



I. 選擇題(單選,每題 2.5 分)

1. Turing machines consist of
A. a central processor and main memory B. a read/write head and a tape
C. vacuum tubes D. paper tape and a paper punch
2. What is the time complexity of the problem of searching for a particular entry in a list? A.
 $O(\log_2 n)$ B. $O(n)$ C. $O(n \log_2 n)$ D. $O(n^2)$
3. 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
4. In an artificial neural network, which of the following pairs of input connection weights would cause a neuron with two inputs and a threshold value of 3 to produce an output of 1 only when both of its inputs are 1?
A. 0, 0 B. 2, 0 C. 0, 2 D. 2, 2
5. Which of the following handles communication with the user of a database?
A. Application software B. Database management system C. Actual database
6. Which of the following relational operations combine data from more than one relation? A.
SELECT B. PROJECT C. JOIN
7. Which of the following is a LIFO structure?
A. Array B. Stack C. Queue D. Tree
8. Suppose a binary tree contained the nodes W, X, Y, and Z. If W and X were children of Y, and Z had no children, which node would be the root?
A. W B. X C. Y D. Z
9. Which of the following is a notational system for representing object-oriented designs?
A. UML B. Structure charts C. Modular designs D. Dataflow diagrams
10. Which of the following is most likely an example of a many-to-many relationship?
A. Subscribers and magazines B. Birth dates and people
C. Planets and their moons D. Dinner guests and table settings



11. Which of the following is an example of a language that is based on the functional paradigm?
A. LISP B. PROLOG C. C D. C++
12. Which of the following is ignored by a compiler?
A. Control statements B. Declarations of constants
C. Function headers D. Comment statements
13. Which of the following is an activity?
A. Algorithm B. Program C. Process
14. When searching within the list
Lewis, Maurice, Nathan, Oliver, Pat, Quincy, Roger, Stan, Tom
which of the following entries will be found most quickly using the sequential search algorithm?
A. Lewis B. Pat C. Tom
15. Which of the following is not a way of classifying networks?
A. WAN versus LAN B. Closed versus open
C. Router versus bridge D. Star versus bus
16. Which of the following connects existing networks to form an internet?
A. Bridge B. Router C. Switch D. Repeater
17. Which of the following components of an operating system maintains the directory system?
A. Device drivers B. File manager C. Memory manager
18. Multitasking in a computer with only one CPU is accomplished by a technique called A.
Bootstrapping B. Batch processing C. Multiprogramming
19. Which of the following is not contained in a CPU?
A. Instruction register B. Program counter
C. General-purpose register D. Memory cell
20. The bus in a computer is an example of which form of communication?
A. Serial B. Parallel C. Neither A nor B



II. 選擇題(單選每題 2 分)

21. _____ computers have four central processing units (CPUs).
- A) Tetra-processor
 - B) Dual-processor
 - C) Quad-processor
 - D) Tri-processor
22. _____ states that the value of a network is equal to the square of the number of users connected to it.
- A) Metcalfe's Law
 - B) Moore's Law
 - C) Nielsen's Law
 - D) Kryder's Law
23. As the cost of data processing, storage, and communications is essentially zero, any routine skill can and will be _____.
- A) sufficient to attain job security
 - B) considered a non-routine cognitive skill
 - C) a strong marketable skill
 - D) outsourced to the lowest bidder
24. Which of the following is a major drawback of multi-user processing of a database?
- A) lack of data integrity
 - B) software redundancy
 - C) limited access to data
 - D) lost-update problem
25. Which of the following is a result of Moore's law?
- A) The cost of data processing has increased considerably.
 - B) The price to performance ratio of computers has fallen dramatically.
 - C) The outsourcing of nonroutine skills has increased drastically.
 - D) The risk of technology becoming obsolete has decreased.
26. Which of the following statements is true about information systems?
- A) They can be bought off the shelf.
 - B) They are a group of components that produce information.
 - C) They drive the development of information technology.
 - D) They are not susceptible to the changing needs of the market.



27. Application programs that run within a browser, without the need to be preinstalled on client computers, are referred to as _____.
- A) thick-client applications
 - B) thin-client applications
 - C) native applications
 - D) desktop programs
28. Which of the following statements is true of Web services?
- A) They are programs that comply with IEEE 802.3 protocol standard.
 - B) They are designed in such a way that they cannot be flexibly combined with other programs.
 - C) They are programs that comply with Web service standards and can only run as an independent program.
 - D) They are programs designed using the concept of service-oriented architecture.
29. Which of the following statements is true of systems development for bigger systems and longer projects?
- A) The diseconomies of scale are reduced.
 - B) The changes in requirements are increased.
 - C) The average contribution per worker is increased.
 - D) The project budgeting and scheduling becomes easy.
30. Which of the following is true of the alignment between information systems and organizational strategies?
- A) Information systems must evolve with changes made in organizational strategies.
 - B) The infrastructure of information systems can be easily influenced by strategic changes.
 - C) Integrating different information systems applications with organizational strategies is inexpensive.
 - D) Maintaining the alignment between information systems and strategies is a final process.
31. A(n) _____ is a measure that individuals or organizations take to block a threat from obtaining an asset.
- A) denial of service
 - B) safeguard
 - C) information silo
 - D) third-party cookie



32. A(n) _____ is a sophisticated, possibly long-running computer hack that is perpetrated by large, well-funded organizations like governments.

- A) advanced persistent threat
- B) identity threat
- C) copyright theft
- D) network sniffer attack

33. Backup and recovery against computer security threats are _____.

- A) technical safeguards
- B) data safeguards
- C) human safeguards
- D) hardware safeguards

34. The procedure of entrusting a party with a copy of an encryption key that can be used in case the actual key is lost or destroyed is called _____.

- A) key escrow
- B) pledged encryption
- C) insured encryption
- D) key replication

35. _____ process operational and other data in organizations to analyze past performance and make predictions.

- A) Virtualization techniques
- B) Live migration techniques
- C) Business intelligence systems
- D) Windowing systems

III. 簡答題(每題 10 分)

1、請舉例說明「商業智慧」(Business Intelligence; BI)的典型用途，及其資料分析主要方式。

2、請說明 IS 部門的主要職務，並從資訊長(CIO)的觀點，分析公司如何規劃資訊系統的用途。