The call will block until a message of exactly 200 bytes comes
b. The call will block until any message (of any size) comes
c. The call will return with an error saying invalid argument
d. The call will block until a message of size at least 200 bytes comes

Question 4:
Suppose a program is waiting on a poll() call with a timeout of 500 milliseconds and a signal is caught in the middle. What will happen?
Select one:
a. The signal is handled and the poll() call continues to wait after the signal handler is over with the remaining timeout value
b. The signal is ignored

c. The signal is handled and the poll() call starts to wait after the signal handler is over with a timeout of 500 milliseconds

d. The poll() call returns with an error

Question 5:

Suppose you set the send buffer size of a socket to 3200 bytes using the SO_SNDBUF option in a setsockopt call. Now you get the send buffer size set using the getsockopt call and print it. What will be the value printed?

Select one:

a. 3200

b. First value >= 3200 which is an integral multiple of number of pages

c. 6400

d. 9600

Question 6:

Which set of the fields below are always filled in by the OS in an IP header irrespective of the type of socket used and irrespective of any other flag/option/value set in any way?

Select one:

a. Identification and Checksum only

b. Identification, Checksum, and Total Length

c. Checksum and Total Length only

d. None of the other three options

Question 7:

What happens if you make a bind() call on a raw socket (same as the socket used in Assgn 6)?

Select one:

a. The bind call is ignored and there is no effect on the raw socket operation

b. The raw socket can be used to send only IP packets with source IP equal to the IP address in the bind call, if IP_HDRINCL is not set

c. The raw socket can be used to send only IP packets with source IP equal to the IP address in the bind call, even if IP_HDRINCL is set

d. The raw socket can be used to receive only IP packets with destination IP equal to the IP address specified in the bind call

Question 8:

Suppose you are using a raw socket to send a TCP packet, and you have set the IP_HDRINCL option. Now you create the TCP header, IP header etc. as required to create the IP packet, and make a sendto() call to send the packet. However, by mistake, you set the last two parameters of the sendto() call wrongly to point to a different IP than the destination IP you have set in the IP header while creating the header. What do you think will happen?

Select one:

a. The packet will be sent to the destination IP given in the header created by you

b. The sendto() call will return with an error

c. The packet will be sent to the IP given in the sendto() call

d. The packet will be silently dropped with no error from the sendto() call

Answers:
1. The bind call will always give an error
2. The 2nd accept call will return with an error
3. The call will block until any message (of any size) comes
4. The poll() call returns with an error
5. 6400
6. Checksum and Total Length only
7. The raw socket can be used to send only IP packets with source IP equal to the IP address in the bind call, if IP_HDRINCL is not set
8. The packet will be sent to the destination IP given in the header created by you