

系所組別：會計學系乙組

考試科目：計算機概論

考試日期：0308，節次：2

※ 考生請注意：本試題 可 不可 使用計算機**I. Multiple Choice Questions (3% each) (單選題，共 20 題，每題 3 分)**

請先於答案卷首頁自行劃方格（如 4 列，每列 5 格），並將選擇題答案填入方格中。

1. Currently, the protocols used for secure information transfer over the Internet are:

- A. TCP/IP and SSL.
- B. S-HTTP and CA.
- C. HTTP and TCP/IP.
- D. SSL, TLS, and S-HTTP.

2. Which of the following services enables logging on to one computer system and working on another?

- A. FTP
- B. LISTSERV
- C. Telnet
- D. World Wide Web

3. Which of the following best describes the NOR operation?

- A. An XOR followed by a NOT
- B. An OR followed by a NOT
- C. A NOT followed by a NOT
- D. An AND followed by a NOT

4. Which of the following is the binary representation of  $4 \frac{5}{8}$ ?

- A. 100.11
- B. 10.011
- C. 110.101
- D. 100.101

5. Which of the following is not contained in a CPU?

- A. Instruction register
- B. Program counter
- C. General-purpose register
- D. Memory cell

6. Which of the following items of information would not be contained in an operating system's process table?

- A. The location of the memory area assigned to the process
- B. The priority of each process
- C. Whether the process is ready or waiting
- D. The machine language instructions being executed by the process

(背面仍有題目,請繼續作答)

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7. Which of the following is not a means of obtaining a form of multitasking?  
A. Pipeling B. Time sharing C. Virtual memory D. Multiple processors
8. In general, an algorithm in which of the following categories is considered more efficient?  
A.  $\Theta(\lg n)$  B.  $\Theta(n)$  C.  $\Theta(n \lg n)$  D.  $\Theta(n^2)$
9. Which of the following is an example of a language that is based on the object-oriented paradigm?  
A. LISP B. PROLOG C. C D. C++
10. Which of the following is not a possible value of the expression  $4 + 6 \div 2 - 1$ ?  
A. 4 B. 5 C. 6 D. 10
11. Which of the following is a way of testing the design of a software system?  
A. Entity-relationship diagram  
B. Class diagram  
C. Structure chart  
D. Structured walkthrough
12. Copyright laws were established  
A. to allow authors to distribute their work while maintaining certain ownership rights.  
B. to allow authors to maintain ownership of their ideas.  
C. to restrict access to publications to certain groups within society.  
D. to allow ideas to be traced back to their origins.
13. Which of the following data mining techniques would be applied when trying to identify any underlying heterogeneity within housing patterns in a community?  
A. Class description  
B. Class discrimination  
C. Cluster analysis  
D. Association analysis
14. In an artificial neural network, what must be true about the threshold value of a processing unit that processes an output of 1 when all of its inputs are 0?  
A. It is less than -2.  
B. It is not positive.  
C. Both A and B are true.

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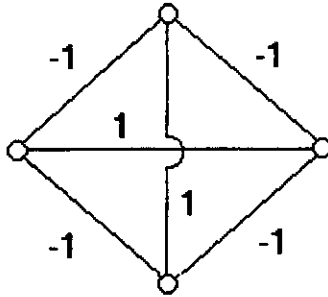
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D. Nothing can be determined without knowing the weights.

15. The diagram below represents an associative memory as described in the text. If each unit has a threshold value of 0.5, what stable state will the system reach if it is initiated with the top unit excited and the others inhibited?



- A. All units excited
- B. Only the side units excited
- C. No units excited
- D. Only the top and bottom units excited

16. In an artificial neural network, which of the Boolean operations AND, OR, and XOR can a single processing unit with two inputs be programmed to compute?

- A. AND only
- B. OR only
- C. XOR only
- D. AND and OR only

17. Which of the following programming methodologies seeks to develop software by a “trial and error” approach?

- A. Object-oriented programming
- B. Structured programming
- C. Evolutionary programming
- D. Declarative programming

18. The class of problems known as NP is so named because it is composed of which of the following?

- A. Non-polynomial problems
- B. Non-programmable problems
- C. Non-universal problems
- D. Non-deterministic polynomial problems

19. What is the term for a collection of technologies including hardware, software, and media designed to exchange information and resources?

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- A. Amalgamation
- B. Datalink
- C. network
- D. WWW

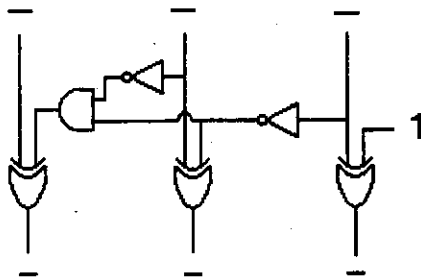
20. What is the term for the technology of using the Internet to take the place of the standard telephone service?

- A. Audio-conferencing
- B. Data-conferencing
- C. Phone Phreaking
- D. Voice over IP

**II. Essay Questions (40%) (問答題，共六題)**

1. If the input and output bit patterns in the circuit below are interpreted as binary representations of numeric values, what operation does the circuit perform? (7%)

**Input Pattern**



**Output Pattern**

2. What terms in the following HTML document are linked to other documents? (6%)

```
<html>
<head>
<title>This is the title</title>
</head>
<body>
<h1>Favorite Animals</h1>
<p>Of all the animals in the world, the
<a href="http://pigs.org/pigs.html">pig</a> is
```

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```
perhaps the most charming.</p><p>However, the
<a href="http://hippopotamuscity.org/hippo.html">
hippopotamus</a> is also cute.</p>
</body>
</html>
```

3. Explain the distinction between a procedure and a function. (4%)

4. The following is an error-correcting code in which any two patterns differ by a Hamming distance of at least three. (8%)

Symbol	Representation
A	000000
B	001111
C	010011
D	011100
E	100110
F	101001
G	110101
H	111010

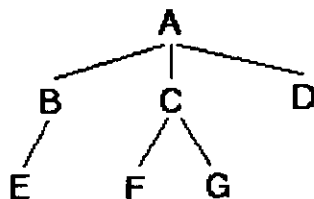
Decode each of the following patterns

010011 \_\_\_\_\_ 101010 \_\_\_\_\_ 011000 \_\_\_\_\_ 101101 \_\_\_\_\_

5. Write the answer to each of the following logic problems. (6%)

10101010      10101010      10101010  
AND 11110000      OR 11110000      XOR 11110000

6. Answer the following questions in terms of the tree below. (9%)



- A. The root node is \_\_\_\_\_.
- B. Three nodes that are siblings are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- C. The terminal nodes are \_\_\_\_\_.
- D. The node with only one child is \_\_\_\_\_.