

1. What are the ACID properties of the transaction processing? (10%)
2. Explain the following terms.(10%)
 - a) Dual -Key Encryption (5%)
 - b) Common Object Request Broker Architecture (5%)
3. Define a structure that contains the name of a food, its calories per serving, its food group (such as meat or fruit), and its cost. Write a program that is able to produce a balanced meal. The foods should be stored as an array of structures. Each meal the program constructs should contain two food groups and meet calorie and cost constraints. It should be capable of producing a large number of different menus. (Use C, C++, or Java language) (15%)
4. The following figure shows a class for ABC UNIVERSITY. Convert this user view to a set of 3NF relations. (15%)

Assume the following :

- a. An instructor has a unique location.
- b. A student has a unique major.
- c. A course has a unique title.

ABC UNIVERSITY CLASS LIST FALL SEMESTER 199X			
COURSE NO: IS 350			
COURSE TITLE: DATABASE			
INSTRUCTOR NAME: T.C. SUE			
INSTRUCTOR LOCATION: B104			
STUDENT NO.	STUDENT NAME	MAJOR	GRADE
38214	C.K.LEE	IS	A
40875	J.J. LIN	CS	B
51893	J.M. WU	IS	A
...			

(背面仍有題目,請繼續作答)

5. Assuming that you are given an array of data(integers), how would you sort this array of data via binary search tree? Please
- a) (5%)write down your method.
 - b) (10%)write a program according to your method in a).
 - c) (4%)compute the time complexity of your method.

6. Please give a drawing that describes one man connects his personal computer to CNN.com server over Atlanta, USA. In this drawing, you are required to include all necessary hardware and software.(10%)

7. Please match each language or software with its most appropriate attribute (5%)

Remember: You need write the answer on the answer sheet!!!

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|------------------------|--|
| ___ i) MS office | a. is a DBMS used in MS NT. |
| ___ ii) C language | b. is an OS competing with MS NT. |
| ___ iii) Java language | c. is very closed related with UNIX. |
| ___ iv) SQL server | d. is widely used in Internet recently. |
| ___ v) Linux | e. has dominated the PC software market. |

8. Please compare pros and cons between the client-server system and three tier system in the information system.(8%)

9. Please convert the expression $((m-n)+u*(p+q))/(r-s*t)$ to a

- a) prefix expression.(4%)
- b) postfix expression.(4%)