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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Fundamentals of Object Oriented Programming (course)[Announcements \(announcements\)](#)   [About the Course \(preview\)](#)   [Q&A \(forum\)](#)   [Progress \(student/home\)](#)   [Mentor \(student/mentor\)](#)[Review Assignment \(assignment\\_review\)](#)   [Course Recommendations New! \(/course\\_recommendations\)](#)[Click to register for  
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## Week 2: Assignment 2

The due date for submitting this assignment has passed.

**Due on 2025-02-05, 23:59 IST.**

Assignment submitted on 2025-02-01, 16:36 IST

1) Which of the following best describes a class in object-oriented programming?

**1 point**

- ☐ A block of code that defines functions only.
- ☒ A blueprint for creating objects, encapsulating data and methods.
- ☐ A template for functions without data.
- ☐ A data structure for storing primitive data types.

## How does an NPTEL online course work? ()

### Week 0 ()

### Week 1 ()

### Week 2 ()

☐ Classes and Objects in C++ (unit? unit=32&lesson=33)

☐ Classes and Objects in Java and Solved problems (unit? unit=32&lesson=34)

☐ Constructors in C++: Default and Parameterized (unit? unit=32&lesson=35)

☐ Constructors in C++: Copy Constructor (unit? unit=32&lesson=36)

☐ Constructors in Java: Default and Parameterized (unit? unit=32&lesson=37)

☒ **Quiz: Week 2: Assignment 2 (assessment?name=38)**

☐ Solution for Week 2 (unit? unit=32&lesson=93)

Yes, the answer is correct.

Score: 1

Accepted Answers:

*A blueprint for creating objects, encapsulating data and methods.*

2) What happens when an object is created from a class in C++?

**1 point**

- ☐ Memory is allocated for the object's member variables only.
- ☐ Memory is allocated for member functions and variables.
- ☐ Member functions are inherited and memory is allocated for them.
- ☒ Member functions are shared across objects, and memory is allocated only for variables.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Member functions are shared across objects, and memory is allocated only for variables.*

3) Which of the following statements about constructors is false?

**1 point**

- ☐ Constructors must have the same name as the class.
- ☐ Constructors can be overloaded in C++.
- ☒ Constructors cannot be private in C++.
- ☐ Constructors do not have a return type.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Constructors cannot be private in C++.*

4) In a Java program to define a class Circle with:

**1 point**

- A constructor that initializes its radius.
- A method getArea() to return the area of the circle.

[Week 3 \(\)](#)[Week 4 \(\)](#)[Week 5 \(\)](#)[Week 6 \(\)](#)[Week 7 \(\)](#)[Week 8 \(\)](#)[Week 9 \(\)](#)[Week 10 \(\)](#)[Week 11 \(\)](#)[Week 12 \(\)](#)[Download Videos \(\)](#)[Weekly Feedback \(\)](#)

Identify the correct syntax to create an object of this class.

- ☐ Circle c1 = new Circle();
- ☒ Circle c1 = new Circle(radius);
- ☐ Circle c1 = Circle(radius);
- ☐ Circle c1 = new Circle[radius];

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Circle c1 = new Circle(radius);*

5) Consider the following C++ code:

```
#include <iostream>
class Test {
public:
    Test() { std::cout << "Constructor called\n"; }
    ~Test() { std::cout << "Destructor called\n"; }
    void display() { std::cout << "Display function\n"; }
};

int main() {
    Test t1;
    t1.display();
    return 0;
}
```

What is the output of this program?

- ☒ Constructor called  
Display function  
Destructor called
- ☐ Constructor called  
Destructor called  
Display function

**1 point**

☐

Display function  
Constructor called  
Destructor called

☐

Constructor called  
Display function

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Constructor called*

*Display function*

*Destructor called*

6) What is the primary purpose of a destructor in C++?

**1 point**

☐

To initialize an object when it is created.

☒

To release memory and resources when an object is destroyed.

☐

To overload operators for memory allocation.

☐

To define default behavior for inheritance.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*To release memory and resources when an object is destroyed.*

7) Consider the following C++ code:

**1 point**

```
#include <iostream>
class Sample {
public:
    Sample() { std::cout << "Constructor called\n"; }
    ~Sample() { std::cout << "Destructor called\n"; }
};

void createObject() {
    Sample obj;
    std::cout << "Inside createObject function\n";
}

int main() {
    std::cout << "Before calling createObject\n";
    createObject();
    std::cout << "After calling createObject\n";
    return 0;
}
```

What is the output of this program?

- ☐ Constructor called  
Inside createObject function  
Destructor called  
Before calling createObject  
After calling createObject
- ☐ Before calling createObject  
Constructor called  
Inside createObject function  
Destructor called  
After calling createObject
- ☐ Before calling createObject  
Inside createObject function

Constructor called  
Destructor called  
After calling createObject  
☐  
Before calling createObject  
Constructor called  
Inside createObject function  
After calling createObject  
Destructor called

No, the answer is incorrect.  
Score: 0

Accepted Answers:

*Before calling createObject*  
*Constructor called*  
*Inside createObject function*  
*Destructor called*  
*After calling createObject*

8) A class in C++ has multiple constructors. How does the compiler decide which constructor to use?

**1 point**

- ☐ Based on the return type.
- ☒ Based on the arguments passed during object creation.
- ☐ The first constructor is always used.
- ☐ The last constructor is always used.

Yes, the answer is correct.  
Score: 1

Accepted Answers:

*Based on the arguments passed during object creation.*

9) In a C++ program that:

**1 point**

- Defines a class FileHandler with a constructor that opens a file and a destructor that closes the file.
- Demonstrates file handling using objects of this class.

Choose the correct constructor signature:

- ☐ FileHandler(std::string filename);
- ☐ FileHandler(char\* filename);
- ☐ FileHandler(const char filename[]);
- ☒ All of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*All of the above*

10) Analyze the following C++ code and identify the correct output:

**1 point**

```
#include <iostream>
class Rectangle {
    int length, width;
public:
    Rectangle(int l, int w) : length(l), width(w) {}
    int area() { return length * width; }
};

int main() {
    Rectangle rect(5, 3);
    std::cout << rect.area();
    return 0;
}
```

- ☒ 15
- ☐ 8
- ☐ Compilation error
- ☐ Undefined behavior

Yes, the answer is correct.

Score: 1

Accepted Answers:

*15*

