

國立臺北科技大學

九十三年學年度商業自動化與管理研究所入學考試

計算機概論試題

填 准 考 證 號 碼

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注意事項：

1. 本試題共四大題，配分共 100 分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在答案卷之答案欄內，否則不予計分。

一、 選擇題(單選題，每題 2 分，共 60 分)

1. Ted writes down a number between 1 and 1000. John must identify that number by asking "yes/no" questions of Ted. John knows that Ted always tells the truth. If John uses an optimal strategy, then he will determine the answer at the end of exactly how many questions in the worst cases?
 (a) 1,000 (b) 999 (c) 500 (d) 10 (e) 32
2. Which of the following decimal numbers has an exact representation in binary notation?
 (a) 0.1 (b) 0.2 (c) 0.3 (d) 0.4 (e) 0.5
3. The technique in shared systems that avoids mixing printout from several programs is
 (a) paging (b) slicing (c) spooling (d) queuing (e) stacking
4. The technique whereby part of the program is stored on disk and is brought into memory for execution as needed is called
 (a) memory allocation (b) pipelining (c) interrupts (d) prioritized memory
 (e) virtual storage

5. In multiprogramming, how can two or more programs be executed?
(a) with two computers (b) simultaneously (c) concurrently
(d) by optimizing compilers (e) sequentially
6. Time-sharing of resources by users is usually
(a) based on time slices (b) operated by spooling (c) based on output
(d) based on input (e) event-driven
7. Of the following, which best characterizes computer that use memory-mapped I/O?
(a) The computer provides special instructions for manipulating I/O ports.
(b) Ports are referenced only by memory-mapped instructions of the computer and are located at hardwired memory locations.
(c) To perform an I/O operation, it is sufficient to place the data in an address register and call the channel to perform the operation.
(d) I/O ports are placed at addresses on the bus and are accessed just like other memory locations.
(e) I/O can be performed only when memory management hardware is turned on.
8. Which of the following is an operating system designed for embedded systems?
(a) Windows XP (b) MS-DOS (c) Windows CE (d) Mac OS X (e) Linux
9. What type of software is used for collaborative efforts?
(a) vertical-market software (b) system software (c) electronic distribution software
(d) user-friendly software (e) groupware
10. Data and instructions are put into primary storage by
(a) the control unit (b) the ALU (c) secondary storage (d) memory (e) bus
11. Computer operations are synchronized by
(a) megabytes (b) the CPU clock (c) the binary system (d) E-time
(e) bus cycle.
12. _____ cache is built into the CPU chip.
(a) external (b) internal (c) L3 (d) disk (e) SDRAM

28. Let Q be the Statement:

for i:=1 to N do V[i]:=V[i]+1

Which of the following perform the same changes to V as Q?

I: i:=0;

While i<=N do

Begin i:=i+1; V[i]:=V[i]+1 end

II: i:=1;

While i<N do

Begin V[i]:=V[i]+1; i:=i+1 end

III: i:=0;

While i<N do

Begin V[i+1]:=V[i+1]+1; i:=i+1 end

(a) I only (b) II only (c) III only (d) II and III only (e) I, II, and III

29. Consider the following program:

var i,j: integer;

procedure p(k, m: integer);

begin

k:=k-m;

m:=k+m;

k:=m-k;

end;

i:=2;

j:=3;

P(i, j);

If both parameters to P are passed by reference, what are the values of i and j at the end of the program?

(a) i=0, j=2 (b) i=1, j=5 (c) i=2, j=3 (d) i=3, j=2 (e) None of the above.

21. A file with a record of Web site activity is called a(n)
(a)active file (b)filter file (c)hot file (d)cookie file (e)book mark file
22. A(n) _____ database organizes data in rows and columns.
(a)object-oriented (b)network (c)relational (d)hierarchical (e)DBASE
23. The ability of an object to interpret a message using its own methods is known as
(a)polymorphism (b)messaging (c)inheritance (d)encapsulation (e)object
24. The presence of both data and its related instructions in an object is called
(a)C++ (b)orientation (c)inheritance (d)encapsulation (e)method
25. Of the following sorting algorithms, which has a running time that is LEAST dependent on the initial ordering of the input?
(a)insertion sort (b)quick sort (c)merge sort (d) selection sort (e)shell sort

Considering the following C-like Program.

```
#include <stdio.h>
main()
{
float sum=0.0, j=1.0 i=2.0;
while (i / j>0.001)
{
j=j+j;
sum=sum + i / j;
printf(“%f\n”, sum);
}
}
```

26. How many lines of output does the program produce?
(a)0-9 (b)10-19 (c)20-29 (d)30-39 (e)40-49
27. Which of the following is the integer that the best approximates the last number printed?
(a)0 (b)1 (c)2 (d)3 (e)4

13. Let P be a procedure that for some input calls itself(i.e. , is recursive). If P is guaranteed to terminate, which of the follow statements must be true?
- I. P has a local variable.
 - II. P has an execution path where it does not call itself.
 - III. P either refers to a global variable or has at least one parameter.
- (a)I only (b)II only (c)III only (d)I and II only (e)II and III only
14. A design technique that allows the CPU to begin processing one instruction before the previous instruction is finished is called
- (a)RISC (b)serial processing (c)parallel processing (d)pipelining
(e)CISC
15. The electrical circuitry that executes program instructions is the
- (a)central processing unit (b) register (c)operator (d)bus line
(e)memory
16. The rate of screen refreshment is called
- (a) scan rate (b)pixel speed (c) bit-map speed (d)raster rate (e)CPU rate
17. A starvation-free job-scheduling policy guarantees that no job waits indefinitely for service. Which of the following job-scheduling policies is starvation-free?
- (a) round-robin (b) priority queuing (c) shortest job first (d) youngest job first
(e) none of the above.
18. The RAID method of duplicating data on multiple disks is called
- (a) the sector method (b)data striping (c)zoning (d)data mirroring
(e) data mining
19. Two dissimilar networks can be connected by a _____.
- (a)gateway (b)bus (c)node (d)server (e)router
20. Which device is used to transfer messages between LANs that use the Internet protocol?
- (a) IP switch (b) gateway (c) token (d) bus(e) router

30. If the expression $((2+3) * 4 + 5 * (6+7)*8)+9$ is evaluated with $*$ having precedence over $+$, then the value obtained is the same as the value of which of the following prefix expressions?

(a) $++*+234**5+6789$

(b) $+*++234**5+6789$

(c) $*++234**5++6789$

(d) $*+++234**5+6789$

(e) $+*+*234++5*6789$

二、 請說明 web service 特色?(5分)並解釋 SOAP, UDDI, WSDL。(15分)

三、 請用圖解釋五種 CPU 定址模式(addressing modes)?(10分)

四、 Computer A 的 CPU 時脈速率為 100 MHz，執行程式 P 需要 10 秒。今天我們希望設計一台 Computer B 在 6 秒內能執行完這個程式 P，Computer B 的 CPU 時脈週期比 Computer A 增加 1.2 倍，請問 Computer B 的 CPU 時脈速率為何?(10分)