1. How do you call the application which sits between the Web servers and the end-user applications? (3%) Give a product name which you know. (3%)

2. What is the information directory provider? (3%) Please name at least one company according to the type of the service? (8%)

3. What is the three-part architecture of the web? How could they cooperate with each other to complete the web queries? (15%) Please explain them in details.

4. What is “spoofing”? (4%) What is “Denial of service”? (4%)

5. Work out the numbers that represent the string 1001 in
   (a) binary numbering system. (2 points)
   (b) octal numbering system. (2 points)
   (c) hexadecimal numbering system. (2 points)
   (d) decimal numbering. (2 points)
6. Please explain why world wide web (WWW) attracts so many people to use?
   (10%)

7. (a) If there is a sorted sequence as following: 1, 3, 6, 8, 11, 12, 14, 16, 18, 20, 23,
   24, 30, please use binary search to find the data 20. Please list the searching steps
   and explain them. (10 %)
   (b) what is the fundamental requirement to adopt binary search? (4 %)

8. (a) If you want to send one photo picture from the 36mm film to your relatives
   overseas via e-mail, how do you do it? (5%)
   (b) (continuing (a)) If your original photo picture is too dark and without the date
   information on it, how could you modify them so your picture in e-mail could be
   brighter with the date information? (5%)

9. Determine what the following recursive C function computes. (10%) Write an
   iterative function to accomplish the same purpose. (8%)

   ```c
   Func(n)
   Int n;
   |
   if (n == 0)
       return(1);
   return(n * func(n-1));
   */ end func */
   ```