



選擇題(單選題,每題 2 分,共計 100 分)

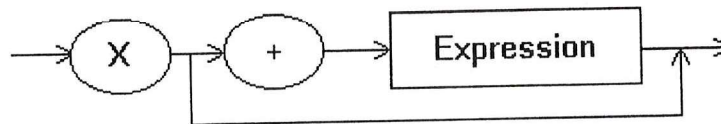
(請依題號作答並將答案寫在答案卷上,違者不予計分)

1. One of the latest techniques for user authentication involves something that is related to who the user is. This technique is called
 - A. smartphone detection
 - B. ATM card
 - C. biometric sensing
 - D. password reset
2. Some of the common techniques listed below help protect the computer resources from being used by unauthorized personnel. Choose the one that is incorrect.
 - A. Each user has an unique login account
 - B. An administrator account monitors and alters settings of regular users
 - C. The user login password is taped to the monitor/screen so he/she does not forget the password
 - D. Only authorized software downloads are permitted on regular user accounts
3. Which of the following would not require real-time processing?
 - A. Typing a document with a word processor
 - B. Navigation of an aircraft
 - C. Forecasting world-wide trend for the next five-year period
 - D. Maintaining a airline reservation system
4. Which of the following is assigned the task of providing individual users access to the Internet?
 - A. Tier-1 ISPs
 - B. Tier-2 ISPs
 - C. Access ISPs
 - D. ICANN
5. Which kind of system describes a distributed system in which many independent computers work closely together to provide computation or services comparable to a much larger machine?
 - A. Cluster computing
 - B. Peer-to-peer network
 - C. Open network
 - D. POP3
6. Most machine languages are based on the
 - A. Imperative paradigm
 - B. Declarative paradigm
 - C. Functional paradigm
 - D. Object-oriented paradigm
7. Which of the following is not a step in the process of translating a program?
 - A. Executing the program
 - B. Parsing the program
 - C. Lexical analysis
 - D. Code generation



8. Which of the following is not a parse tree of an expression based on the following grammar?

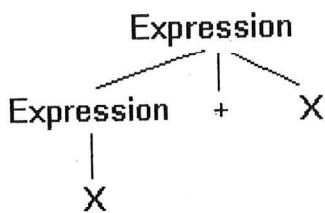
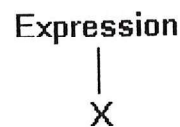
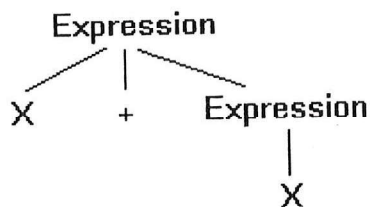
Expression:



A.

B.

C.



9. 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

10. In general, an algorithm in which of the following categories is considered more efficient?

A. $\Theta(\log_2 n)$ B. $\Theta(n)$ C. $\Theta(n \log_2 n)$ D. $\Theta(n^2)$

11. Which of the following software engineering methodologies is the most rigid?

A. Incremental model B. Waterfall model
C. Extreme programming D. Evolutionary prototyping

12. Which of the following is a notational system for representing object-oriented designs?

A. UML B. Structure charts C. Modular designs D. Dataflow diagrams

13. Which of the following is an attempt to construct software from off-the-shelf components as is



done in other engineering fields?

- A. Extreme programming B. Evolutionary prototyping
C. Component architecture D. Open-source development

14. Suppose you were going to retrieve items of data that you would later need to process in the opposite order from that in which they were retrieved. Which of the following would be the best structure in which to store the items?

- A. Tree B. Stack C. Queue D. Traditional linked list

15. 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

16. Given the relation X below

X:	<u>A</u>	<u>B</u>	<u>C</u>
	2	5	7
	3	3	3
	4	3	2
	5	2	8

what value will be extracted by the following query?

TEMP ← SELECT from X where B > C
RESULT ← PROJECT A from TEMP

- A. 2 B. 3 C. 4 D. 5

17. Given the two relations X and Y below

X:	<u>A</u>	<u>B</u>	Y:	<u>C</u>	<u>D</u>
	7	s		t	3
	2	z		r	2

what value would be retrieved by executing the following SQL statement?

SELECT Y.C FROM X, Y WHERE X.A > Y.D

- A. s B. z C. t D. r



18. Which of the following is not associated with a parallel projection?
- Projection plane
 - Projectors
 - Center of projection
 - All of the above
19. The restricted portion of the projection plane that defines the boundaries of the final image is known as the
- Image window
 - Z-buffer
 - Center of projection
 - Frame buffer
20. The phenomenon of a light ray bending as it passes through materials of different density is called
- Reflection
 - Incidence
 - Refraction
 - Ray tracing
21. Which of the following is an example of procedural knowledge?
- Knowing the rate of growth of the world's population
 - Knowing how to tie your shoes
 - Knowing your name
 - Knowing the exchange rate of different national currencies
22. If the heuristic being used is the-number-of-tiles-out-of-place, which of the following eight-puzzle will be given priority for further consideration by a heuristic search?
- | | | | |
|----------|--------|--------|--------|
| A. 1 2 3 | B. 2 3 | C. 1 3 | D. 1 3 |
| 4 5 | 1 5 6 | 4 2 6 | 4 2 6 |
| 7 8 6 | 4 7 8 | 7 5 8 | 7 5 8 |
23. Which of the following Bare Bones programs is self-terminating?
- while X not 0:
 decr X
 - while X not 0:
 while X not 0:
 - decr X
24. Which of the following statements is false?



- A. If a problem can be solved by a Bare Bones program, then it can be solved by a Turing machine.
- B. If a problem can be solved by a Turing machine, then it can be solved by a Bare Bones program.
- C. The halting problem cannot be solved by a Bare Bones program.
- D. The halting problem can be solved only by using a universal programming language.
25. Which of the following questions has not yet been answered by researchers?
- A. Is P contained in NP?
- B. Is NP contained in P?
- C. Are all the problems in NP solvable?
- D. Are all the problems in P solvable?
26. Which of the following is not a role of a typical operating system?
- A. Control the allocation of the machine's resources
- B. Control access to the machine
- C. Maintain records regarding files stored in mass storage
- D. Assist the computer user in the task of processing digital photographs
27. 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
28. The latest trend in distributed systems whereby huge pools of shared computers on the network can be allocated for use by clients as needed is called ____.
- A. LAN computing B. cloud computing C. tier-1 computing D. VoIP
29. Which layer of the TCP/IP hierarchy is responsible for obtaining the correct address for a message's destination?
- A. Application B. Transport C. Network D. Link



30. Which of the following identifies the application to which a message arriving from the Internet should be given?

- A. Protocol B. Port number C. Domain D. Hop count

31. Which of the following is a program that enters a computer system disguised as a desirable program, such as a game or useful utility package, that is willingly imported by the victim?

- A. Virus B. Sniffer C. Worm D. Trojan horse

32. Which of the following is ignored by a compiler?

- A. Control statements B. Declarations of constants
C. Function headers D. Comment statements

33. Which of the following is not associated with object-oriented programming?

- A. Inheritance B. Resolution C. Encapsulation D. Polymorphism

34. Which of the following is a loop invariant at the point at which the test for termination is performed in the following loop structure?

```
x = 3
repeat:
    x = x + 2
until (x > 5)
```

- A. $x > 5$ B. $x < 8$ C. $x \geq 5$ D. $x \leq 6$

35. Which of the following is not a way of representing algorithms?

- A. Stepwise refinement B. Pseudocode C. Flowchart D. Programming language

36. Which of the following is not a means of repeating a block of instructions?

- A. Pretest loop B. Posttest loop C. Recursion D. Assignment statement

37. Which of the following is most likely an example of a one-to-one relationship?



- A. Subscribers and magazines B. Birth dates and people
C. Planets and their moons D. Dinner guests and table settings

38. 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

39. 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

40. As dynamic data structures grow and shrink, storage space is used and released. The process of reclaiming unused storage space for future use is known as ____.

- A. memory leak B. aggregation C. garbage collection D. abstraction

41. 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

42. Which of the following is not a potential problem caused by multiple transactions manipulating a database at the same time?

- A. Lost update problem B. Clustering C. Deadlock D. Incorrect summary problem

43. Which of the following features within a DBMS is not provided to maintain database integrity?

- A. Concurrent transaction processing B. Log
C. Locking protocol D. Commit points

44. Which of the following data mining techniques would be applied when trying to identify common properties between different groups of shoppers?



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碩士班招生考試試題

系所：資管系
科目：計算機概論(2)

- A. Class description
- B. Class discrimination
- C. Cluster analysis
- D. Association analysis

45. Hidden-surface removal is the process of

- A. Discarding those objects that fall outside the view volume
- B. Applying a parallel projection rather than a perspective projection
- C. Identifying parts of surfaces that are in a shadow
- D. Identifying surfaces that are blocked from the camera's view

46. Motion capture is a means of applying

- A. A global lighting model
- B. A local lighting model
- C. Dynamics
- D. Kinematics

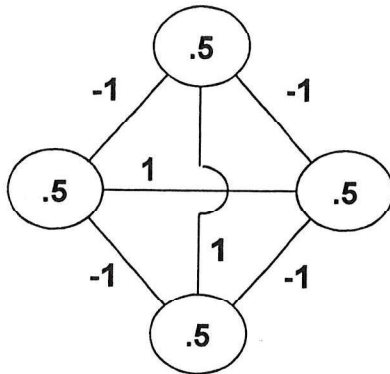
47. In an artificial neural network, which of the following pairs of input connection weights would cause a neuron with two inputs and a threshold value of 3 to produce an output of 1 only when both of its inputs are 1?

- A. 0, 0
- B. 2, 0
- C. 0, 2
- D. 2, 2

48. The assumption that a statement is false unless it can be explicitly derived from the information available is called

- A. Meta-reasoning
- B. The closed-world assumption
- C. The frame problem
- D. The Turing test

49. The diagram below represents an associative memory as described in the text. What stable state will the system reach if it is initiated with the top and bottom neurons excited and the others inhibited?



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

50. The precise time complexity of which of the following problems has not yet been established by researchers?

- A. Sorting a list
B. Searching through a list for a particular entry
C. The traveling salesman problem
D. Listing all possible subcommittees within a given committee