PROGRAMMING IN JAVA

Assignment 2

TYPE OF QUESTION: MCQ

Number of questions: 10 Total marks**: 10 × 1 = 10**

QUESTION 1:

In Java programming an object can take many forms. This feature called _____.

a. **Abstraction**
b. **Polymorphism**
c. **Encapsulation**
d. **Inheritance**

Correct Answer:

b. **Polymorphism**

Detailed Solution:

Polymorphism means "many forms", and it occurs when we have many classes that are related to each other by inheritance. Object variables (instance variables) represent the behavior of polymorphic variables in Java. It is because object variables of a class can refer to objects of its class as well as objects of its subclasses.

QUESTION 2:

Which of the following is a valid declaration of an object of class, say `NPTEL`?

a. **`NPTEL` obj = new `NPTEL` ();**
b. **`NPTEL` obj = new `NPTEL`;**
c. **obj = new `NPTEL` ();**
d. **new `NPTEL` obj;**

Correct Answer:

a. **`NPTEL` obj = new `NPTEL` ();**

Detailed Solution:

The correct syntax for declaring an object is:
<class_name> <object_name> = new <class_name>().
So the correct declaration of an object named `obj` is: `NPTEL obj = new NPTEL();`
Others are invalid declarations.

QUESTION 3:

A default constructor:

a. **has no arguments**
b. **has no return type**
c. **has one argument but no return type**
d. **has two arguments**

Correct Answer:

a. **has no arguments**

Detailed Solution:

A default constructor is a constructor created by the compiler if we do not define any constructor(s) for a class. A constructor is called "Default Constructor" when it doesn't have any parameter. The Syntax of default constructor: <class_name>(){} . The default constructor is used to provide the default values to the object like 0, null, etc., depending on the type.
Example:

```
class NPTEL {

  //creating a default constructor
  NPTEL() {
    System.out.println("Programming in Java");
  }

  //main method
  public static void main(String args[]) {
    //calling a default constructor
    NPTEL obj = new NPTEL();
  }
}
```

Output: “Programming in Java”

QUESTION 4:

A top-level class may have which one of the following access modifiers?

a. **package**
b. **private**
c. **protected**
d. **public**

Correct Answer:

d. **public**

Detailed Solution:

At the top level only `public`, or package-private (no explicit modifier) access modifier is allowed in Java. For top level class only two access modifiers are allowed: `public` and `default`. If a class is declared as `public` it is visible everywhere. If a class is declared `default` it is visible only in same package.

QUESTION 5:

`Integer` in Java is a\an _____.

a. **Adapter class**
b. **Inner class**
c. **Not a class**
d. **Wrapper class**

Correct Answer:

d. **Wrapper class**

Detailed Solution:

Byte, Short, Integer, Long, Character, Boolean, Double, Float are called wrapper class in Java.

QUESTION 6:

What is true about the new operator?

a. **returns a pointer to a variable**
b. **creates a variable called new**
c. **obtains memory for a new variable**
d. **tells how much memory is available**

Correct Answer:

c. **obtains memory for a new variable**

Detailed Solution:

The new operator is used in Java to create new objects. It can also be used to create an array object. The new operator instantiates a class by allocating memory for a new object and returning a reference to that memory. The new operator also invokes the object constructor. It is used for dynamic memory allocation which puts variables on heap memory.

QUESTION 7:

Which one is not supported by OOP?

a. **Abstraction**
b. **Polymorphism**
c. **Encapsulation**
d. **Global variables**

Correct Answer:

d. **Global variables**

Detailed Solution:

Java does not support global variables. A global variable is one declared at the start of the code and is accessible to all parts of the program. Since Java is object-oriented, everything is part of a class. The intent is to protect data from being changed. A static variable can be declared, which can be available to all instances of a class.

QUESTION 8:

Which of the following modifiers can be used to disallow a method from being overridden?

a. **final**
b. **transient**
c. **volatile**
d. **static**

Correct Answer:

a. **final**

Detailed Solution:

The `final` keyword is a non-access modifier used for classes, attributes and methods, which makes them non-changeable (impossible to inherit or override). The `final` keyword is useful when you want a variable to always store the same value, like `PI` (3.14159...).

QUESTION 9:

Consider the following code segment

```
1  class Question{
2    public static void main(String args){
3         System.out.print(“Welcome to NPTEL”);
4    }
5 }
```

Identify the line number(s) where there is/are error(s) in the above code.

a. **1**
b. **2**
c. **3**
d. **4 and 5**

Correct Answer:

b. **2**

Detailed Solution:

The `String` argument in the `main` method is an array hence the `args` should be changed to `args[]`.

QUESTION 10:

Which of the following is TRUE about `print()` and `println()` methods?

a. **`print()` prints in a single line only and multiple lines cannot be printed in any way.**
b. **`println()` prints and then appends a line break.**
c. **`println()` prints in a single line only and multiple lines cannot be printed.**
d. **`print()` prints and then appends a line break.**

Correct Answer:

b. **`println()` prints and then appends a line break.**

Detailed Solution:

Method print() can be used to print in a single line only but multiple lines can be printed using escape sequence '\n'. Similarly, println() prints in a single line only and multiple lines can be printed using escape sequence '\n'. Method print() prints but does not appends a line break. So, option (b) println() prints and then appends a line break is the only correct option.