I. 選擇題(每題 3 分，共 60 分)

1. In order for transactions to be processed as they occur, the processing must be
   a. online and zone
   b. real-time and batch
   c. batch and online
   d. online and real-time

2. A sophisticate RAID technique is
   a. data hashing
   b. data mirroring
   c. data striping
   d. data sectoring

3. When accessing a record on disk, the action that comes first is
   a. rotational delay
   b. data transfer
   c. head switching
   d. seek time

4. A set of programs that permits the computer to control and manage its own resources is called a(n)
   a. controller
   b. operating system
   c. manager
   d. environment

5. The process of loading the operating system into memory is called
   a. booting
   b. pulling
   c. interfacing
   d. startup

6. A set of parallel data paths to transport data internally in the computer system is called a
   a. transistor
   b. cache
   c. bus line
7. Data and instructions are brought into memory from an input device by
a. the ALU
b. ROM burners
c. the control unit
d. flash memory

8. The network topology that uses a hub computer to manage the network is
a. star
b. ring
c. peer-to-peer
d. bus

9. The card inserted in a slot in a personal computer to allow it to send and receive messages from the LAN is the
a. CSMA/CD
b. NIC
c. TCP/IP
d. EDI

10. A device that can convert a digital signal to an analog signal, or an analog signal to a digital is called
a. digitizer
b. demodulator
c. modem
d. token ring

11. The technology that uses light to send data is called
a. twisted pairs
b. fiber optics
c. microwave
d. satellite

12. The network protocol that accesses the network by “listening” to see if the network is free is
a. Ethernet
b. EDI
c. Bridge
d. EFT

13. Two similar networks can exchange messages by using a(n):
   a. gateway
   b. EDI
c. Bridge
d. EFT
14. Using Ethernet, if two computers on LAN attempt to send messages at the exact same time, this is called a
a. token
b. node
c. collision
d. ring

15. The small programs that can provide animation on the web are called
a. browsers
b. engines
c. hyperregions
d. applets

16. The system referred to as the World wide web was developed by
a. Marc Andreessen.
b. Tim Berners-Lee.
c. ARPA.
d. the Rand Corporation

17. The operators AND, OR, and NOT are used in
a. HTTP
b. FTP
c. Boolean logic.
d. URLs.

18. The communications link with the greatest bandwidth is
a. DSL.
b. cable
c. ISDN
d. modem

19. In a business environment, push software gathers information from various Internet sites and sends it directly to
a. the company’s home page.
b. each company employee’s personal computer
c. the company’s sewer
d. the company’s backbone

20. Another name for push technology is
a. multicasting
b. unicasting
c. webcasting
d. broadcasting
II. 演算題(每題 10 分，共 40 分)

21. Write an iterative C program to search a sorted list.

22. Write a recursive C program to search a sorted list.

23. Use Boolean algebra to simplify Boolean function
   \[ F = A' + B + C' + AB'C \]

24. Use the map method to simplify Boolean function
   \[ F(w, x, y, z) = \Sigma (0, 1, 2, 5, 7, 8, 9, 10, 13, 15) \]

〈試題完〉