

科目：計算機概論

系所組：電機工程學系(丙組)

1. () Computer resources **are shared** by many jobs or tasks, it is called ____ : (A) batch processing, (B) operation systems, (C) distributed computing, (D) multitasking, (E) client-server computing, (F) all of the above, (G) none of the above. (5%)
2. () _____ is an English-language-like representation of code. (A) A C program, (B) A UML diagram, (C) A pseudocode, (D) An algorithm, (E) A logic operation, (F) All of the above, (G) None of the above. (5%)
3. () In Internet, the _____ layer of the TCP/IP protocol suite is responsible for **source-to-destination delivery** of the entire message. (A) Application, (B) Transport, (C) Network, (D) Data-link, (E) Physical. (5%)
4. See the following program, what is **the final value of the variable 'i'** when the "for" loop is correctly executed and normally finished? (5%)


```

x = 3;
y = 12;
for ( i = 7; i <= x*y; i += y/x)
    printf ("%d\n", i+1);
      
```
5. If we want to get a random number, whose range is **from 5 to 13**. Please use **the random function** and **write down the part of C program**? (5%)
6. Find **the minimum number of octal digits** required to store **decimal integers** with a maximum of **nine digits**. (Hint: $\log_2 = 0.3010$) (5%)
7. Please use **enumeration method** and **C program** to answer the following questions.
 - (1) Please **define a data type**, which contains three statuses: "CONTINUE", "WON", and "LOST". (5%)
 - (2) Please **declare a variable "gameStatus"**, which has this data type (that is, the gameStatus can be the "CONTINUE", "WON", or "LOST"). (5%)
 - (3) What are **the default values** of the "CONTINUE", "WON", and "LOST" in C program? (5%)
8. What are **multitasking** (3%) and **timesharing** (3%) in computer systems? Please compare **the main difference** between them (4%).
9. Please **list the correct order** of developing a C program: _____ (5%).
(A) Compile, (B) Edit, (C) Execute, (D) Link, (E) Preprocess, (F) Load.

※ 注意：1.考生須在「彌封答案卷」上作答。

2.本試題紙空白部份可當稿紙使用。

3.考生於作答時可否使用計算機、法典、字典或其他資料或工具，以簡章之規定為準。

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10. Show the real number -11.40625 using **32-bit IEEE format**. (10%)
11. Three processes (A, B, and C) are running concurrently. Process A has acquired File 1, but needs File 2. Process B has acquired File 3, but needs File 1. Process C has acquired File 2, but needs File 3. (1) **Please draw a diagram** for these processes and situation. (5%) (2) **Is this a deadlock situation?** Please explain your answer. (5%)
12. Please **draw a picture** to describe **the pipelining and its purpose**. (10%)
13. There are two methods for handling the addressing of I/O device: **isolated I/O** and **memory mapped I/O**. Please describe these two methods. (10%)

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