1. 選擇題(單選, 答錯不倒扣) (If no answer is correct, please answer “N”) (20%)
   A. The software used to explore the World Wide Web is called (a) ISP, (b) Browser, (c) E-mail, (d) PDA.
   B. The set of widely accepted video standards is known as (a) WORM, (b) CD-R, (c) MPEG, (d) DVD.
   C. In a network, a computer dedicated to screening access from outside the network is called (a) connector, (b) firewall, (c) web server, (d) bridge.
   D. Which of the following model is the most widely used model in database. (a) network model, (b) hierarchical model, (c) relational model, (d) fractal model.
   E. Which of the following features is not adopted in Java language. (a) array (b) thread (c) object (d) pointer.
   F. Professor Caesar used dssoh for apple in his message to ensure the confidentiality. Which of the following word Caesar would use for the word network? (a) whjnehz, (b) ohgkjwn, (c) qhzwrun, (d) ohqnetl.
   G. How large is one Gigabyte? (a) 10 megabytes, (b) 100 megabytes, (c) 1000 megabytes, (d) 1000 megabytes.
   H. Which is the fourth layer of the Open System Interconnection (OSI) network model? (a) Network Layer, (b) Presentation Layer, (c) Session Layer, (d) Transport Layer.
   I. Which the following protocol can be used to transmit E-mail? (a) SNMP, (b) ICMP, (c) SMTP, (d) HTTP.
   J. Which of the following storage devices has the fastest speed? (a) Optical Disk, (b) Main Memory, (c) Register, (d) Cache.

2. What are the prefix and postfix expressions of A*B+C-D/E-A*H ? (8%)

3. What are the five (or four) units of computer hardware? Please write briefly the functions of the five (or four) units. (10%)

4. 試將下列數字表示成十進位數字：(a) (ABC.5)\text{16} (16 进位) (b) (754.34)\text{8} (8 进位) (8%)

5. 下列二進位數字是以 2 補數的方式表示成的，其十進位數字為何？
   110011011 (5%)

6. Write the truth table of \( F(X, Y, Z) = \overline{X}Y + Y\overline{Z} + \overline{X}YZ \). Where X, Y, Z are Boolean variables. Given two Boolean variable X and Y, then XY means “X AND Y”, X+Y means “X OR Y”. (12%)
7. Given an undirected graph as follows. List the visit order of vertex numbers from vertex 1 by (a) depth-first search, (b) breadth-first search. (12%)

8. Sort 38, 49, 25, 30, 13 by bubble sort. Write down the detail steps (10%)

9. Write a 2-Way Merge Sort function sort(X,n) to sort the given integer array X of size n into ascending order. Write the function in any High Level Language. You should give enough comments in your program. The following Figure is an example of 2-Way Merge Sort (15%)