

**DFN5511 – Fundamentals of Networking**  
**Tutorial 4**

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1. Do applications need to exchange UDP control messages before exchanging data? Explain.
2. Calculate the size of the largest possible UDP message. (Hint: the entire UDP message must fit in an IP datagram.)
3. What are the semantics of UDP?
4. List the features of TCP.
5. How does TCP handle packet loss?
6. The following is a dump (contents) of a UDP header in hexadecimal format.

0045DF0000580000

- a. What is the source port number?
  - b. What is the destination port number?
  - c. What is the total length of the user datagram?
  - d. What is the length of the data?
  - e. What is the application-layer protocol?
7. The following is a dump (contents) of a TCP header in hexadecimal format.

05320017 00000001 00000000 500207FF 00000000

- a. What is the source port number?
- b. What is destination port number?
- c. What is the sequence number?
- d. What is the acknowledgement number?
- e. What is the length of the header?
- f. What is the type of segment?
- g. What is the window size?