以下第一題至第十題為選擇題，每題只有一個正確答案。答錯每題倒扣 0.5 分

1. Computers process ___________. (2%)
   a. data into information
   b. information into data
   c. data into instructions
   d. instructions into data

2. Each of the following is a commonly used output device except _______. (2%)
   a. a printer
   b. a monitor
   c. a scanner
   d. speakers

3. Power users typically work with ___________, combining text, graphics, audio,
   and video into one application. (2%)
   a. multimedia
   b. multilateral
   c. multidimensional
   d. multitask

4. People around the world use the Internet to ___________. (2%)
   a. communicate with and meet other people
   b. shop for goods and services
   c. access sources of information and leisure
   d. all of the above

5. The term ___________ refers to online or Internet-based illegal acts. (2%)
   a. malicious-logic program
   b. computer crime
   c. cybercrime
   d. system failure

6. Some viruses are hidden in ___________, which are instructions saved in an
   application such as a word processing or spreadsheet program. (2%)
   a. macros
   b. logs
   c. cookies
   d. spikes
7. When users purchase software, a single-user license agreement permits users to
do any of the following except ______.(2%)  
a. install the software on only one computer  
b. rent or lease the software  
c. make one copy of the software as backup  
d. give or sell the software to another individual if the software is removed
from the user's computer first

8. ________ provides a way to store data in an organized fashion. (2%)  
a. A Web browser  
b. Word processing software  
c. Database software  
d. Spreadsheet software

9. With ________ software, a mobile user can create and deliver a presentation
to a large audience by connecting a mobile computer or device to a video
projector that displays the presentation on a full screen. (2%)  
a. presentation graphics  
b. spreadsheet  
c. word processing  
d. database

10. Each time a user starts a computer, the operating system ________ (copies)
from the computer's hard disk into memory. (2%)  
a. prints  
b. scrolls  
c. loads  
d. saves

11. (C7)_16 之 15 的補數為何？(3%)  

12. 寫出下列後置表示法(postfix notation)運算式之中置表示法(infix notation)與
前置表示法(prefix notation)：(※數值均為一位數) (4%)
   \[ 8 \ 7 \ 2 \ 9 \ 5 - ^ \ast + 6 \ 3 \ 4 \ast - \]
13. **Decimal Floating-Point Numbers**
   
   Decimal floating-point numbers are stored with a unit, which is divided into three parts: the sign bit (Sign bit), the exponent (Exponent), and the mantissa (Mantissa).
   
   - **Sign bit**: 0, 1 for positive and negative numbers.
   - **Exponent**: 8 bits, used for the decimal point, e.g., 128 for positive numbers, -128 for negative numbers.
   - **Mantissa**: 23 bits, represents the decimal part.

   For decimal floating-point, we keep the first 8 bits as the integer part, followed by the next 16 bits as the fractional part. The decimal point is located in the middle of these two parts. For example, 0100 0011 1110 1011 0101 0000 0000 0000 represents 0.123456789 + 1.23456789... (6%)

14. **Describe and Compare Three Kinds of Computer Memory Management Methods.**

   (9%)

15. **Write a Computer Program, in Any Programming Language, Which Can**
   
   a. Read in a data file of 1000 items from a secondary storage. (2%)
   
   b. Have these items be sorted in decreasing order. (10%)
   
   c. Store the sorted data into the secondary storage. (2%)
   
   d. Describe and analyze your approach. (10%)

16. **What is the Video Resolution and Printer Resolution and Give Example for There Common Setting?** (5%)

17. **What is the Pipelining Technology and How Does it Work?** (5%)

18. **A HD has 4 discs, 2 sides/disc, 79,656 tracks/side, 63 sectors/track, and stores 512 bytes/sector, what is the capacity of this HD?** (5%)

19. **What is the Global Positioning System (GPS) and How Does It Work?** (5%)

20. **Describe and Illustrate the Network Topologies** (5%)

21. **What is a Network Transmission Protocol and Draw a Diagram to Illustrate the Relationship Among Each Layer?** (9%)