IS F462 Network Programming Mid-sem Exam

Sem II 2022-23

Mar 15, 2023 11:00 – 12:00 PM

Max Marks: 28

Instruction

- If you making any assumption, state it before answering the question
- Write answers briefly in the space provided below the question

Name _____ **Roll No** _____

1. Besides *systemd*, which other process or processes do not have a parent? (1 mark)
   Every other process has a parent process.
2. After process creating, how does the newly created process know whether it is a parent or a child process? (3 marks)
   Both parent and child processes check the return value of the system call used to create a new process. The return value for the parent and the child processes are different.
3. How do parent and child processes synchronize with each other? (3 marks)
   The parent uses a system call that blocks itself. The child process uses a system call that unblocks the parent process.

4. "My process first uses *fork* and then creates a pipe. The newly created child process sends data using the newly created pipe to the parent process." What is the issue (if any) with the afore-mentioned scenario? (2 marks)
   Since the *fork* was done before creation of the pipe, the child process will not have access to the pipe.
5. If there is an issue, fix the scenario. (2 marks)
   My process should first create a pipe and then use *fork*.

6. For a stream socket, why the client's send call does not mention the destination address? (2 marks)
   For the stream socket, the client mentions the destination address while connecting the socket.
7. How many streams client can a *accept* system call accept at a time? (2 marks)
   One.
8. How will a stream server communicate with multiple stream clients simultaneously? (2 marks)
   Using multiple-threads for the communication.

9. From the perspective of a client resolving a website name, which of the two methods (if any) of DNS resolution is faster and which one (if any) is less work? (2 marks)
   None is faster. Recursive is less work.
10. If one is faster, why so? If both can be equal, why so? (3 marks)
    Both are equal because the time taken by two servers to communicate can be same.

11. What is a network ID? (2 marks)
    The ID that identifies an IP network.
12. What is a host number? (2 marks)
    The number that identifies a host in a network.
13. What is a netmask? (2 marks)
    It is binary bit mask that if we bitwise AND with the IP address, returns the network ID.