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Answer

1. Describe the functionality of BIOS and CMOS.

- BIOS
 - Power-on self-test. Tests the hardware of the computer before loading the OS.
 - Bootstrap loader. This locates the OS.
 - Software/drivers. This locates the software and drivers that interface with the OS once running.
 - Complementary metal-oxide semiconductor (CMOS) setup. This is a configuration program that enables user to alter hardware and system settings.
- CMOS
 - It is the name of BIOS's non-volatile memory.
 - CMOS battery is the part of the motherboard that is installed for the basic hardware settings like BIOS, date, time, and other configurations.
 - The system loses all this information in off power mode.
 - CMOS chip requires very less power to increment the time parameters.

2. Describe the differences between TCP and UDP.

N	TCP	UDP
1	Requires an established connection to transmit data (connection should be closed once transmission is complete)	Connectionless protocol with no requirements for opening, maintaining, or terminating a connection
2	Able to sequence data	Unable to sequence data
3	Can guarantee delivery of data to the destination router	Cannot guarantee delivery of data to the destination router
4	Acknowledgement segment is present.	No acknowledgement segment is present.
5	It is comparatively slower than UDP.	It is faster, simpler, and more efficient than TCP.

6	Extensive error checking and acknowledgment of data	Basic error checking mechanism using checksums
7	It has a (20-60) bytes variable length header.	It has an 8 bytes fixed length header.
8	Does not support Broadcasting	Does support Broadcasting
9	Used by HTTPS, HTTP, SMTP, POP, FTP, etc	Video conferencing, streaming, DNS, VoIP, etc

3 Calculate VLSM subnet for three LANs.

IP address: 192.20.5.0/24

