

國立交通大學八十九學年度碩士班入學考試試題

科目名稱：網際網路概論(482)

考試日期：89年4月23日 第3節

系所班別：資訊管理研究所 組別：乙組

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*作答前, 請先核對試題、答案卷(試卷)與准考證上之所組別與考試科目是否相符!!

1. Explain the following terminology. (20%)
 - (a) E-customer relationship management
 - (b) Lightweight directory access protocol
 - (c) Microsoft Internet server application
 - (d) Active data object

2. Describe the differences between Javascript and Vbscript. (8%)

3. Describe the advantages of using active server pages. (8%)

4. Describe the advantages of using XML for electronic document systems. (8%)

5. What factors must be considered for optimizing the Web server? (6%)

6.
 - (a) (4%) Explain the differences between connection-oriented communication and connectionless communication.
 - (b) (4%) Is TCP (Transmission Control Protocol) connectionless or connection-oriented? Justify your answer.

7.
 - (a) (6%) Explain the desirable (good) properties for software components in terms of coupling, information hiding, and cohesion, respectively.
 - (b) (4%) What are the characteristics of programming languages that may be helpful to achieve those properties?
 - (c) (6%) In addition to the properties listed in (a), illustrate two possible desirable properties for software components of Internet applications. Justify your answer.

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8.

Consider the following set of simplified requirements for a *Web-info* database that is used to keep track of Web sites and Web pages on the Internet.

- 1) Each Web site is described by a unique name. Each Web site maintains a particular Web page as its Home (first) page. A Web page can be a home page of at most one Web site.
- 2) Each Web-page is described by a title and an URL. A Web page may also link to several Web pages.

- (a) (7%) Draw an ER schema diagram for this application. You need to clearly indicate the cardinality ratio (1:1, 1:N, or M:N) of each relationship.
- (b) (7%) Map the ER schema into a relational schema. Specify all primary keys and foreign keys. (State any assumption you made)

9.

- (a) (8%) Suppose that you are shopping around on the Internet. The data structure *shopping_basket* contains the items you have selected. Write a program to delete all items with price more than 1000 NTD from your *shopping_basket*.
- (b) (4%) Analyze the time complexity of your program.

```
Struct Item {
    char name[30];
    float price;
};
struct Item_list {
    struct Item product;
    struct Item_list *next;
};
typedef struct Item_list *LINK;
LINK shopping_basket;
```