Unit 12 - Week 10 :

Assignment 10

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-11-25, 23:59 IST.

1) *1 point*

Which one of the following is the main objective of the Singleton pattern?

a. Ensure that no more than one instance of a class exists.
b. Ensure that only one instance of a class exists for each thread of access.
c. Separate the objects of a single class from objects of another class.
d. Control the creation of the first instance of the classes to enhance efficiency.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

2) *1 point*

Which of the following characteristics of a class indicates the applicability of the Singleton pattern?

a. The class has only a single member method.
b. The class has only a single field.
c. The class should have exactly one instance.
d. The class can at most be subclassed once.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

3) *1 point*

Consider the following structure of a singleton class.

Which one of the following is not essential to the satisfactory working of the singleton class?

a. **uniqueInstance** is static
b. **getInstance()** is static
c. **singletonData** is static
d. **Singleton()** is private

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

4) *1 point*

Following Java code for implementing a singleton class has been written by a programmer.

```
1. public class Singleton {
2.     private static Singleton uniqueInstance = null;
3.     private Singleton( ) { . . }
4.     public static Singleton getInstance( ) {
5.         uniqueInstance = new Singleton();
6.         return uniqueInstance;
7.     }
8. }
```

The singleton does not work satisfactorily as there is a bug in the code. Which line in the code has the bug?

a. 2
b. 3
c. 5
d. 6

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

5) *1 point*

Consider the following structure of a singleton class.

To make the singleton to work satisfactorily in a Java concurrent thread execution environment, which method must be declared synchronized?

a. **getSingletonData()**
b. **getInstance()**
c. **singletonOperation()**
d. **Singleton()**

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b

6) *1 point*

Which one of the following sentences describes the purpose of the state pattern most accurately?

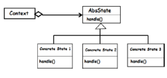
a. The behaviour of an object changes based on its state.
b. The state behaviour of a class is implemented using a doubly nested switch
c. The behaviour of the algorithm used in a class method can be changed at run time.
d. The state behaviour of a class is implemented in an abstract class and are inherited by the concrete state classes.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

7) *1 point*

Consider the class diagram for the state pattern.



Which class displays state-dependent behavior?

a. Context
b. AbsState
c. Concrete State 1
d. Concrete State 2

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

8) *1 point*

Consider the class diagram for the state pattern.

Which one of the following is **FALSE** about the state pattern?

a. Polymorphism is a main idea used in this pattern
b. The state object pointed to by the context class changes its state
c. The state variable in the context class is of the type **AbsState**
d. The state transition logic can only be implemented in the **context** class and not in the **AbsState** classes

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b

9) *1 point*

Which of the following pattern is used where we need to treat a group of objects in similar way as a single object?

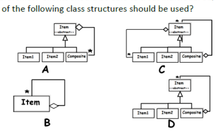
a. Composite Pattern
b. Facade Pattern
c. Flyweight Pattern
d. Decorator Pattern

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

10) *1 point*

Suppose in a certain application, we need to nest a group of objects into a tree structure to represent part-whole hierarchies. Clients should be able to treat individual objects and composites in the same way. Which of the following class structures should be used?



a. A
b. B
c. C
d. D

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d