

國立中正大學 112 學年度碩士班招生考試試題

科目名稱：計算機概論

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系所組別：會計與資訊科技學系-乙組

單選題 Multiple Choice (100%, 2% per question)

1. Which of the following do digital signatures provide?

- A) Authentication and availability of data
- B) Confidentiality and integrity of data
- C) Authentication and confidentiality of data
- D) Authentication and integrity of data

2. You are part of a security staff at a highly profitable bank and each day, all traffic on the network is logged for later review. Every Friday when major deposits are made, you're seeing a series of bits placed in the "Urgent Pointer" field of a TCP packet. This is only 16 bits which is not much but it concerns you because:

- A) It is normal traffic because sometimes the previous fields 16-bit checksum value can over run into the urgent point's 16-bit field causing the condition.
- B) It could be a symptom of malfunctioning network card or drivers and the source system should be checked for the problem.
- C) This could be a sign of covert channeling in bank network communications and should be investigated.
- D) It could be a sign of damaged network cable causing the issue.

3. What does PKI use to provide some of the strongest overall control over data confidentiality, reliability, and integrity for Internet transactions?

- A) A combination of digital certificates and two-factor authentication
- B) A combination of the public-key cryptography, digital certificates and two-factor authentication
- C) A combination of public-key cryptography and digital certificates
- D) A combination of public-key cryptography and two-factor authentication

4. An organization plans to receive an automated data feed into its enterprise data warehouse from a third-party service provider. Which of the following would be the BEST way to prevent accepting bad data?

- A) Appoint data quality champions across the organization.
- B) Purchase data cleansing tools from a reputable vendor.
- C) Obtain error codes indicating failed data feeds.
- D) Implement business rules to reject invalid data.

5. Which of the following types of firewalls provide the GREATEST degree of control against hacker intrusion?

- A) Application level gateway
- B) Packet filtering router
- C) Screening router
- D) Circuit gateway

6. The Magic network has a Class C IP network and has been divided into 5 separate departments located at

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different places. Which subnet mask will match up your design?

- A) 255.255.255.0 B) 255.255.255.192
- C) 255.255.255.224 D) 255.255.255.240

7. Which one of following is a reply message by a successful ping command?

- A) Time reply B) Echo reply
- C) Message reply D) Time out reply

8. Which command will you use to test connection at the network layer?

- A) SQL B) NFS
- C) Telnet D) Ping

9. You have an IP address 20.30.220.40 and subnet mask 255.255.240.0. what's the ranges of hosts address in the subnet

- A) 20.30.220.1~20.30.220.254
- B) 20.30.220.10~20.30.220.255
- C) 20.30.208.1~20.30.223.254
- D) 20.30.0.0~20.30.255.255

10. Which of following statements is true about audio over IP?

- A) The audio over IP requires low delay and high bandwidth.
- B) The audio over IP requires low bandwidth and high packet loss rate .
- C) The audio over IP requires low packet loss rate and high delay.
- D) The audio over IP requires low delay and high packet loss rate.

11. What is a function of a bridge?

- A) Increase broadcast domains B) Increase collisions domains
- C) Decrease the number of broadcast domains D) Decrease the size of collisions domains

12. Which one of following is the best description of a router?

- A) Has a single broadcast domain and a single collision domain
- B) Has a single broadcast domain and a separating collision domain
- C) Has a separating broadcast domain and a single collision domain
- D) Has a separating broadcast domain and a separating collision domain

13. What is the right sequence in decapsulation data?

- A) bits, Frames, Data grams, Segments, Data

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- B) bits, Data grams, Segments, Frames, Data
- C) Data, Segments, Data grams, Frames, bits
- D) Data, Data grams, Segments, Frames, bits

14. Which one of following is used as transmitting and receiving system in data link layer?

- A) Bits B) Ethernet frames
- C) TCP packets D) IP packets

15. In the transport layer, which one of the following is used with connection-oriented transmission?

- A) Physical Circuit B) Virtual Circuit
- C) Assigned IP address D) connectionless

16. Which OSI layer is associated with the acknowledgement of transmission, sequencing, and flow control across a network?

- A) Layer 7 B) Layer 6
- C) Layer 5 D) Layer 4

17. Which method is used to allow a fixed number of data sending before an acknowledge?

- A) Caching B) Buffering
- C) Source-quench messages D) Windowing

18. What will data encapsulation take place at the network layer?

- A) Convert to bits
- B) Add the segment data
- C) Add the network address
- D) Add the local address

19. Which type of cable will you use to connect switch to a router?

- A) straight through B) rollover
- C) Crossover D) RG58

20. Which layer will control end to end communication?

- A) Application layer B) Presentation layer
- C) Session layer D) Transport layer

21. What is a hash table?

- A) A structure that maps values to keys

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- B) A structure that maps keys to values
- C) A structure used for storage
- D) A structure used to implement stack and queue

22. What is the value of the postfix expression 6 3 2 4 + - *?

- A) 1 B) 40
- C) 74 D) -18

23. Here is an infix expression: $4 + 3 * (6 * 3 - 12)$. Suppose that we are using the usual stack algorithm to convert the expression from infix to postfix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression?

- A) 1 B) 2
- C) 3 D) 4

24. What is the number of moves required to solve Tower of Hanoi problem for k disks?

- A) $2k - 1$ B) $2k + 1$
- C) $2k + 1$ D) $2k - 1$

25. If the tree is not a complete binary tree then what changes can be made for easy access of children of a node in the array?

- A) every node stores data saying which of its children exist in the array
- B) no need of any changes continue with $2w$ and $2w+1$, if node is at i
- C) keep a separate table telling children of a node
- D) use another array parallel to the array with tree

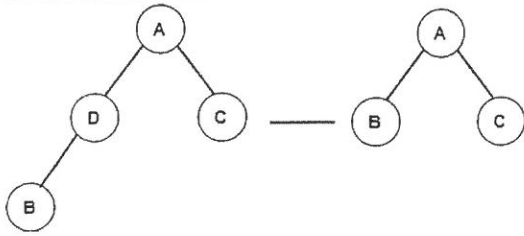
26. The data structure required for Breadth First Traversal on a graph is?

- A) Stack B) Array
- C) Queue D) Tree

27. A queue follows _____

- A) FIFO (First In First Out) principle
- B) LIFO (Last In First Out) principle
- C) Ordered array
- D) Linear tree

28. What operation does the following diagram depict?



- A) inserting a leaf node
- B) inserting an internal node
- C) deleting a node with 0 or 1 child
- D) deleting a node with 2 children

29. The average depth of a binary tree is given as?

- A) $O(N)$
- B) $O(\sqrt{N})$
- C) $O(N^2)$
- D) $O(\log N)$

30. Which of the following properties are obeyed by all three tree – traversals?

- A) Left subtrees are visited before right subtrees
- B) Right subtrees are visited before left subtrees
- C) Root node is visited before left subtree
- D) Root node is visited before right subtree

31. What is an operating system?

- A) interface between the hardware and application programs
- B) collection of programs that manages hardware resources
- C) system service provider to the application programs
- D) all of the mentioned

32. CPU scheduling is the basis of _____

- A) multiprogramming operating systems
- B) larger memory sized systems
- C) multiprocessor systems
- D) none of the mentioned

33. Which one of the following is not true?

- A) kernel remains in the memory during the entire computer session
- B) kernel is made of various modules which can not be loaded in running operating system
- C) kernel is the first part of the operating system to load into memory during booting
- D) kernel is the program that constitutes the central core of the operating system

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34. In a timeshare operating system, when the time slot assigned to a process is completed, the process switches from the current state to?

- A) Suspended state B) Terminated state
- C) Ready state D) Blocked state

35. Cascading termination refers to the termination of all child processes if the parent process terminates _____

- A) Normally or abnormally B) Abnormally
- C) Normally D) None of the mentioned

36. The portion of the process scheduler in an operating system that dispatches processes is concerned with _____

- A) assigning ready processes to waiting queue
- B) assigning running processes to blocked queue
- C) assigning ready processes to CPU
- D) all of the mentioned

37. A deadlock avoidance algorithm dynamically examines the _____ to ensure that a circular wait condition can never exist.

- A) operating system
- B) resources
- C) system storage state
- D) resource allocation state

38. The operating system and the other processes are protected from being modified by an already running process because _____

- A) every address generated by the CPU is being checked against the relocation and limit registers
- B) they have a protection algorithm
- C) they are in different memory spaces
- D) they are in different logical addresses

39. To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called. For implementing dynamic loading _____

- A) special support from operating system is essential
- B) special support from hardware is required
- C) user programs can implement dynamic loading without any special support from hardware or operating system

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- D) special support from both hardware and operating system is essential
40. The two steps the operating system takes to use a disk to hold its files are _____ and _____
- A) caching & logical formatting
 - B) logical formatting & swap space creation
 - C) swap space creation & caching
 - D) partitioning & logical formatting
41. Which of the following is the fullform of CISC?
- A) Complex Instruction Sequential Compilation
 - B) Complete Instruction Sequential Compilation
 - C) Computer Integrated Sequential Compiler
 - D) Complex Instruction Set Computer
42. The DBMS acts as an interface between _____ and _____ of an enterprise-class system.
- A) Data and the DBMS
 - B) Application and SQL
 - C) Database application and the database
 - D) The user and the software
43. Which of the following is popular for applications such as storage of log files in a database management system since it offers the best write performance?
- A) RAID level 0
 - B) RAID level 1
 - C) RAID level 2
 - D) RAID level 3
44. The logical design, and the snapshot of the data at a given instant in time is known as?
- A) Instance & Relation
 - B) Relation & Schema
 - C) Domain & Schema
 - D) Schema & Instance
45. The top level of the hierarchy consists of _____ each of which can contain _____.
- A) Schemas, Catalogs
 - B) Schemas, Environment
 - C) Environment, Schemas
 - D) Catalogs, Schemas

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46. The ability to query data, as well as insert, delete, and alter tuples, is offered by _____
- A) TCL (Transaction Control Language)
 - B) DML (Data Manipulation Language)
 - C) DDL (Data Definition Language)
 - D) DCL (Data Control Language)
47. CASE stands for
- A) Computer-Aided Software Engineering
 - B) Control Aided Science and Engineering
 - C) Cost Aided System Experiments
 - D) None of the mentioned
48. What is a Functional Requirement?
- A) specifies the tasks the program must complete
 - B) specifies the tasks the program should not complete
 - C) specifies the tasks the program must not work
 - D) All of the mentioned
49. _____ is the definition of objects in the database that leads directly to a standard approach for the creation of software documentation.
- A) Data/data integration
 - B) Information sharing
 - C) Document standardization
 - D) Data integrity
50. Which of the following is not a project factor that should be considered when planning the structure of software developing teams?
- A) The rigidity of the delivery date
 - B) The degree of sociability required for the project
 - C) High frustration caused by personal, business, or technological factors that causes friction among team members
 - D) The difficulty of the problem to be solved