

淡江大學九十二學年度轉學生招生考試試題

664

系別：資訊工程學系三年級

科目：資 訊 概 論

准帶項目請打「○」否則打「×」	
×	簡單型計算機

本試題共 2 頁

本試題雙面印製

- 1 True or False (12%)
 - a) A decimal computer is more powerful than a binary computer.
 - b) Sectors on a CD-ROM are wider at the edge than they are near the middle.
 - c) A flash memory is nonvolatile.
 - d) If a host in the Internet receives an IP datagram that is not delivered for it, it simply discards the datagram.
 - e) The IP addresses of the client and the server determine a TCP connection.
 - f) A programming language is a context-free language.

- 2 Fill in the following blanks. (48%)
 - 1GB = (1) bytes
 - If an integer occupies one byte and is represented by 2's complement, then the representation of -2 is (2).
 - (3) memory is high-speed memory that resides between the CPU and RAM.
 - The process of starting a computer is called (4).
 - The keyboard controller sends an (5) to the system software when it receives a complete keystroke.
 - A (6) is a small program that allows the operating system and other programs to activate and use a hardware device.
 - A (7) processor keeps its instruction set small and simple, allowing the processor to complete more instructions during a given period.
 - An (8) is an information system that automates the decision-making process in a specific area, such as medical diagnoses.
 - The (9) protocol is used for mapping IP addresses to physical addresses.
 - The access method of Ethernet is called (10).
 - The Dining Philosophers problem is often used to illustrate the difficulty of allocating resources among processes without deadlock and (11).
 - The language generated by the grammar $S \rightarrow \epsilon | aSb$ is (12).
 - What data structure is best suitable for each job below?
 - (13) Evaluate a postfix arithmetic expression
 - (14) Process printer jobs
 - Characterize each system below in terms of the number of user processes it supports (i.e. single process or multiple processes) and the number of threads allowed within a process (i.e. single thread or multiple threads).
 - (15) Unix
 - (16) Windows XP

◀ 注意背面尚有試題 ▶

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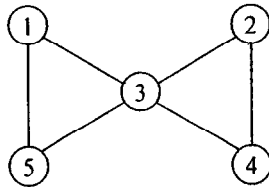
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- 3 What are the similarity and difference between the HTTP protocol and the HTTPS protocol? (10%)
- 4 Use Karnaugh map to simplify the Boolean expression (10%)
$$\overline{A}B + AC + ABC\overline{C} + \overline{A}\overline{B}\overline{C}$$
- 5 Give an adjacency-list representation and an adjacency-matrix representation of the undirected graph. (10%)



- 6 Consider the following C++ code

```
int a[9]={3,2,4,1,3,0,1,0,2},b[9];
int c[5]={0,0,0,0,0};
for (int i=0;i<9;i++) c[a[i]]++;
① for (int i=0;i<5;i++) cout << c[i];
for (int i=1;i<5;i++) c[i]+=c[i-1];
for (int i=8;i>=0;i--) {
    b[c[a[i]]-1]=a[i];
    c[a[i]]--;
}
② for (int i=0;i<9;i++) cout << b[i];
```

Show the output produced by line ① and line ②. (10%)