＊下列題目請在試卷內的「選擇題作答區」作答。

● 選擇題（單選）50 題，每題 2 分，共 100 分。答錯不倒扣。**請在答案卷之【選擇題作答區】內依序作答，否則不予以計分。**

1. [____] Which of the following software allows companies to provide a personalized touch and customized services to its customers? (A) customer relationship management (B) consumer database management (C) consumer feedback service (D) consumer statistics software (E) none of the above.

2. [____] The fundamental theory behind caching is (A) a file that is not used often is likely to be used again (B) a file that has recently been used is likely to be used again (C) a file that has not been used for a long time is likely to be used again (D) a file that has not been used for a long time is likely not to be used again (E) a file that has recently been used is likely not to be used soon.

3. [____] Which of the following is correct about domain name? (A) the top-level domain 'md' is created for medical information and centers (B) the top-level domain 'tv' is created for broadcast stations (C) the top-level domain for commercial organizations is 'org' (D) 'biz' is a new top-level domain created for small business and individuals (E) none of the above.

4. [____] Which of the following is wrong about emails? (A) emails can deliver voice data (B) emails can deliver execution files (C) POP3 is a protocol for emails servers to deliver incoming emails to their clients (D) current email systems use SMTP to deliver emails in the Internet (E) all of the above are correct (choose this one only if none of the above can be chosen).

5. [____] Which of the following is a site that allows millions of volunteer peers to help processing radio telescope signals to search for extraterrestrial life? (A) www.nasa.org (B) UFO@home (C) www.ET.org (D) SETI@home (E) Folding@home.

6. [____] A software that enables professional designers in publishing business to create sophisticated documents that contain text, graphics, and many colors is (A) Multimedia authoring tools (B) CAD (C) CBT (D) WBT (E) DTP

7. [____] Most web sites often have which place to help users find answers to common questions (A) distant learning (B) wizard (C) FAQ (D) Online help (E) Newsgroup

8. [____] Taiwan's PC industry has taken a majority share of the world market in most PC components except (A) motherboard (B) hard drivers (C) power supplies (D) keyboards and mouse (E) network cards

9. [____] Which of the following is wrong? (A) current CPUs have clock speed around 3GHz (B) current hard disks have capacity around 120GB (C) current memory installed in home PCs is around 256-512MB (D) current flash memory has size around 256-512MB (E) all of the above are correct (choose this one only if none of the above can be chosen).

10. [____] An opening inside a computer system in which you can install additional equipment is called (A) draw (B) slot (C) socket (D) bay (E) none of the above.

11. [____] A smart phone typically has the following capabilities except (A) Web-enabled (B) send and receive emails (C) built-in camera (D) play music (E) all of the above functions are included (choose this one only if none of the above can be chosen).

12. [____] Which of the following device in digital camera senses analog image signals and then converts them to digital ? (A) DSP (B) zoom (C) DAD (D) CCD (E) DA

13. [____] The process of scrambling messages so that the original messages cannot be revealed unless some given key is used is called (A) decryption (B) encryption (C) coding (D) compression (E) decoding.

14. [____] The storage term that refers to 2^{40} bytes is (A) Gigabyte (B) Terabyte (C) Petabyte (D) Exabyte (E) none of the above.

15. [____] The smallest data block on the surface of a hard disk or floppy disk that is accessed as a

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unit per request is (A) sector (B) track (C) cylinder (D) packet (E) cluster.

16. [_____] Which of the following can most effectively improve disk access time (A) add more plates (B) enlarge disk surface (C) add disk cache (D) enlarge sector size (E) increase number of sectors per track.

17. [_____] A feature that allows an operating system to interrupt an executing program and pass control to another is (A) preemptive multitasking (B) priority multitasking (C) pipeline multitasking (D) fault-tolerant multitasking (E) none of the above.

18. [_____] The largest program that can be executed in current Intel Pentium 4-based PCs is (A) 1GB (B) 4 GB (C) 32 GB (D) 64 GB (E) none of the above.

19. [_____] The technique that allows a computer with small RAM to execute a program of much bigger size is (A) paging (B) multi-disk (C) spooling (D) virtual memory (E) none of the above..

20. [_____] Which of the following is wrong about the paging technique in operating systems? (A) a large page may result in waste of memory and storage (B) a small page may result in waste of CPU time in page swap (C) executing too many programs simultaneously may result in thrashing (D) the area of the hard disk used for virtual memory is called a swap file (E) all of the above are correct (choose this one only if none of the above applies).

21. [_____] Which of the following is wrong? (A) fragmentation is caused by many write and delete operations to a disk (B) read operations alone cannot cause fragmentation (C) de-fragmentation tries to organize file blocks in contiguous sectors (D) fragmentation is not possible if all files have the same size (E) all of the above are correct (choose this one only if none of the above applies).

22. [_____] GPRS is a technology used in (A) 1G (B) 2G (C) 3G (D) 4G (E) none of the above.

23. [_____] Which of the following is wrong? (A) Ethernet uses bus topology (B) Ring topology is used primarily for LANs (C) in Bus network, the failure of one device will affect the function of the entire network (D) when network traffic is very high, the performance of Ethernet networks drops significantly as compared to ring networks (E) none of the above.

24. [_____] Which of the following databases store data in a table that consists of rows and columns? (A) relational (B) object-oriented (C) multidimensional (D) network (E) none of the above.

25. [_____] A specific pattern of virus code that can be used to detect the virus is called (A) virus form (B) virus signature (C) virus ID (D) virus sign (E) none of the above.

26. [_____] Web sites can use cookies in the following ways except (A) track user preferences (B) automatically login a user into a Web site when the user visits the site (C) keep track of a user's shopping cart (D) track how regularly users visit a site and the Web pages they visit while at the site (E) all the above can be done by cookies.

27. [_____] A program placed on a computer without the user's knowledge that secretly collects information about the user is (A) adware (B) spyware (C) virus (D) worm (E) cookies.

28. [_____] Which of the following system conversions first installs the new system in only one location in the company, tests it, and when the test is approved, it is then deployed to the other sites of the company? (A) direct (B) parallel (C) phased (D) pilot (E) site transitional.

29. [_____] A computer that a hacker uses to execute a denial of service attack or distributed denial of service attack without the legitimate user's knowledge is (A) Zombie (B) Trojan (C) Boogie (D) worm (E) Sobig.

30. [_____] Huge database system that stores and manages data required to analyze historical and current transactions is (A) data mart (B) data house (C) data warehouse (D) data mining (E) none of the above.

31. _____ The family of communication standards for wireless LANs is (A) 802.11 (B) TCP/IP (C) Bluetooth (D) GSM (E) WAP.

32. _____ Which of the following is wrong? (A) RFID is considered as an alternative to bar code (B) RFID can be used to track the number of customers in a shopping mall (C) RFID can be used to track payment as vehicles pass through booths on tollway systems (D) RFID can be used in POS system (E) all of the above are correct (choose this one only if none of the above applies)

33. _____ Which of the following is wrong about TCP? (A) it is connection-oriented (B) it stands for Transmission Control Protocol (C) it has flow control (D) HTTP, FTP, and Telnet are all based on TCP (E) all of the above are correct (choose this one only if none of the above applies)

34. _____ Which of the following is wrong? (A) IP v4 uses 32-bit address mode (B) IP v6 uses 128-bit address space (C) currently the number of hosts that need to be addressed in the Internet has already exceeded 2^{32} (D) a class C subnet in IP v4 contains 256 hosts (E) all of the above are correct (choose this one only if none of the above applies)

35. _____ Which of the following is wrong? (A) NAT (Network Address Translation) allows multiple hosts to share an external IP simultaneously (B) DHCP allows multiple devices to share multiple IPs dynamically (C) NAT provides a type of firewall (D) DHCP also provides a type of firewall (E) all of the above are correct (choose this one only if none of the above applies)

36. _____ A technology that enables one network to send its data via another network's connections, typically by encapsulating a network protocol within packets carried by the second network is (A) tunneling (B) VPN (C) IP in IP (D) Payload carrier (E) Layer Two Forwarding.

37. _____ Which of the following is not defined in the Internet Protocol Suite? (A) application layer (B) session layer (C) network layer (D) transport layer (E) link layer.

38. _____ Standard Ethernet networks use _____ to physically monitor the traffic on the line at participating stations in transmission. (A) CSMA (B) CSMA/CA (C) CSMA/CD (D) CDMA (E) CSCA/MA.

39. _____ Which of the following property says that all operations of a transaction be completed or else the transaction should be aborted (A) isolation (B) atomicity (C) durability (D) serializability (E) singleton.

40. _____ The objective of _____ is to ensure the serializability of transactions in a multi-user database environment (A) concurrency control (B) atomicity control (C) integrity control (D) sequential control (E) parallel control.

41. _____ Which of the following normal forms requires that every nonprime attribute A in a relation R is fully dependent on the primary key of R? (A) first (B) second (C) third (D) fourth (E) BCNF.

42. _____ Deadlock in database object locking scheme can be prevented by (A) not allowing a transaction to lock an object once it has released some lock (B) a transaction cannot release locks until it has completed (C) allowing read locks to be shared among transactions (D) allowing objects to be locked only in some predefined order (E) none of the above.

43. _____ In object-oriented design, _____ hides the data representation and the method's implementation from other objects and the user (A) encapsulation (B) abstraction (C) inheritance (D) data hiding (E) data wrapping.

44. _____ Two-Phase locking guarantees (A) deadlock free (B) data integrity (C) durability (D) serializability (E) none of the above.

45. _____ Which of the following techniques employs two or more hard disk drives in combination for fault tolerance and performance? (A) EMC (B) RAID (C) RIDA (D) disk striping (E) none of the above.

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46. ☐ Which of the following databases is more appropriate for multimedia objects? (A) relational database (B) object-oriented database (C) hierarchical database (D) network database (E) none of the above.

47. ☐ Which of the following three languages are object-oriented: C, C++, Java? (A) all of them (B) only C++ (C) only C and C++ (D) only C++ and Java (E) none of the above is correct.

48. ☐ Which of the following allows Web documents designers to create their own customized tags, enabling the definition, transmission, validation, and interpretation of data between applications and between organizations? (A) HTML (B) SGML (C) XML (D) JXTA (E) UML.

49. ☐ The frequency Bluetooth uses is (A) 900MHz (B) 1800 MHz (C) 2.4 GHz (D) 4.8GHz (E) 5.4GHz.

50. ☐ Sorting an array of N elements typically requires time at least in the order of (A) log N (B) N (C) N log N (D) N^2 (E) N log log N.