

## 臺灣期貨交易所 99 年新進人員招募試題

甄選類別【代碼】：電腦機房操作人員【79501】 \*請填寫入場通知書編號：\_\_\_\_\_

專業科目：UNIX、資料庫、C++及 JAVA 語言之概念與指令

- 注意：①本試卷為一張雙面，共有 8 大題之非選擇題，其中 4 題配分各為 15 分，4 題配分各為 10 分。  
②限用藍、黑色鋼筆或原子筆於答案卷上採英文橫式作答（以中文作答者，該題不予計分），並請從答案卷內第一頁開始書寫，違反者該科酌予扣分。所有題目不必抄題但須標示題號。  
③應考人得使用簡易型計算機；於測驗時將不符規定之電子計算機放置於桌面或使用，若經勸阻無效，仍執意使用，該科扣 10 分；計算機並由監試人員保管至該節測驗結束後歸還。  
④答案卷務必繳回，未繳回者該科以零分計算。

### 題目一：

Following questions are related to the Unix-like file system:

a. If a directory information is shown as follows:

```
drwxr-xr-- 2 kaoo staff 512 Feb 1 22:11 test/
```

What is the access right of the same group with Kaoo? 【2 分】

b. Continued, if the user “kaoo” would like to change the access right of /tmp/test and its subdirectory; so that the group members have the same right with kaoo, please show the command. 【2 分】

c. Continued, if the user “kaoo” wants to delete the directory /tmp/test and input the command “**rmdir /tmp/test**” on the console. Unfortunately, the operation is failed. Please show the possible problem and how “kaoo” can do. 【4 分】

d. Please explain the functionality of command “umask”. 【3 分】

e. Please explain briefly the command “df” and “du”. 【4 分】

## 題目二：

Answer the following questions:

a. If you have a file “/home/user1/file1”, and you would like to list all of lines containing “car”, please show the command. (hint: you can use pipe) 【3分】

b. Following is the content of file “/home/user1/file2”

```
12    Simon
120   Tom
10    Helen
23    John
5     Mary
```

Please use commands in one line to sort the content according to the digital field in ascending order, and save result to file “/home/user1/file3”. 【3分】

c. Please explain the function of following command. 【3分】

```
mount -t nfs -o ro /dev/sda1 /var/ftp
```

d. Please explain briefly the variable setting “PATH=/sbin:/usr/sbin:/usr/local/sbin:” in UNIX OS. 【3分】

e. If a compressed file named “tasks-1.1.tar.gz”, please write down the steps (commands) to list all the content (files) in the compressed file. 【3分】

## 題目三：

(a) For a general database system, briefly state the major roles of the *System Administrators*, *Database Administrators* (DBAs), and *Database Designers* within a database environment. 【5分】

(b) A DBMS could perform several important functions that guarantee the integrity and consistency of the data in the database. Most of those functions are transparent to end users, and most can be done only by using a DBMS. Please list any *five* items of the DBMS functions. 【10分】

#### 题目四：

The EMPLOYEE table is composed of 16 records and seven attributes (fields), as shown below: The primary key is **Emp\_Num** (Employee Number, e.g. E101), and the foreign key is **Emp\_Mgr** (Employee's Manager, e.g. E105) that refers to **Emp\_Num**. According to the SQLs, (a)-(c), list their query results with two-dimensional structures (tables), respectively.

<u>Emp_Num</u>	Emp_Title	Emp_Name	Emp_Degree	Emp_Salary	Emp_HireDate	Emp_Mgr
E100	Mr.	David	Ph.D.	66,000	07-Dec-85	
E101	Mr.	Robert	Master	46,000	01-Jan-88	E100
E102	Mr.	Prince	Master	44,000	01-Aug-88	E100
E103	Ms.	Annie	Bachelor	35,000	10-Feb-90	E100
E104	Mr.	George	Bachelor	30,000	20-Oct-92	E105
E105	Mr.	Wayne	Ph.D.	55,000	10-Mar-86	
E106	Mr.	Nelson	Master	42,000	01-Jan -88	E105
E107	Ms.	Betty	Master	38,000	10-Aug-90	E105
E108	Ms.	Jenny	Bachelor	30,000	20-Feb-92	E105
E109	Ms.	Lisa	Bachelor	33,000	20-Jul-92	E111
E110	Mr.	Richard	Bachelor	25,500	15-Oct-95	E111
E111	Ms.	Jessie	Ph.D.	56,000	02-Feb-87	
E112	Mr.	Clinton	Master	38,000	01-May-90	E111
E113	Ms.	Jessica	Bachelor	35,000	01-Apr-90	E111
E114	Ms.	Diana	Master	36,000	20-Apr-92	E105
E115	Mr.	Edward	Bachelor	38,500	15-Oct-95	E100

(a) 【5分】

```
SELECT Emp_Num, Emp_Salary, Emp_HireDate FROM EMPLOYEE
WHERE Emp_HireDate > "01-May-90" AND Emp_Title = "Ms."
ORDER BY Emp_Salary DESC;
```

(b) 【5分】

```
SELECT Emp_Num, Emp_Name, Emp_Mgr FROM EMPLOYEE
WHERE Emp_Mgr = (SELECT Emp_Mgr FROM EMPLOYEE
WHERE Emp_Name = "Jessica");
```

(c) 【5分】

```
SELECT Emp_Num, Emp_Degree, Emp_Salary FROM EMPLOYEE
WHERE Emp_Salary > 38,000
MINUS
SELECT Emp_Num, Emp_Degree, Emp_Salary FROM EMPLOYEE
WHERE Emp_Degree = "Ph.D.";
```

#### 题目五：(C++)

This is an integer array  $A[10][5]$ , and its memory address is  $0x0080$ , where  $\text{size of}(A[0][0]) = 4$ . Please answer the following questions:

- What is the initial value of  $A[0][0]$ ? Please explain the reason. 【4分】
- What is the memory address of  $A[2][2]$ ? 【3分】
- What is the memory address of  $*(A+3)$ ? 【3分】

**題目六：**

Please find the relation of the following numbers and program the relation with C++.  
(Please use recursive program) 【10分】

2, 2, 4, 6, 10, 16, 26, ...

**題目七：**

Please answer the following questions:

- a. What are three major features about object oriented programming? 【3分】
- b. What is the enterprise which develops the JAVA program? 【3分】
- c. What should be noticed when inheriting from the base class? 【4分】

**題目八：**

Please design a polygon class as base, and then design a rectangle class and a triangle class that inherited from the polygon class. Next, please write a program to compute the area for each polygon. (Please use JAVA program) 【10分】