系所組別： 電信管理研究所乙組

考試科目： 電腦網路概論　　　　　　　　　　　　　　　考試日期：0308，節次：1

※ 考生請注意：本試題 □可 ☑不可 使用計算機

1. (a) Explain why most of the addresses in class A are wasted.? (5%)
   (b) Explain why a medium-size or large-size corporation does not want a block of class C addresses. (5%)

2. A company is granted the block 211.17.180.0. The administrator wants to create 32 subnets.
   (a) Find the subnet mask. (5%)
   (b) Find the number of addresses in each subnet. (5%)
   (c) Find the first and last addresses in subnet 1. (5%)
   (d) Find the first and last addresses in subnet 32. (5%)

3. A TCP connection is using a window size of 10,000 bytes, and the previous ACK number was 22,001. It receives a segment with ACK number 24,001 and window size advertisement of 12,000. Draw a diagram to show the situation of window before and after. (15%)

4. The following is a dump of a UDP header in hexadecimal format.
   06 32 00 0D 00 1C E2 17
   (a) What is the source port number? (5%)
   (b) What is the destination port number? (5%)
   (c) What is the total length of the user datagram? (5%)

5. What are physical address, IP address, and port address? Explain their functions in data communications. (20%)

6. In a wireless local area network, describe the multiple access scheme by which all nodes use to share the wireless medium. (20%)