**ADDIS ABABA UNIVERSITY**

**ADDIS ABABA INSTITUTE OF TECHNOLOGY**

**DEPARTMENT OF INFORMATION TECHNOLOGY AND SCIENTIFIC COMPUTING**

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Section 2

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1. What are example application using TCP and UDP?

*TCP Application Examples:*

* *File Transfer Protocol(FTP) uses port 21*
* *Simple Mail Transfer Protocol(SMTP) uses port 25, 465 or 587*
* *Telnet Protocol uses port 23*

*UDP Application Examples:*

* *Domain Name System(DNS) uses port 53*
* *Dynamic Host Configuration Protocol(DHCP) uses port 67 and 68*

1. Why the UDP server needs only one socket, whereas the TCP server needs two sockets?

*In TCP, a server socket is first created that is used to listen to connections from the clients. Once a client has connected, a new socket will be created that will keep track of the client’s IP address and source. In the example the TCP server has two connections because only one client has connected to it.*

*In a UDP connection there aren’t any sockets that listen to client connections. There is only a single socket that sends and receives packets.*

1. If the TCP server needs to support n simultaneous connections, each from a different client host, how many sockets would the TCP server need?

*A TCP server will first start a server socket that will listen to any client requests for connections. Every time a new client connects to the server, a new socket will be created. So N + 1 connections will be required; one is the server socket and N is for every socket created for every connection.*