**10820EE231000 C++程式設計HW 4 (Chapter 7)**

**Part 1, Choice(s) 選擇題 (35%)**

1) In an ADT the implementation details are \_\_\_\_\_\_\_\_ the interface through which a program uses it.

A) a part of

B) determined by

C) kept separate from

D) used by

E) None of the above

Answer: C

2) Objects are created from ADTs that encapsulate data and \_\_\_\_\_\_\_\_ together.

A) constants

B) functions

C) memory addresses

D) variables

E) None of the above

Answer: B

3) Objects permit data hiding. This means they can keep functions outside the class from \_\_\_\_\_\_\_\_ the data.

A) accessing

B) changing

C) knowing the names of the variables holding

D) deleting

E) doing all of the above

Answer: E

4) When three different objects of a particular class are created, they are said to be separate \_\_\_\_\_\_\_\_ of the class.

A) members

B) ADTs

C) instances

D) children

E) None of the above

Answer: C

5) In OOP terminology, an object's member variables are often called its \_\_\_\_\_\_\_\_, and its member functions are sometimes referred to as its \_\_\_\_\_\_\_\_.

A) values, operators

B) data, activities

C) attributes, activities

D) attributes, methods

E) values, activities

Answer: D

6) When the body of a member function is defined inside a class declaration, it is called a(an) \_\_\_\_\_\_\_\_ function.

A) static

B) global

C) inline

D) conditional

E) constructor

Answer: C

7) A \_\_\_\_\_\_\_\_ is a member function that is automatically called when a class object is \_\_\_\_\_\_\_\_.

A) constructor, created

B) constructor, destroyed

C) destructor, created

D) destructor, destroyed

E) both A and D

Answer: E

8) A constructor may have a return type of \_\_\_\_\_\_\_\_.

A) int

B) bool

C) void

D) Any of the above

E) None of the above

Answer: E

9) \_\_\_\_\_\_\_\_ member function may be called by a statement in a function that is outside the class.

A) A declared

B) A public

C) A private

D) An inline

E) Any

Answer: B

10) A C++ member function that uses, but does not change, the value of a member variable is called a(n) \_\_\_\_\_\_\_\_.

A) accessor

B) mutator

C) user

D) constant

E) constructor

Answer: A

11) Accessors are sometimes called \_\_\_\_\_\_\_\_ functions and mutators are sometimes called \_\_\_\_\_\_\_\_ functions.

A) set, get

B) get, set

C) public, private

D) private, public

E) regular, inline

Answer: B

12) If Circle is the name of a class, which of the following statements would create a Circle object named myCircle?

A) myCircle Circle;

B) myCircleCircle();

C) Circle myCircle;

D) Circle myCircle();

E) None of the above

Answer: C

13) If setRadius is a Circle class function and myCircle is a Circle object, which of the following statements would set myCircle's radius to 2.5?

A) setRadius(2.5);

B) myCircle.setRadius(2.5);

C) Circle.setRadius(2.5);

D) Circle(setRadius(2.5));

E) None of the above

Answer: B

14) When an object is passed \_\_\_\_\_\_\_\_ to a function, its members are not copied.

A) as an argument

B) by value

C) by reference

D) as a constant reference

E) by either method C or D above

Answer: E

15) Class declarations are usually stored \_\_\_\_\_\_\_\_.

A) on CDs

B) in their own header files

C) in .cpp files, along with function definitions

D) under pseudonyms

E) in system files

Answer: B

16) The bundling of an object's data and procedures together is called \_\_\_\_\_\_\_\_*.*

A) OOP

B) encapsulation

C) data hiding

D) structuring

E) private access

Answer: B

17) If you do not declare an access specification, the default for members of a class is \_\_\_\_\_\_\_\_.

A) inline

B) public

C) private

D) global

E) shared

Answer: C

18) The \_\_\_\_\_\_\_\_ is used to protect important data.

A) public access specifier

B) private access specifier

C) protect() member function

D) class protection operator

E) default constructor

Answer: B

19) Public members of a class object can be accessed from outside the class by using the \_\_\_\_\_\_\_\_.

A) dot operator

B) get function

C) extraction operator

D) member access operator

E) class name

Answer: A

20) A C++ member function that sets or changes the value stored in a member variable is called a(n) \_\_\_\_\_\_\_\_.

A) accessor

B) mutator

C) user

D) getter

E) updater

Answer: B

21) A(n) \_\_\_\_\_\_\_\_ member function may only be called from a function that is a member of the same class.

A) public

B) private

C) overloaded

D) local

E) constructor

Answer: B

22) A constructor must have the same name as the \_\_\_\_\_\_\_\_.

A) first private data member

B) first public data member

C) class

D) first object of the class

E) function return type

Answer: C

23) The name of a destructor must begin with \_\_\_\_\_\_\_\_.

A) the name of the class

B) a tilde (~)

C) a capital letter

D) an underscore

E) None of the above

Answer: B

24) A class may have \_\_\_\_\_\_\_\_ default constructor(s) and \_\_\_\_\_\_\_\_ destructor(s).

A) only one, only one

B) only one, more than one

C) more than one, only one

D) more than one, more than one

E) no, only one

Answer: A

25) The \_\_\_\_\_\_\_\_ directive prevents a header file from being included in a program more than once.

A) #include

B) #define

C) #ifndef

D) #endif

E) #exclude

Answer: C

26) When a member function is defined outside of the class declaration, the function name must be qualified with the class name, followed by \_\_\_\_\_\_\_\_.

A) a semicolon(;)

B) the scope resolution operator (::)

C) the public access specifier

D) the private access specifier

E) a tilde (~)

Answer: B

27) A class can have a member variable that is an instance of another class. This is called \_\_\_\_\_\_\_\_.

A) object composition

B) object containment

C) chaining

D) encapsulation

E) None of the above

Answer: A

28) A structure variable is similar to a class object in which of the following way(s)?

A) It has member data that is usually private and accessed through public member functions.

B) Its data can be initialized with a constructor.

C) It can be passed to a function or returned from a function.

D) All of the above.

E) B and C, but not A.

Answer: E

29) When an object or structure variable is passed to a function as a constant reference \_\_\_\_\_\_\_\_.

A) the function accesses the original object, rather than a copy of it

B) the function cannot make any changes to the member variables

C) it is more efficient than passing it by value

D) All of the above are true

E) A and B are true, but not C

Answer: D

30) The process of object-oriented analysis includes the following key steps \_\_\_\_\_\_\_\_.

A) create a problem description, find all the verbs in the description, then create the classes

B) identify the needed data members and member functions, then assign a class name

C) identify the private and public variables, then prototype the functions and write the code

D) write the main function, then determine which classes it will use

E) identify the needed classes, define their attributes and behaviors, and identify relationships between classes

Answer: E

31) Which of the following is(are) true?

A) A data type consists of a collection of values together with a set of basic operations defined on these values. Take int for example, the int data type has certain specified values, such as 0,1,-1,2,…, and the operations for the type int consists of +, -, \*, /, %, and a few other operators and predefined library functions.

B) A data type is called abstract data type (ADT) if the programmers who use the type do not have access to the details of how the values and operations are implemented.

C) The programmer defined type: classes and the C++ predefined types, such as int are ADTs.

D) A programmer who uses a class should not need to even look at the definitions of member functions, but need to know how the data of the class is implemented.

E) The terms: information hiding, data abstraction, and encapsulation are the most common used terms which mean that the details of the implementation of a class are hidden from the programmer who uses the class

Answer: ABCE

32) Which of the following are legal access to the class or struct members? Assume each is outside of the class member definitions,

struct S class C class D

{ { {

int x; int x; public:

int y; int y; int x;

} private: int y;

S s; int z; private:

}; int z;

C c; };

D d;

A) s.x

B) c.x

C) d.x

D) c.z

E) d.z

Ans: A, C

33) For the three classes declared as follows:

class A class B class C

{ { {

public: public: public:

void f(); B(); C(int k,int m);

private: private: C();

int x; int y; int g();

}; int z; private:

}; int y,z;

};

Which of the following is(are) legal?

1. B b1();
2. C c1(3,4);
3. C c2(3);
4. A a1;
5. C c3;.

Ans: B, D, E

1. Given the program, which of the following class member accesses are legal?

#include <iostream>using namespace std;class Automobile{public: void setPrice(double p); void setProfit(double p);// other public members private: double price; double profit; double getProfit();

// other private members

};int main(){

Automobile c1,c2;

double aPrice,bProfit;

c1.price = 9999.99; // A)

c2.setPrice(19999.99); // B)

cout<<(aPrice=c1.getPrice()); // C)

bProfit = c2.getProfit(); // D)

if(c1.profit == c2.profit) // E)

cout<< "Happy\n";

}

Ans: B, D

35) When you defined a C++ class, which of the following should not be part of the interface?

1. all declarations of private member variables
2. all declarations for public member functions
3. all explanatory comments for public member declarations.
4. all declarations for private member functions
5. all member function definitions (public or private)

ans: ADE

**Part 2, True/False 是非題 (5%)**

1) True/False: It is legal to call a constructor as a member function of an object of a class, as in

class A

{

public:

A(){}

A(int x, int y):xx(x), yy(y) {}

// other members

private:

int xx;

int yy;

};

int main()

{

A w;

w.A(2,3); // **Is this legal?**

}

Answer: FALSE

2) True/False: A structure has member variables, like an object, but they are usually all public and accessed directly with the dot operator, instead of by calling member functions.

Answer: TRUE

3) True/False: Inline functions are always more efficient than noninline functions.

Answer: FALSE

4) True/False: Consider these hierarchical structures.

struct Date

{

int year;

//members

};

struct Person

{

Date birthDay;

//other members

};

Person Bill;

The year of Bill’s birthday may be accessed as Bill.year;

Answer: FALSE

5) True/False: When an object is defined without an argument list for its constructor, the compiler automatically calls the object's default constructor, if there is one.

Answer: TRUE