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## CHAPTER 10

# *Ethernet*

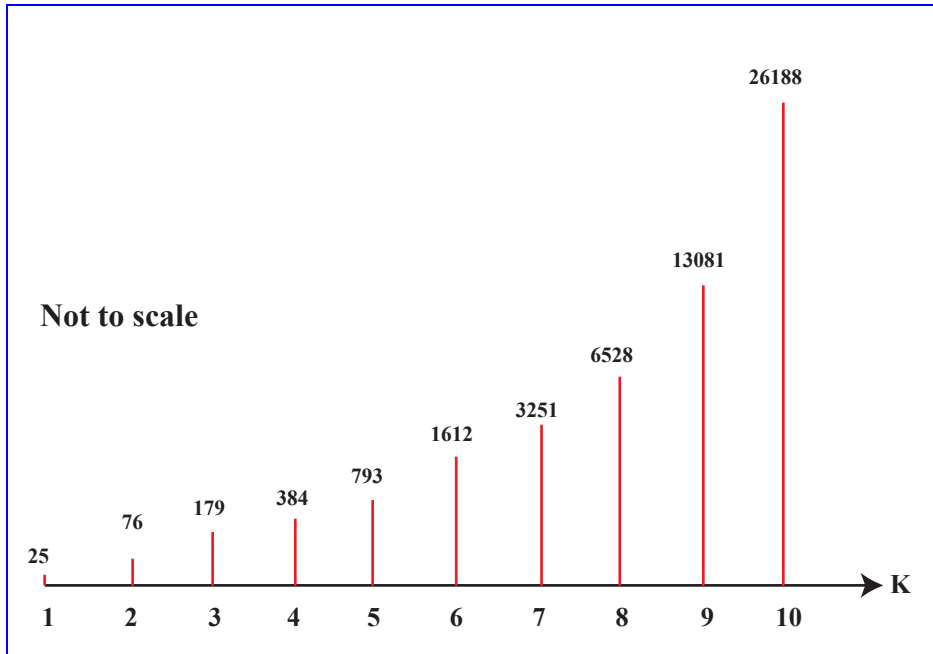
### Multiple-Choice Questions

1. b
3. c
5. a
7. b
9. a
11. a
13. b

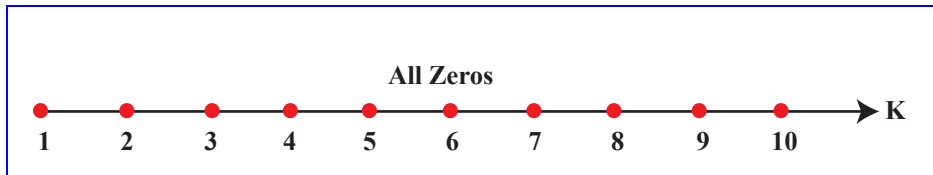
### Exercises

15. Smallest:  $46/64 = 71.87\%$  Largest:  $1500/1518 = 98.81\%$  Average =  $85.34\%$
17.  $2500 \text{ meters} / 200,000,000 \text{ mps} = 12.5 \text{ microseconds}$ .
19. The minimum frame size is 64 bytes.  
 $64 \text{ bytes} \times 8 \text{ bits/byte} = 512 \text{ bits}$ .  
If the data rate is 10 Mbps, 512 bits can be generated in:  
 $512 \text{ bits} / 10,000,000 \text{ bits/second} = 51.2 \text{ microseconds}$
21. The value of  $r$  is between 0 and  $2^5 - 1$ . Range: 0 to 31.
23. See Figure 10.1. Note that we use the average values (0.5, 1.5, and so on) to calculate the backoff time.
25. See Figure 10.2. The station resends immediately.
27.  $46 - 42 = 4$
29. After sending 46 bytes of data.

**Figure 10.1** Exercise 23



**Figure 10.2** Exercise 25



31. See Table 10.1.

**Table 10.1** Exercise 31

<i>Characteristics</i>	<i>10Base5</i>	<i>10Base2</i>
Number of segments	5	5
Number of useful segments	3	3
Segment length	500 m	185 m
Number of stations per segments	100	32
Total length	2500 m	925 m
Total number of stations	300	96
Distance between stations	2.5 m	0.5 m