Advanced Unix programming – Quiz5

Time limit: 12 minutes

1. (1 point) Which of the following functions is used for setting socket options?

   (a) setsockopt
   (b) putsockopt
   (c) inputsockopt
   (d) writesockopt

   A.

2. (6 points) Assume that a client needs to read on two different file descriptors, (i) standard input and (ii) a socket. When data from standard input is available, it will call a function: *R1(sockfd)*. When data is available from the socket, it will call a function *R2(sockfd)*. Write code in the *for* loop below, so that the client can use *select* to respond to whichever file descriptor is ready for reading. You need not handle errors, or close the socket on *EOF*.

```
int sockfd, maxf;
fd_set  rset;
 ... Some code ...
  for(;;)
  {
    FD_ZERO(&rset);
    FD_SET(STDIN_FILENO, &rset);
    FD_SET(sockfd, &rset);
    maxf = sockfd + 1;

    select(maxf, &rset, NULL, NULL, NULL);

    if(FD_ISSET(sockfd, &rset))
      R2(sockfd);
    if(FD_ISSET(STDIN_FILENO, &rset))
      R1(sockfd);
  }
```

3. (1 point) In the pre-forked server example that we discussed in class, which of the following is true:

   (a) Each child listens on a different socket.
   (b) All the children listen on the same socket.

   B.

4. (2 point) In the pre-forked server example that we discussed in class, which of the following is true on a Linux system, after the first client connection arrives on the completed connection queue:

   (a) *accept* returns in each child, with an identical file descriptor number.
   (b) *accept* returns in each child, with different file descriptor numbers.
   (c) *accept* returns a file descriptor in one of the children; the other children are put back to sleep.
   (d) *accept* returns a file descriptor in one of the children; the other children are terminated.

   C.