**PARTI**

1  If you declare an array double list[] = {3.4, 2.0, 3.5, 5.5}, list[1] is \_\_\_\_\_\_\_\_.

A. 3.4

B. undefined

C. 2.0

D. 5.5

E. 3.4

2  Are the following two declarations the same  
  
char city[8] = "Dallas";   
char city[] = "Dallas";

A. no

B. yes

3  Given the following two arrays:  
  
char s1[] = {'a', 'b', 'c'};  
char s2[] = "abc";  
  
Which of the following statements is correct?

A. s2 has four characters

B. s1 has three characters

C. s1 has four characters

D. s2 has three characters

4  When you pass an array to a function, the function receives \_\_\_\_\_\_\_\_\_\_.

A. the length of the array

B. a copy of the array

C. the reference of the array

D. a copy of the first element

5  Are the following two declarations the same  
  
char city[] = {'D', 'a', 'l', 'l', 'a', 's'};   
char city[] = "Dallas";

A. yes

B. no

6  Suppose char city[7] = "Dallas"; what is the output of the following statement?  
  
cout << city;

A. Dallas0

B. nothing printed

C. D

D. Dallasd

7  Which of the following is incorrect?

A. int a(2);

B. int a[];

C. int a = new int[2];

D. int a() = new int[2];

E. int a[2];

8  Analyze the following code:  
  
   #include <iostream>  
   using namespace std;  
     
   void reverse(int list[], const int size, int newList[])  
   {  
     for (int i = 0; i < size; i++)  
       newList[i] = list[size - 1 - i];  
   }  
     
   int main()  
   {  
     int list[] = {1, 2, 3, 4, 5};  
     int newList[5];  
     
     reverse(list, 5, newList);  
     for (int i = 0; i < 5; i++)  
       cout << newList[i] << " ";  
   }

A. The program displays 1 2 3 4 5 and then raises an ArrayIndexOutOfBoundsException.

B. The program displays 1 2 3 4 6.

C. The program displays 5 4 3 2 1.

D. The program displays 5 4 3 2 1 and then raises an ArrayIndexOutOfBoundsException.

9  (Tricky) What is the output of the following code:  
  
  #include <iostream>  
  using namespace std;   
  
  int main()   
  {   
    int x[] = {120, 200, 16};   
    for (int i = 0; i < 3; i++)  
      cout << x[i] << " ";  
  }

A. 200 120 16

B. 16 120 200

C. 120 200 16

D. 16 200 120

10  Which of the following statements is valid?

A. int i(30);

B. int i[4] = {3, 4, 3, 2};

C. int i[] = {3, 4, 3, 2};

D. double d[30];

E. int[] i = {3, 4, 3, 2};

11  Which of the following statements are true?

A. The array elements are initialized when an array is created.

B. The array size is fixed after it is created.

C. Every element in an array has the same type.

D. The array size used to declare an array must be a constant expression.

12  How many elements are in array double list[5]?

A. 5

B. 6

C. 0

D. 4

13  Which of the following function declaration is correct?

A. int f(int a[3][], int rowSize);

B. int f(int a[][], int rowSize, int columnSize);

C. int f(int a[][3], int rowSize);

D. int f(int[][] a, int rowSize, int columnSize);

14  What is the output of the following code?  
  
  #include <iostream>  
  using namespace std;  
  
  int main()  
  {  
    int matrix[4][4] =  
      {{1, 2, 3, 4},  
       {4, 5, 6, 7},  
       {8, 9, 10, 11},  
       {12, 13, 14, 15}};  
  
    int sum = 0;  
  
    for (int i = 0; i < 4; i++)  
      cout << matrix[i][1] << " ";  
  
    return 0;  
  }

A. 3 6 10 14

B. 1 3 8 12

C. 1 2 3 4

D. 4 5 6 7

E. 2 5 9 13

15  Which of the following statements are correct?

A. char charArray[2][2] = {{'a', 'b'}, {'c', 'd'}};

B. char charArray[][] = {{'a', 'b'}, {'c', 'd'}};

C. char charArray[][] = {'a', 'b'};

D. char charArray[2][] = {{'a', 'b'}, {'c', 'd'}};

16  Given the following program, show the values of the array in the following figure:

#include <iostream>

using namespace std;

int main()

{

int values[5];

for (int i = 1; i < 5; i++)

{

values[i] = i;

}

values[0] = values[1] + values[4];

return 0;

}



**PART II**

*17*  Given the declaration Circle x, which of the following statement is most accurate.

A. x is an object of the Circle type.

B. x is a reference to a Circle object.

C. You can assign an int value to x.

D. x contains an int value.

*18*  Analyze the following code:  
  
   #include <iostream>  
   using namespace std;  
     
   class A  
   {  
   public:  
     int s;  
     
     A(int newS)  
     {  
       s = newS;  
     }  
     
     void print()  
     {  
       cout << s;  
     }  
   };  
     
   int main()  
   {  
     A a;  
     a.print();  
   }

A. The program has a compilation error because class A is not a public class.

B. The program compiles and runs fine and prints nothing.

C. The program has a compilation error because class A does not have a default constructor.

D. The program would compile and run if you change A a to A a(5).

*19*  Suppose circle1 and circle2 are two Circle objects. What does the following statement do?  
  
   circle2 = circle1;

A. This statement is illegal.

B. It makes circle2 and circle1 the same object.

C. It copies the contents of circle2 to circle1.

D. It copies the contents of circle1 to circle2.

*20*  Which of the following statements are true?

A. The class declaration file has an extension name .h and the class implementation file has an extension name .cpp.

B. C++ allows you to separate class declaration from implementation.

C. The class declaration and implementation are in two separate files. Both files should have the same name, but with different extension names.

D. The class declaration describes the contract of the class and the class implementation implements the contract.

E. The class declaration simply lists all the data fields, constructor prototypes, and the function prototypes. The class implementation implements the constructors and functions.

*21*  Analyze the following code.  
  
  #include <iostream>  
  using namespace std;  
  
  class B  
  {  
  public:  
    B() { };  
    int k;  
  };  
  
  int main()  
  {  
    B b;  
    cout << b.k << endl;  
  
    return 0;  
  }

A. The program displays 1.

B. The program displays unpredictable number.

C. The program has a compile error because b.k cannot be accessed.

D. The program displays 0.

E. The program has a runtime error because b.k does not have a value.

*22*  There are no default value for data fields in a class.

A. false

B. true

*23*  Which of the following statements are true?

A. Encapsulating data fields makes the program easy to maintain.

B. If you don't use the public keyword, the visibility is private by default.

C. Encapsulating data fields helps prevent programming errors.

D. Encapsulating data fields makes the program short.

E. Use the private keyword to encapsulate data fields.

*24*  Suppose two header files t1.h and t2.h contain the declarations for class T. What happens if you include both header files in your program?

A. The program will compile fine and the first header file that is included is used.

B. You will get multiple declaration error if the header files don't have the include guard.

C. The compile will automatically decides which implementation to use.

D. The program will compile fine and the first header file that is included is used if the header files have the include guard.

*25*  Variables that are shared by every instances of a class are \_\_\_\_\_\_\_\_\_\_.

A. instance variables

B. private variables

C. public variables

D. static variables

**PART III**

26. Analyze the following code.

#include <iostream>

using namespace std;

class Test

{

public:

int x;

Test()

{

cout << "Test";

}

};

int main()

{

Test test;

cout << test.x;

}

a. The program has a compile error because test is not initialized.

b. The program runs fine, but test.x is unpredictable.

c. The program has a compile error because Test does not have a default constructor.

d. The program has a compile error because x has not been initialized.

27. What is the output of the following code?

#include <iostream>

using namespace std;

class Foo

{

public:

int x; // data field

int y; // data field

Foo()

{

x = 10;

y = 10;

}

void p()

{

int x = 20; // local variable

cout << "x is " << x << " ";

cout << "y is " << y << endl;

}

};

int main()

{

Foo foo;

foo.p();

return 0;

}

a. x is 20 y is 20

b. x is 10 y is 10

c. x is 10 y is 20

d. x is 20 y is 10

28. Show the output of the following code:

#include <iostream>

using namespace std;

class A

{

public:

int x;

int y;

int z;

A(): x(1), y(2), z(3)

{

}

};

int main()

{

A a;

cout << a.x << " " << a.y << " " << a.z;

return 0;

}

a. 2 2 2

b. 3 3 3

c. 1 1 1

d. 1 2 3

e. 1 1 2

29. Suppose A has a public no-arg constructor. To create an anonymous object from a class A, use \_\_\_\_\_\_\_\_\_\_.

a. new A

b. A

c. new A()

d. A()

30. Given the declaration Circle x, which of the following statement is most accurate?

a. x contains an int value.

b. You can assign an int value to x.

c. x is an object of the Circle type.

d. x is a reference to a Circle object.

31. Analyze the following code.

#include <iostream>

using namespace std;

class B

{

public:

B() { };

private:

int k;

};

int main()

{

B b;

cout << b.k << endl;

return 0;

}

a. The program has a runtime error because b.k does not have a value.

b. The program displays 1.

c. The program displays 0.

d. The program displays unpredictable number.

e. The program has a compile error because b.k cannot be accessed.

32. What is wrong in the following code?

#include <iostream>

using namespace std;

class TempClass

{

public:

int i;

TempClass()

{

int i = 5;

}

};

int main()

{

TempClass temp(2);

}

a. The program has a compilation error because TempClass does not have a constructor with an int argument.

b. The program compiles fine, but it does not run because class C is not public.

c. The program has a compilation error because TempClass does not have a default constructor.

d. The program compiles and runs fine.

33. Analyze the following code.

#include <iostream>

using namespace std;

class B

{

public:

B() { };

int k;

};

int main()

{

B b;

cout << b.k << endl;

return 0;

}

a. The program displays 0.

b. The program displays 1.

c. The program displays unpredictable number.

d. The program has a compile error because b.k cannot be accessed.

e. The program has a runtime error because b.k does not have a value.

34. Suppose circle1 and circle2 are two Circle objects. What does the following statement do?

circle2 = circle1;

a. It copies the contents of circle1 to circle2.

b. This statement is illegal.

c. It makes circle2 and circle1 the same object.

d. It copies the contents of circle2 to circle1.

35. What is the printout of the following code?

#include <iostream>

using namespace std;

class Count

{

public:

int count;

Count(int c)

{

count = c;

}

Count()

{

count = 0;

}

};

void increment(Count c, int &n)

{

c.count++;

n++;

}

int main()

{

Count myCount;

int n = 0;

for (int i = 0; i < 100; i++)

increment(myCount, n);

cout << "myCount.count is " << myCount.count;

cout << " n is " << n;

return 0;

}

a. myCount.count is 0 n is 0

b. myCount.count is 100 n is 100

c. myCount.count is 0 n is 100

d. myCount.count is 100 n is 0

36. What is the output of the following code?

string s("abcdefg");

cout << s.substr(1, 3);

a. a

b. bcd

c. c

d. abc

37. What is the output of the following code?

string s("abcdefg");

cout << s.compare("abb") << endl;

a. 1

b. -1

c. -2

d. 0

38. What is the output of the following code?

string s("abcdefg");

s.replace(1, 2, "wel");

cout << s << endl;

a. abcdefg

b. welabcdefg

c. awelbcdefg

d. aweldefg

39. Variables that are shared by every instances of a class are \_\_\_\_\_\_\_\_\_\_.

a. public variables

b. private variables

c. static variables

d. instance variables

40. A function that is associated with an individual object is called \_\_\_\_\_\_\_\_\_\_.

a. a static function

b. a class function

c. an object function

d. an instance function

41. When invoking a function with a reference object parameter, \_\_\_\_\_\_\_\_\_\_\_ is passed.

a. the object is copied, then the reference of the copied object

b. a copy of the object

c. the reference of the object

d. the contents of the object

42. What is the output of the following code?

string s("abcdefag");

cout << s.find("def") << " " << s.find("a", 3);

a. 0 0

b. 3 0

c. 2 4

d. 3 6

43. You should add the static keyword in the place of ? in which of the following function:

#include <iostream>

using namespace std;

class Test

{

public:

? int square(int n)

{

return n \* n;

}

? int getAge()

{

return age;

}

private:

int age;

};

a. none

b. in the square function because the function does not use any instance data fields.

c. in the getAge function

d. in both lthe square function and the getAge function

44. What is the output of the following code?

#include <iostream>

using namespace std;

int main()

{

int list[] = {1, 1, 1, 1};

\*(list) = \*(list) + 1;

\*(list + 1) = \*(list + 1) + 2;

\*(list + 2) = \*(list + 2) + 3;

\*(list + 3) = \*(list + 3) + 4;

cout << list[0] << " " << list[3] << endl;

return 0;

}

a. 2 2

b. 3 5

c. 2 5

d. 1 2

e. 3 4

45. Assume you declared int \*p and p’s current value is 1000. What is p + 1?

a. 1004

b. 1002

c. 1003

d. 1001

46. What is wrong in the following code?

#include <iostream>

#include <vector>

using namespace std;

int main()

{

vector<int> v;

cout << v[0];

return 0;

}

a. The program has a compile error on v[0].

b. The program has a runtime error on vector<int> v.

c. The program has a runtime error on v[0], because the vector is empty.

d. The program has a compile error on vector<int> v.

47. To add an int value 5 to a vector v of integers, use \_\_\_\_\_\_\_\_\_.

a. v.push\_back(5);

b. v.add(5);

c. v.append(5);

d. v.insert(5);

48. What is the correct signature for the overloaded subscript operator []?

a. long& operator[](const int &index);

b. long Rational::operator[](const int &index)

c. &long operator[](const int &index);

d. long operator&[](const int &index);

49. What is the correct signature for the overloaded postfix ++ operator?

a. Rational operator++(int &dummy)

b. Rational operator++()

c. Rational operator++(int dummy)

d. Rational operator++(Rational &r)

50. What is the correct signature for a function that converts a Rational to double?

a. double operator()

b. operator double()

c. Rational operator double()

d. double operator double()

**PART IV**

*51*  Which of the following statements are correct to delete a dynamic object from a   
pointer p?

A. delete [] p;

B. delete [] \*p;

C. delete \*p;

D. delete p;

*52*  Suppose you declare the following:  
  
double radius = 5;  
const double const\* pValue = &radius;  
  
Which of the following statements are allowed?

A. pValue = &radius;

B. cout << \*pValue;

C. \*pValue = 0;

D. (\*pValue)++;

*53*  What is the output of the following code?  
   #include <iostream>  
   using namespace std;  
     
   int main()  
   {  
     int list[] = {10, 20, 30, 40};  
     cout << \*(list + 1) << " " << \*list + 1 << endl;  
     
     return 0;  
   }

A. 10 10

B. 20 11

C. 30 30

D. 20 20

*54*  Suppose you declare int count = 5; which of the following is true?

A. &count is 5

B. \*count is the address of count

C. \*count is 5

D. &count is the address of count

*55*  Suppose you declare an array double list[] = {1, 3.4, 5.5, 3.5}. &list[1] is same as \_\_\_\_\_\_\_\_.

A. list[1]

B. list

C. list[0]

D. list + 1

E. list + 2

*56*  What is wrong in the following code?  
  
   #include <iostream>  
   #include <vector>  
   using namespace std;  
  
   int main()  
   {  
     vector<int> v;  
     cout << v[0];  
     return 0;  
   }

A. The program has a runtime error on vector<int> v.

B. The program has a runtime error on v[0], because the vector is empty.

C. The program has a syntax error on vector<int> v.

D. The program has a syntax error on v[0].

*57*  To add an int value 5 to a vector v of integers, use \_\_\_\_\_\_\_\_\_.

A. v.append(5);

B. v.insert(5);

C. v.add(5);

D. v.push\_back(5);

*58*  To obtain the first element in a vector v, use \_\_\_\_\_\_\_.

A. v[1];

B. v.at(1);

C. v.at(0);

D. v[0];

**PART V**

*59*  Which of the following statements are true?

A. C++ enables you to use the friend keyword to declare friend functions and friend classes for a class so these functions and classes can access the class?s private members.

B. Private members of a class cannot be accessed from outside of the class.

*60*  What is the correct signature for the overloaded >> operator?

A. friend istream operator>>(istream &stream, const Rational &rational);

B. friend istream &operator>>(istream &stream, const Rational &rational);

C. friend istream &operator>>(istream &stream, Rational &rational);

D. friend istream operator>>(istream &stream, Rational &rational);