
Question 1

10 out of 10 points

C++ is an interpreted language.

Selected Answer: False

Answers: True
 False

Question 2

10 out of 10 points

Which of the following statements correctly describes Encapsulation.

Selected Answer: Both data and the methods that operate on that data co-exist in the same class.

Answers: Private methods are hidden in the class and public methods are exposed to other classes.
 Private data is hidden in the class and public data is exposed to other classes.
 Both data and the methods that operate on that data co-exist in the same class.
 Each object has its own data.
 None of the answers are correct.

Question 3

10 out of 10 points

Which describes a correct way to implement of Encapsulation?

- public getter & setter methods.
- private member data

Answers: Void return types.

- Separate class specification in header files and class implementation in ".cpp" files.
 - None of the answers are correct.
 - public getter & setter methods.
 - private member data
-

Question 4

10 out of 10 points

Which is used in the correct implementation of data hiding.

Selected Answers: protected member data
 static keyword
 private member data

Answers: protected member data
 static keyword
 private member data
 public data
 None of the answers are correct.

Question 5

0 out of 10 points

Inheritance is key to the concept of Polymorphism.

Selected Answer: False

Answers: True
 False

Question 6

0 out of 10 points

Method overriding is key to the concept of Polymorphism.

Selected Answer: False

Answers: True
 False

Question 7

10 out of 10 points

Public class data supports the concept of Encapsulation.

Selected Answer: False

Answers: True
 False

Question 8

10 out of 10 points

Private class data supports the concept of Encapsulation.

Selected Answer: True

Answers: True
 False

Question 9

0 out of 10 points

Protected class data supports the concept of Encapsulation.

Selected Answer: False

Answers: True
 False

Question 10

10 out of 10 points

The design of classes is optional for Object Oriented Programming.

Selected Answer: False

Answers: True
 False

Question 11

10 out of 10 points

The use of Inheritance increases the number of lines of code written.

Selected Answer: False

Answers: True
 False

Question 12

10 out of 10 points

Which of the following can be described as associative container.

Selected Answer: a map

Answers: an array
 a list
 a vector
 a map
 None of the answers are correct.

Question 13

10 out of 10 points

Select advantages of using an array as a container.

Selected Answers: data stored in contiguous memory
 random access
 small footprint

Answers: data stored in contiguous memory
 random access
None of the answers are correct.
 small footprint
resizes as needed.

Question 14

10 out of 10 points

One disadvantages of using a vector as a container is that it does not provide random access to its contents.

Selected Answer: False

Answers: True
 False

Question 15

10 out of 10 points

One advantage of using a vector as a container is that it can grow or shrink in size.

Selected Answer: True

Answers: True
 False

Question 16

10 out of 10 points

Choose the correct answer or answers: Which objected oriented design concept is key to the factory design pattern?

Inheritance

Answers: None of the answers are correct.

encapsulation
 Robustness
 Readability
 Inheritance

Question 17

0 out of 10 points

Choose the correct answer or answers: The factory design pattern increases what?

Robustness

Flexibility

Answers: None of the answers are correct.

Robustness
 Readability
 Reliability
 Flexibility

Question 18

10 out of 10 points

Choose the correct answer or answers: The factory design pattern is a ??? design pattern.

Selected Answer: creational

Answers: creational
 behavioral
 instructional
 operational

Question 19

10 out of 10 points

Choose the correct answer or answers: The command design pattern is a ??? design pattern.

Selected Answer: behavioral

Answers: operational
 behavioral
 creational
 instructional

Question 20

0 out of 10 points

The factory design pattern implements tight coupling.

Selected Answer: True

Answers: True
 False

Question 21

10 out of 10 points

Choose the answer or answers that are true about using design patterns.

- Design Patterns represent the industry best practice
- Design Patterns represent proven implementations to solve common coding problems

Answers: None of the answers are correct.

- Design Patterns represent the minimal code solution
- Design Patterns represent the industry best practice
 - Design Patterns represent the only correct answer.
 - Design Patterns represent proven implementations to solve common coding problems
-

Question 22

0 out of 10 points

Choose the answer or answers that are true about using the command design pattern.

- implements request response model
- request becomes an object
- implements command action transaction

Answers: None of the answers are correct.

- request becomes transferable
- implements request response model
- request becomes an object
- implements command action transaction

Question 23

0 out of 10 points

Which of the following describe the C++ programming language?

Compiled

Answers: Low-Level

Declarative

None of the answers are correct.

Interpreted

Compiled

Question 24

10 out of 10 points

True or False: Does the following code segment correctly compile (i.e no errors in these lines of code), execute and produce the output as shown:

```
map<string, int> m;  
m["Dan"] = 31;  
m["James"] = 51;  
m["Jess"] = 29;  
cout << "Jess' age is : " << m["Jess"] << " years old" << endl;
```

Jess' age is : 29 years old

Selected Answer: True

Answers: True

False

Question 25

10 out of 10 points

The friend keyword is used to grant access to private class members.

Selected Answer: True

Answers: True

False

Question 26

10 out of 10 points

The friend keyword makes what was private become public.

Selected Answer: False

Answers: True

False

Question 27

10 out of 10 points

C++ requires you to separate specification in header files from the implementation in the .cpp files.

Selected Answer: False

Answers: True

False

Question 28

0 out of 10 points

You cannot mix C++ and C language code in the same file.

Selected Answer: True
Answers: True
 False

Question 29

10 out of 10 points

Select the correct answer to calculate PI:

Selected Answer: double pi = 22/7.0;
Answers: double pi = 22/7;
 Double pi = 22.0/7.0;
 double pi = 22/7.0;
 int pi = 22/7.0;

Question 30

10 out of 10 points

Select the correct answer or answers to complete (i.e. replace the ???) code segment #1.
??? a[] = {0,1,2,3,4,5};

Selected Answers: int
 double
 bool
Answers: int
 auto
 double
 bool

Question 31

10 out of 10 points

Select the correct answer or answers to complete (i.e. replace the ???) code segment #2.
a[0] = 0;
a[1] = 1;
for (??? i : a) {
 cout << i << " , ";
}

Selected Answers: int
 float
 long int
 bool
Answers: int
 float
 long int
 bool
 long float

Question 32

10 out of 10 points

Select the correct answer or answers to complete (i.e. replace the ???) code segment #3.
 ??? a2[] = {0.0,1.1,2.2,3.3,4.4,5.5};

- float
- int
- double

Answers: auto

- float
- int
- double

Question 33

10 out of 10 points

Select the correct answer or answers to complete (i.e. replace BOTH the ??? with the same answer) code segment #2.

```

  ??? a[] = { 0, 1 };
  for ( ??? i : a ) {
    cout << i << " ";
  }

```

- int
- bool
- double

Answers: auto

- int
- bool
- double

Question 34

10 out of 10 points

Given the (correctly completed with ??? replaced) code segment #4:

```

  ??? a[3] = { 0, 1 };
  for ( ??? i : a ) {
    cout << i << " ";
  }
  cout << endl;

```

When executed, the output would be 0, 1, 0,

Selected Answer: True

Answers: True
 False

Question 35

0 out of 10 points

The following code segment does not contain any compilation errors.

```

class CircleMath {
  const double m_scale;
  string m_units;
  double m_radius;
  double m_diameter;
  double m_circumference;
  double m_area;

public:
  CircleMath();
  CircleMath(double r);
  CircleMath(double r, string u);
  virtual ~CircleMath();

  double inputRadius();
  string inputUnits();
  void run();
};

```

Selected Answer: False

Answers: True
 False

Question 36

10 out of 10 points

Given the following source code, select all the answers that apply:

```
#include <iostream>
#include <array>
int main() {
    f1();
    return 0;
}
void f1() {
    std::array<double, 7> weeklyHours = { 8, 8, 8, 8, 8, 0, 0 };
    for (double i : weeklyHours) {
        std::cout << i << " ";
    }
}
```

Code incurs a compilation error.

Answers: None of the answers are correct.

Code executes and produces the following output:
8,8,8,8,8

Code compiles successfully but incurs a linker error.

Code incurs a compilation error.

Code executes and produces the following output:
8,8,8,8,0,0

Question 37

10 out of 10 points

Class constructors must have a return type of void.

Selected Answer: False

Answers: True

False

Question 38

0 out of 10 points

Choose the best answer or answers which describe the UML language.

Selected Answers: Picture

Relational

Answers: Picture

None of the answers are correct.

Relational

Interpreted

Abstract

Question 39

0 out of 10 points

The UML _____ diagram is primarily used to show the relationship between the components which comprise a system.

Object

Answers: Sequence

None of the answers are correct.

Object

Use Case

Class

Question 40

0 out of 10 points

The term "Generalization" is used by UML to describe which of the following.

Inheritance

Answers: None of the answers are correct.

abstraction

The separation of the class specification from its implementation

Inheritance

the deriving of one class from another

Question 41

10 out of 10 points

If you were developing an inventory application to track and sort all incoming auto parts, which of the following STL containers would be best suited for this use?

List

Answers: Vector

None of these containers can be used for this application.

Array

List

Question 42

0 out of 10 points

If your application required a list of every US state mailing abbreviations, e.g. NH, MA, NY, RI, VT, CT, etc, which you had to retrieve by using a unique numerical code (of your choice) for each state abbreviation, which would be your best choice for holding these abbreviations for use by your application.

map

Answers: array

vector

map

list

unordered map

Question 43

10 out of 10 points

Given the following program code, what would your program produce?

```
class employee;
int main() {
    employee *ptr;
    return 0;
}
```

Code executes and produces the following output:

Answers: Code does not execute.

None of the answers are correct.

Code incurs a compilation error.

Code compiles successfully but incurs a linker error.

Code executes and produces the following output:

Question 44

0 out of 10 points

If changed your working program and added the following lines of code (see below) to the main function, how would your modified program change?

```
#include <iostream>
void f0(int &sum) {
    sum = 3+2*7;
}
int main() {
    int *p,sum = 0;
    (*p)++;
    sum = sum * 3;
    f0(sum);
    std::cout << sum << " ";
    return 0;
} // end main
```

Your modified program would now also produce output of:
17,



Answers: None of the answers are correct.

Your modified program would now also produce a compilation error.

Your modified program would now also produce output of:

0,

Your modified program would now also produce output of:

17,

Your modified program would now also produce a linker error.

Your modified program would now also produce output of:

35,

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