(一) 選擇題：每一題二分，答錯不倒扣。第一大題限答在第一頁上，先畫一個
表格，每五題為一列。請標明題號，未依題號依序作答者，一律不予計分。

1. The Accelerated Graphics Port (AGP) is ____.
   a. the most common and slowest expansion bus
   b. a bus designed to improve the speed with which 3-D graphics and video transmit
   c. a high-speed expansion bus that connects higher speed devices such as hard disks
   d. a bus that eliminates the need to install cards into expansion slots

2. A vertical market ASP ____.
   a. offers a variety of software applications to a specific geographic area
   b. supplies prepackaged, standard entertainment applications
   c. provides applications for a particular industry
   d. customizes and delivers high-end business applications

3. Instant messenger software allows ____.
   a. real-time exchange of messages or files with another online user
   b. geographically separated people to transfer audio and video
   c. transmission of messages and files via a network such as the Internet
   d. users to access and view Web pages on the Internet

4. A macro is a ____.
   a. document that contains the formatting necessary for a specific document type
   b. sequence of keystrokes and instructions that a user records and saves
   c. small image on the screen that represents a program or document
   d. collection of drawings, diagrams, and photographs that can be inserted into a document

5. The COM port (short for communications port) on the system unit is one type of ____.
   a. USB port   c. serial port
   b. parallel port   d. SCSI port

6. A nanosecond (abbreviated ns) is one ____ of a second.
   a. billionth   c. thousandth
   b. millionth   d. trillionth

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7. Retail and grocery stores use the _____ bar code.
   a. UPC (Universal Product Code)
   b. Interleaved 2 of 5
   c. Codabar
   d. POSTNET (Postal Numeric Coding Technique)

8. A _____ has pins on opposite sides of the circuit board that connect together to form one set of contacts.
   a. DIMM (dual inline memory module)
   b. SIMM (single inline memory module)
   c. RIMM (Rambus® inline memory module)
   d. CIMM (Cantus® inline memory module)

9. _____ automatically appear on the screen when a certain action is performed.
   a. Tracking changes   c. File names
   b. Mail merges   d. Smart tags

10. A(n) _____ is a communications line between a device and the processor.
    a. disk operating system line (DOS)   c. interrupt request line (IRQ)
    b. preemptive multitasking line (PMT)   d. fault-tolerant computer line (FTC)

11. Transfer rates for disks are stated in _____.
    a. KBps (kilobytes per second) and MBps (megabytes per second)
    b. MBps (megabytes per second) and GBps (gigabytes per second)
    c. GBps (gigabytes per second) and TBps (terabytes per second)
    d. TBps (terabytes per second) and PBps (petabytes per second)

12. Networks, midrange servers, mainframes, and supercomputers allow hundreds to thousands of people to connect at the same time, and thus are _____.
    a. single user   c. multiuser
    b. single processing   d. multiprocessing

13. The drive designation of a CD or DVD drive usually ____.
   a. precedes alphabetically before that of all the hard disks and portable disks
   b. comes alphabetically between that of the hard disks and portable disks
   c. follows alphabetically after that of all the hard disks and portable disks
   d. comes alphabetically between that of the portable disks and hard disks

14. Some users input music and other sound effects using external ____ devices such as an electronic piano keyboard.
   a. MICR
   b. POS
   c. MIDI
   d. DSP

15. ____ is the process of encoding data and information into an unreadable form.
   a. Encryption
   b. Formatting
   c. Transmission
   d. Spooling

16. A ____ is the smallest element in an electronic image.
   a. byte
   b. pixel
   c. character
   d. point

17. ____ is used primarily on mainframe computers and high-end servers.
   a. American Standard Code for Information Interchange (ASCII)
   b. Unicode
   c. Extended Binary Coded Decimal Interchange Code (EBCDIC)
   d. Multicode

18. Most PDAs today include, among other features, ____ functionality.
   a. DTP
   b. PIM
   c. CAD
   d. WBT

19. Popular embedded operating systems include all of the following *except* ____.
   a. Windows CE .NET
   b. Palm OS and Symbian OS
   c. NetWare and Linux
   d. Pocket PC 2002

20. Originally called an erasable CD (CD-E), a ____ overcomes the major disadvantage of CD-R disks, which is being able to write on them only once.
    a. CD-ROM
    b. DVD-ROM
    c. CD-RW
    d. DVD-R

21. In a grocery store, a(n)____ is a combination of an electronic cash register, bar code reader, and printer.
    a. automated teller machine (ATM)
    b. flatbed scanner
    c. point of sale (POS) terminal
    d. smart display

22. With ____, which is designed for smart phones, users input data by pressing keys on the keypad or keyboard, touching the screen, writing on the screen with a small stylus, or speaking into the smart phone.
    a. Palm OS
    b. Symbian OS
    c. Pocket PC 2002
    d. Windows CE .NET

23. A ____ is a window on the screen that displays notes and drawings simultaneously on the screens of all participants in a video conference.
    a. blackboard
    b. whiteboard
    c. chalkboard
    d. baseboard

24. One gigahertz (GHz) equals one ____ ticks of the system clock per second.
    a. thousand
    b. million
    c. billion
    d. trillion

25. A template is a ____.
    a. small image on the screen that represents a program or document
    b. sequence of keystrokes and instructions that a user records and saves
    c. document that contains the formatting necessary for a specific document type
    d. collection of drawings, diagrams, and photographs that can be inserted into a document

26. How many bytes are used in an IPv6 address, ____.

a. 4 c. 8

b. 12 d. 16

27. When a mobile user connects to a main office using a standard Internet connection, a ____ provides the mobile user with a secure connection to the company network server.

a. value added network (VAN) c. virtual private network (VPN)

b. local area network (LAN) d. wide area network (WAN)

28. A DBMS uses the ____ to perform validation checks.

a. data server c. data warehouse

b. data mart d. data dictionary

29. In a relational database, each row ____.

a. and each column has a primary key

b. has a unique name and each column has a primary key

c. has a primary key and each column has a unique name

d. and each column has a unique name

30. The simplest RAID design is level 1, called ____, which writes data on two disks at the same time to duplicate the data.

a. farming c. empowering

b. mirroring d. striping

（二）簡答題

31. Please explain the booting process of a Personal Computer. (Hint: when the power on, how a PC can be activated to be ready for a user?) (8%)

32. Please list four popular **last mile** technologies at Taiwan and compare them (10%)

33. Please give a SQL description to find the detail of students whose age are over 20 by searching the "student" table. The schema of the student table is student(ID, name, age, address). (5%)

34. Please transfer the decimal value of 170 into hexadecimal and binary form, and list the calculation process (6%)

35. Please use pseudo code to describe how you transfer a decimal into binary form. (6%)

36. What's the difference between the interpreter and the compiler language (5%)