



## 一、配合題：(14 題，每題 1 分，共 14 分)

Identify the letter of the choice that best matches the phrase or definition.

a. Ethernet	h. catfishing
b. thrashing	i. digital device convergence
c. phishing	j. ripping
d. server virtualization	k. TCP-IP
e. RFID	l. device-independent
f. bot	m. keygen
g. IaaS	n. LTE

1. \_\_\_\_\_ network protocol that defines how messages are routed from one end of a network to the other, ensuring the data arrives correctly
2. \_\_\_\_\_ network standard that specifies no computer or device on the network should control when data can be transmitted
3. \_\_\_\_\_ network standard that defines how high-speed cellular transmissions use broadcast radio to transmit data for mobile communications
4. \_\_\_\_\_ operating system problem that occurs when it spends much of its time paging, instead of executing application software
5. \_\_\_\_\_ operating system that runs on computers and mobile devices provided by a variety of manufacturers
6. \_\_\_\_\_ Program that performs a repetitive task on a network.
7. \_\_\_\_\_ Program that creates software registration numbers and sometimes activation codes.
8. \_\_\_\_\_ The use of software to emulate hardware capabilities, enabling computers to scale, or adjust up or down, storage, processing power, or bandwidth as needed.
9. \_\_\_\_\_ Process of copying audio and/or video data from a purchased disc and saving it on your own media.
10. \_\_\_\_\_ scam in which a perpetrator sends an official looking email message that attempts to obtain personal and/or financial information
11. \_\_\_\_\_ describing the trend of computers and devices with technologies that overlap
12. \_\_\_\_\_ a protocol that defines how a network uses radio signals to communicate with a tag placed in or attached to an object, an animal, or a person.
13. \_\_\_\_\_ online practice of creating a fake profile to form relationships with unsuspecting users
14. \_\_\_\_\_ The use of software to divide a physical server logically into many virtual servers



## 二、選擇題：(18 題，每題 2 分，共 36 分)

1. During which phase of the SDLC is software tested to make sure each function works as intended?
  - a. all phases
  - b. design
  - c. analysis
  - d. implementation
2. Which software development method uses highly skilled programmers to shorten the development process while producing quality software?
  - a. Rapid Application development model
  - b. Predictive development model
  - c. Agile development methodology
  - d. Waterfall model
3. Which of the following translation tools does NOT produce or store object code but translates instructions statement by statement?
  - a. Compilers
  - b. Debuggers
  - c. Interpreters
  - d. Eclipse
4. What defines the behavior of an object in object-oriented programming ?
  - a. Object by itself
  - b. Class
  - c. Method
  - d. Device or platform on which the program runs
5. Which type of software is copyrighted and provided at no cost, though the developer retains all rights to the program?
  - a. public domain software
  - b. freeware
  - c. Software as a Service (SaaS)
  - d. custom software
6. Which of the following is a popular, user friendly CMS often used as a blogging platform?
  - a. WordPress
  - b. Drupal



- c. Google Sites
  - d. Dreamweaver
7. What can a company learn by studying website analytics for its website?
- a. the number of headings and images on the website
  - b. when it needs to increase its bandwidth
  - c. whether a new corporate logo has increased market value
  - d. the amount of sales per customer
8. JavaScript likely controls which of the following elements on a webpage
- a. A navigation bar
  - b. A slide show
  - c. A copyright notice
  - d. A hyperlink to another website
9. A movie animates the credits and the title as 3-D text sinking in the ocean. Which of the following types of software was most likely used to achieve this effect?
- a. image-editing software such as Paint
  - b. animation software such as After Effects
  - c. presentation software such as PowerPoint
  - d. drawing software such as Adobe Illustrator
10. Computer-aided design software helps architects, engineers, and scientists to design, analyze, and manufacture products with the precision of human-level intelligence. Which of the following technologies does CAD incorporate to achieve this?
- a. MIDI technology
  - b. Artificial intelligence and machine learning
  - c. Speech and voice recognition
  - d. Streaming and geotagging
11. What two factors determine the quality of digital audio?
- a. resolution and compression rate
  - b. sampling rate and bit rate
  - c. codec and container type
  - d. Frame rate and volume
12. How can an attacker execute malware through a script?
- a. A script can retrieve and store your personal information, such as your online buying habits.
  - b. A script searches the Internet for personal information about you.



- c. A script can send you a fraudulent email message requesting confidential information.
- d. A script can run a series of instructions to download and run malware.
13. Which of the following forms of identity theft involves posing as a legitimate researcher to ask for personal information?
- phishing
  - cyberstalking
  - pretexting
  - research spoofing
14. Jim wants to develop an app for a specific purpose that would run even when his computer is not connected to the Internet. What type of app should he develop?
- Mobile app
  - Native app
  - Web-based app
  - Cloud-based app
15. Which of the following terms refers to the area of the hard drive used for virtual memory?
- virtual file
  - data file
  - swap file
  - volatile file
16. The bootstrap program executes which of the following?
- startup apps that display the desktop
  - tests that check components such as RAM and storage
  - vital security protections
  - stored user preferences
17. Which of the following is contained on an integrated circuit and can act as an electronic switch that opens or closes the circuit for electrical charges?
- transistor
  - switcher
  - capacitor
  - resistor
18. Which of the following has the fastest transfer rate?
- T3



- b. ATM
- c. Fractional T1
- d. FTTP

## 三、問答題：(5 題，共 50 分)

1. 請說明以下程式碼有何錯誤。(10%)

```

class Main {
    public static void main(String[] args) {
        final int AGE = 32;
        AGE = 45;
        System.out.println("Age: " + AGE);
    }
}
  
```

2. 請計算以下程式的複雜度之值 (cyclomatic complexity, cc)，並說明 test case 與 cc 的關係。

```

public static int getNumDaysInMonth(int month, int year)
    throws MonthOutOfBounds, YearOutOfBounds {
    int numDays;
    if (year < 1) {
        throw new YearOutOfBounds(year);
    }
    if (month == 1 || month == 3 || month == 5 || month == 7 ||
        month == 10 || month == 12) {
        numDays = 31;
    } else if (month == 4 || month == 6 || month == 9 || month == 11) {
        numDays = 30;
    } else if (month == 2) {
        if (isLeapYear(year)) {
            numDays = 29;
        } else {
            numDays = 28;
        }
    } else {
        throw new MonthOutOfBounds(month);
    }
    return numDays;
}
}
  
```

(10%)


 3. 請簡化以下的決策表。 **10%**

	1	2	3	4	5	6	7	8
<b>10% Pay Raise</b>	Y	Y	Y	Y	N	N	N	N
<b>Promotion</b>	Y	Y	N	N	Y	Y	N	N
<b>Own Office</b>	Y	N	Y	N	Y	N	Y	N
<b>Rule Count</b>	1	1	1	1	1	1	1	1
<b>Stay</b>	x	x	x	x	x			
<b>Quit</b>						x	x	x

4. 請說明以下程式執行結果：(10%)

```

public class PostInc {
    public static void main(String[] argv) {
        int i = 0, j;
        j = (i++) * 10;
        System.out.println("i= " + i);
        System.out.println("j= " + j);

        i = 0;
        j = (++i) * 10;
        System.out.println("i= " + i);
        System.out.println("j= " + j);
    }
}
  
```

5. 請說明以下左右程式執行結果有何不同?並說明理由。(10%)

<pre> class Parent {     void show() {  System.out.println("Parent Class");     } }  class Child extends Parent   </pre>	<pre> class Parent {     void show() {  System.out.println("Parent Class");     } }  class Child extends Parent   </pre>
--	--



```
{
    void show() {

System.out.println("Child
Class");
    }

    void show(String str) {

System.out.println(str);
    }
}

public class Polymorphism
{
    public static void
main(String[] argv) {
        Parent p = new
Parent();
        Child c = new Child();
        p.show();
        c.show();

        p = c;
        p.show();
    }
}
```

```
{
    void show(String str) {

System.out.println(str);
    }
}

public class Polymorphism
{
    public static void
main(String[] argv) {
        Parent p = new
Parent();
        Child c = new Child();
        p.show();
        c.show();

        p = c;
        p.show();
    }
}
```