

臺灣綜合大學系統 105 學年度學士班轉學生聯合招生考試試題

科目名稱	計算機概論	類組代碼	C05
		科目碼	C0501

※本項考試依簡章規定各考科均「不可以」使用計算機

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Multiple Choice (單選題 25 題，每題 4 分)

- A network switch uses a _____ that is very similar to a routing table used in a router.
 - cable plan
 - forwarding table
 - network server
 - reversing table
- Which of the following is NOT true about CSMA/CD?
 - The acronym refers to Carrier Sense Multiple Access with Collision Detection.
 - It is used in token ring protocol LANs.
 - It is a contention-based media access control technique.
 - When a collision has occurred, the computers that wish to transmit wait a random amount of time after a colliding message before attempting to retransmit.
 - Computers on the circuit 'listen' before transmitting.
- With odd parity (assume that the parity bit has been placed at the end of each of the following) and a 7-bit ASCII code, which of the following is NOT correct?
 - 01101011
 - 00011011
 - 00100101
 - 11111110
- The source port identifier tells the destination station _____.
 - which computer sent the TCP packet
 - which application layer program that the packet should be sent
 - which application layer program the packet is from
 - the IP address of the source computer
 - the IP address of the destination computer
- The current IPv4 specification uses addresses to identify hosts that consist of:
 - 16 bits
 - 64 bits
 - 32 bits
 - 128 bits
- The newer IPv6 specification uses addresses to identify hosts that consist of:
 - 128 bits
 - 64 bits
 - 32 bits
 - 16 bits

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<p>7. Which of the following approaches in processor architectures highly depends on the compiler optimization of code generation to exploit instruction level parallelism?</p> <p>A. Out-of-order execution B. Very long instruction word C. Superscalar D. Pipelining</p> <p>8. The class of problems known as NP-hard is so named because it is composed of which of the following?</p> <p>A. Non-deterministic polynomial problems B. Non-polynomial problems C. Non-programmable problems D. Non-universal problems</p> <p>9. The binary search algorithm is an example of an algorithm in which of the following classes?</p> <p>A. $\Theta(\lg n)$ B. $\Theta(n)$ C. $\Theta(n \lg n)$ D. $\Theta(n^2)$</p> <p>10. Which of the following is not a step in the process of compiling a program?</p> <p>A. Executing the program B. Parsing the program C. Lexical analysis D. Code generation</p> <p>11. If a carrier wave is modulated with 4 amplitudes and 4 phase changes, how many bits can be represented with each signal change?</p> <p>A. 16 B. 2 C. 8 D. 4</p> <p>12. One of the main differences between amplifiers and repeaters is that:</p> <p>A. Amplifiers forward noise as well as data. B. Amplifiers clean the signal and then forward it. C. Repeaters increase the amount of attenuation. D. Amplifiers focus primarily on digital signals.</p> <p>13. Which of the following is a Last In First Out structure?</p> <p>A. Array B. Stack C. Queue D. Tree</p>			

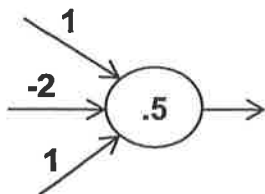
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14. In an artificial neural network, what input values will cause the neuron below to produce an output of 1?



- A. All three 0
 B. All three 1
 C. Any combination in which the center input is 0 and at least one other input is 1
 D. Any combination in which at least one input is 1
15. A section of a program that should be executed by at most one process at a time is called a
 A. Utility
 B. Critical region
 C. Privileged instruction
16. Which of the following components of an operating system handles the details associated with particular peripheral equipment?
 A. Device drivers
 B. File manager
 C. Memory manager
17. Which of the following is not an activity performed entirely within a CPU?
 A. Fetch instructions
 B. Perform Boolean operations
 C. Perform arithmetic operations
 D. Move data between registers
18. What is the result of the following subtraction problem (using two's complement notation)?

$$\begin{array}{r} 00001111 \\ - 10101010 \\ \hline \end{array}$$

- A. 01100101
 B. 10111001
 C. 01010101
 D. 10110101

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19. Which of the following bit patterns (represented in hexadecimal notation) represents a negative number in two's complement notation?

- A. 7F
- B. 55
- C. A6
- D. 08

20. Given the relation below

X:	<u>A</u>	<u>B</u>	<u>C</u>
	2	5	7
	3	3	6
	4	4	2
	5	2	2

What values will be retrieved by executing the following SQL statement?

```
SELECT  A, B
FROM    X
WHERE   X.B = X.C
```

- A. 2, 5
- B. 3, 6
- C. 5, 2
- D. 2, 2

21. If a stack contained the entries w, x, y, z (from top to bottom), which of the following would be the contents after two entries were removed and the entry r was inserted?

- A. w, x, r
- B. y, z, r
- C. r, y, z
- D. r, w, x

22. If the longest path in a binary tree contained exactly four nodes, what is the maximum number of nodes that could be in the entire tree?

- A. 4
- B. 7
- C. 15
- D. 31

23. If the two-dimensional array X were stored in row-major order, then in the block of main memory containing X , which of the following would be true?

- A. The entry $X[1,2]$ would appear before $X[2,1]$.
- B. The entry $X[1,2]$ would appear after $X[2,1]$.
- C. The entry $X[1,2]$ would be in the same location as $X[2,1]$.
- D. None of the above

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24. Which of the following does not require a Boolean structure?

- A. If-then-else statement
- B. While loop statement
- C. Assignment statement
- D. For loop statement

25. Determine the number of non-negative integer solutions for $x_1 + x_2 + x_3 + x_4 + x_5 = 40$.

- A. 1221759
- B. 135751
- C. 6108795
- D. 91390