Garbage Collection

1. Find Output

Which of the following is a garbage collection technique?

a) Cleanup model

b) Mark and sweep model

c) Space management model

d) Sweep model

Output

Answer: b
Explanation: A mark and sweep garbage collection consists of two phases, the mark phase and the sweep phase. I mark phase all the objects reachable by java threads, native handles and other root sources are marked alive and others are garbage. In sweep phase, the heap is traversed to find gaps between live objects and the gaps are marked free list used for allocating memory to new objects.

2. Find Output

```
public class Test
{
   public static void main(String[] args) throws InterruptedException
   {
      Test t1 = new Test();
      Test t2 = new Test();
      t1 = null;
      System.gc();
      t2 = null;
   }
   protected void finalize() throws Throwable
   {
      System.out.println("Garbage collector called");
   }
}
```

Output

a) Garbage collector called
b) Garbage collector called Garbage collector called
c) Compilation error
d) Runtime error

Ans: a

3. Find Output

```
public class Test
{
   public static void main(String[] args) throws InterruptedException
   {
      Test t1 = new Test();
      Test t2 = new Test();
      t1 = null;
      System.gc();
      t2 = null;
   }
   protected void finalize() throws Object
   {
      System.out.println("Garbage collector called");
   }
}
```

Output

a) Garbage collector called
b) Garbage collector called Garbage collector called
c) Compilation error
d) Runtime error

Ans: c

4. Find Output

```
public class Test
{
   public static void main(String[] args) throws InterruptedException
   {
      String str = new String("java");
      str = null;
      System.gc();
      System.out.println("end of main");
   }

   @Override
   protected void finalize()
   {
      System.out.println("finalize method called");
   }
}
```

Output

a) end of main
b) finalize method called end of main
c) java end of main
d) Compilation error

Ans: a

Explanation : We know that finalize() method is called by Garbage Collector on an object before destroying it. But here, the trick is that the str is String class object, not the Test class. Therefore, finalize() method of String class(if overridden in String class) is called on str. If a class doesn't override finalize method, then by default Object class finalize() method is called.

5. Find Output

How many objects are eligible for garbage collection after execution of line 5 ?

```
public class Test
{
   public static void main(String[] args)
   {
      // How many objects are eligible for
      // garbage collection after this line?
      m1();  // Line 5
   }

   static void m1()
   {
      Test t1 = new Test();
      Test t2 = new Test();
   }
}
```

Output

a) 2
b) 1
c) 3
d) 0

Ans: a

Since t1 and t2 are local objects of m1() method, so they become eligible for garbage collection after complete execution of method unless any of them is returned.

6. Find Output

Which class “throws” by finalize() method

a) Throwable
b) Object
c) Exception
d) Error

Output

Ans) a

7. Find Output

In which class finalize() method is presented

a) Object
b) Throwable
c) Exception
d) System

Output

Ans) a

8. Find Output

Which of the following statements are true?

1) The garbage collection algorithm in Java is vendor implemented

2) The size of primitives is platform dependent

3) The default type for a numerical literal with decimal component is a float.

4) You can modify the value in an Instance of the Integer class with the setValue method

Output

Ans: 1

Find Output

Output