

單選擇 (每題 2 分)

- ( ) 1. Which is an operating system for mobile phones? (A) DOS (B) SQL (C) iOS (D) None of the above
- ( ) 2. Assume  $x = 2$  and  $y = 1$ . Which of the following is true?  
(A)  $x == 1$  and  $y > 2$  (B)  $x == 1$  or  $y > 1$  (C) not ( $x == 2$  and  $y > 0$ ) (D)  $x > 1$  or  $y > 1$
- ( ) 3. When the number of bits used to represent an unsigned number in a computer is not enough, what situation will occur?  
(A) Shutdown (B) Overflow (C) Underflow (D) Overheat
- ( ) 4. A 4-minute song is sampled at rate of 10,000 samples/second with the bit depth of 16. What is the size of the song?  
(A)  $32 \times 10^5$  Bytes (B)  $24 \times 10^5$  Bytes (C)  $48 \times 10^5$  Bytes (D) None of the above
- ( ) 5. The \_\_\_\_ operation complements the value of a Boolean expression. (A) NOR (B) NOT (C) OR (D) AND
- ( ) 6. The operation "if ( $n > 0$ ) print n" is a(n) \_\_\_\_ operation.  
(A) Conditional (B) Hierarchal (C) Iterative (D) Sequential
- ( ) 7. Convert  $-110.101_2$  to its decimal representation. (A) -8.625 (B) -8.375 (C) -6.75 (D) -6.625
- ( ) 8. Convert  $12.375_{10}$  to its binary representation. (A) 1100.011 (B) 1100.101 (C) 1010.011 (D) 1010.101
- ( ) 9. Convert  $112_{10}$  to its hexadecimal representation. (A)  $60_{16}$  (B)  $70_{16}$  (C) 8016 (D)  $90_{16}$
- ( ) 10. Which is used to locate a memory location? (A) decoder (B) multiplexor (C) cache (D) IR
- ( ) 11. A memory unit is organized as a 4,096 x 1,024 two dimensional array. What is the size of MAR?  
(A) 21 bits (B) 22 bits (C) 23 bits (D) 24 bits
- ( ) 12. If a computer uses 4-byte cells, how many memory cells are there in a memory of 1 GB?  
(A)  $2^{27}$  (B)  $2^{28}$  (C)  $2^{29}$  (D)  $2^{30}$
- ( ) 13. \_\_\_\_ is needed for a code of 1000 instructions to run at a machine of 100 MIPS.  
(A) 100 ns (B) 1  $\mu$ s (C) 10  $\mu$ s (D) 1 ms
- ( ) 14. The \_\_\_\_ of a disk is the time for the beginning of the desired sector to rotate under the read/write head.  
(A) latency (B) transfer time (C) frequency (D) seek time
- ( ) 15. Which is a type of cloud computing?  
(A) Wireless sensor networks (B) AJAX (C) XML (D) Google Docs
- ( ) 16. The BIOS is usually stored in \_\_\_\_\_. (A) RAM (B) cache (C) ROM (D) hard disk
- ( ) 17. Compressing files will not reduce a disk \_\_\_\_?  
(A) Storage capacity (B) Access time (C) Data transfer rate (D) None of the above
- ( ) 18. In a machine language instruction operation code takes 8 bits. What is the maximum number of distinct operation codes that can be recognized and executed by the processor on this machine?  
(A) 256 (B) 1024 (C) 8192 (D) 65536

- ( ) 19. The \_\_\_\_ is used to fetch, decode, and execute instructions.  
(A) arithmetic/logic unit (ALU) (B) I/O controllers (C) memory (D) control unit
- ( ) 20. 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 (D) None of the above
- ( ) 21. Which of the following is not a means of performing multiple activities at the same time?  
(A) Pipelining (B) Multiprogramming (C) Virtual memory (D) Multiple processors
- ( ) 22. Which is an interpreted programming language? (A) C++ (B) PHP (C) Java (D) none of the above
- ( ) 23. \_\_\_\_ is a freeware operating system. (A) Windows (B) Mac OS (C) Palm OS (D) Linux
- ( ) 24. 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 (D) None of the above
- ( ) 25. What does HTML stand for?  
(A) HyperText Markup Language (B) Home Tool Markup Language  
(C) Hyperlinks and Text Markup Language (D) None of the above
- ( ) 26. Which program uses SMTP? (A) Skype (B) Firefox (C) Outlook (D) None of the above
- ( ) 27. Which port does HTTP use? (A) 21 (B) 23 (C) 25 (D) 80
- ( ) 28. A Web client and server communicate through \_\_\_\_\_. (A) DNS (B) HTTP (C) FTP (D) ISP
- ( ) 29. Most wide area networks use a store-and-forward, \_\_\_\_\_ technology to deliver messages.  
(A) Virtual circuit (B) Data-link (C) Ethernet (D) Packet-switched
- ( ) 30. Which is a huge interconnected "network of networks"? (A) LAN (B) WAN (C) Internet (D) WWW
- ( ) 31. Ethernet is a means of implementing which of the following network topologies?  
(A) Star (B) WiFi (C) Bus (D) None of the above
- ( ) 32. Which of the following is not associated with object-oriented programming?  
(A) Resolution (B) Inheritance (C) Encapsulation (D) Polymorphism
- ( ) 33. 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++
- ( ) 34. Which of the following is a notational system for representing object-oriented designs?  
(A) Structure charts (B) Modular designs (C) Dataflow diagrams (D) UML
- ( ) 35. Which of the following is a FIFO structure? (A) Array (B) Stack (C) Queue (D) Tree
- ( ) 36. Which is the discovery of new information in terms of patterns or rules from vast amounts of data?  
(A) Database (B) Data compression (C) Data mining (D) None of the above
- ( ) 37. Which of the following algorithms represents an optimal solution (in terms of time complexity) for sorting a list?  
(A) Bubble sort (B) Merge sort (C) Insertion sort (D) Selection sort

- ( ) 38. Which is a language for defining markup languages? (A) HTML (B) HTTP (C) XSLT (D) XML
- ( ) 39. Which is an application of social networks? (A) Facebook (B) Google (C) Ebay (D) None of the above
- ( ) 40. Which operating system is Android based on? (A) Windows (B) Linux (C) MacOS (D) None of the above
- ( ) 41. Consider the following code, assuming that x is an int with an initial value of 12, what is the output?  
If (x = 6) cout << x;  
(A) 6 (B) 12 (C) Nothing (D) A syntax error is produced.
- ( ) 42. The type of the data structure that is used in relational model is (A) Table (B) Tree (C) Node (D) Index.
- ( ) 43. A relationship among entities of the same class is called:  
(A) HAS-A relationship (B) IS-A relationship (C) Ternary relationship (D) Recursive relationship.
- ( ) 44. Which of the following is not a valid aggregate function?  
(A) COUNT (B) COMPUTE (C) SUM (D) MAX.
- ( ) 45. A \_\_\_\_\_ predesigned document that already has coordinating fonts, a layout, and a background.  
(A) ruler (B) model (C) template (D) guide
- ( ) 46. Which graphic type is commonly only found on the Macintosh family of operating systems?  
(A) bmp (B) jpg (C) gif (D) pict
- ( ) 47. Which of the following is Class C IP address?  
(A) 10.10.14.118 (B) 135.23.112.57 (C) 191.200.199.199 (D) 204.67.118.54
- ( ) 48. Which of the following name does not relate to stacks?  
(A) FIFO lists (B) LIFO list (C) Piles (D) Push-down lists
- ( ) 49. The complexity of Binary search algorithm is (A)  $O(n)$  (B)  $O(\log n)$  (C)  $O(n^2)$  (D)  $O(n \log n)$
- ( ) 50. Assuming that t is an array and tPtr is a pointer to that array, which expression refers to the address of the fourth element?  
(A)  $*(tPtr + 3)$  (B)  $tPtr[3]$  (C)  $\&t[3]$  (D)  $*(t + 3)$