Multiple Choice Questions (單選題): (60%)

1. Data mining is:
   A. batch processing using files stored on a mainframe computer.
   B. locating trends and patterns in information kept in large databases.
   C. querying databases used by the mining industry.
   D. creating a database warehouse from many smaller databases.
   E. all of the above.

2. In a database, list the following terms in the order of size, from the smallest to the largest.
   A. table, character, record, field
   B. character, record, field, table
   C. record, field, character, table
   D. character, field, record, table
   E. none of the above

3. The primary difference between a LAN and a WAN is the:
   A. number of software programs available.
   B. variety of hardware devices.
   C. geographical area.
   D. number of hardware devices.
   E. all of the above.

4. How is a magnetic disk drive read?
   A. Randomly
   B. Through a laser beam
   C. Sequentially
   D. In clustering blocks
   E. In sequential blocks

5. Advantages of databases include all of the following EXCEPT:
   A. easy to reorganize data.
   B. easy to retrieve information.
   C. easy to store large amounts of data.
   D. easy to make queries for data.
   E. easy to secure because information from the database cannot be printed

6. The hardware device commonly referred to as the "brain" of the computer is the:
   A. RAM chip.
   B. data input.
   C. CPU.
   D. CMOS.
   E. secondary storage.

7. Bringing data from a word processing program into a database program is known as:
   A. importing.
   B. exporting.
   C. batch processing.
   D. mining.
   E. none of the above.

8. If you want to create a new encoding system which contains only number digits (0~9) and both uppercase and lowercase English alphabets (a~z & A~Z), how many bits does your system need to store a stroke of data?
   A. 4 bits
   B. 6 bits
   C. 8 bits
   D. 10 bits
   E. None of the above.

9. By putting multiple CPUs on a single chip, chip makers have created:
   A. parallel processors.
   B. multi-core processors.
   C. CPU duplicate processors.
   D. multi-tasking processors.
   E. clusters.

10. An advantage that impact printers have over

nonimpact printers is that impact printers:

A. are quieter than nonimpact printers.

B. can print multipart forms.

C. are much less expensive.

D. are smaller than nonimpact printers.

E. none of the above.

11. Software designed to be used by several people simultaneously is known as:

A. shareware.

B. cluster software.

C. groupware.

D. collaborative software

E. group taskware.

12. Which software is free to use for a trial period, but requires some minimal payment after the trial period?

A. Freeware.

B. Open source software.

C. Graphics program.

D. Public trialware

E. Shareware.

13. What is a computer that provides software and other resources to computers over a network?

A. Personal computer

B. Server

C. Workstation

D. Mainframe

E. Supercomputer

14. What is the technological advancement that made it possible for computers to become as small as they are today?

A. Repeater.

B. Vacuum tube.

C. Transistor.

D. Silicon chip.

E. Superconductor

15. If a user needs information instantly available to the CPU, it should be stored:

A. in the CPU.

B. in RAM.

C. in secondary storage.

D. in CMOS.

E. on a CD.

16. =((C10+C11)/12)+D18 in Excel is an example of a:

A. function.

B. cell address.

C. calculation.

D. formula.

E. value.

17. The program that allows I/O devices to communicate with the computer is known as a(n):

A. software device file.

B. utility program.

C. operating device file.

D. communication system

E. device driver.

18. When a program assigns 8 bits to a pixel, that pixel can display one of up to _____ different shades of gray.

A. 8

B. 64

C. 256

D. 1,024

E. None of above

19. Operating systems and utility programs are in a class of software known as:

A. application software.

B. operation software

C. system software.

D. software suites.

E. BIOS software.

20. All of the following are true of a wireless network EXCEPT:

A. computers at the nodes can run different operating systems.

B. generally faster than wired LAN.

C. less trouble to install.

D. convenient for users that work in many locations.

E. easier to be compromised by hackers.

Short Essay Questions (問答題): (40%)

說明：若需計算卻沒有計算過程則不予給分。

1. Describe the lifecycle of information system development.

2. List the types of networks based on network topology.

3. Define and give examples for primary key and foreign key in a relational database.

4. Describe the relationships among business application software, database management system and database.

5. You are asked to take a 8-gigabyte USB flash drive to store all the pictures taken by your digital camera. Suppose every photo takes 500 kilobytes of storage space in average, how many photos can be stored in your USB device?

6. Distinguish the key ideas of cloud computing and client/server architecture.

7. Explain the concept of CRISP-DM (Cross Industry Standard Process for Data Mining).

8. Name three operating systems for smart phones and mobile devices.