Predict the output of following Java Programs.

**Program 1**

|  |
| --- |
| // filename Main.java  class Test {      protected int x, y;  }    class Main {      public static void main(String args[]) {          Test t = new Test();          System.out.println(t.x + " " + t.y);      }  } |

**Program 2**

|  |
| --- |
| // filename Test.java  class Test {      public static void main(String[] args) {          for(int i = 0; 1; i++) {              System.out.println("Hello");              break;          }      }  } |

**Program 3**

|  |
| --- |
| // filename Main.java  class Main {      public static void main(String args[]) {          System.out.println(fun());      }      int fun() {          return 20;      }  } |

**Program 4**

|  |
| --- |
| // filename Test.java  class Test {     public static void main(String args[]) {         System.out.println(fun());     }     static int fun() {         static int x= 0;         return ++x;     }  } |

Program 5

|  |
| --- |
| public class RuntimePolymorphism  {      public static void main(String[] args)      {          A a = new B();          B b = new B();            System.out.println(a.c + " " + a.getValue()              + " " + b.getValue() + " " + b.getSuperValue());      }  }    class A  {      protected char c = 'A';      char getValue()      {          return c;      }  }    class B extends A  {      protected char c = 'B';      char getValue()      {          return c;      }      char getSuperValue()      {          return super.c;      }  } |

**Program 6 :**

|  |
| --- |
| public class RuntimePolymorphism  {      public static void main(String[] args)      {          A a = new B();          B b = new B();          System.out.println(a.c + " " + a.getValue() +              " " + b.getValue() + " " + b.getSuperValue());      }  }    class A  {      protected char c = 'A';      char getValue()      {          return c;      }  }  class B extends A  {      protected char c = 'B';      char getSuperValue()      {          return super.c;      }  } |

**Program 7 :**

|  |
| --- |
| class test  {      public static int y = 0;  }    class HasStatic  {      private static int x = 100;        public static void main(String[] args)      {          HasStatic hs1 = new HasStatic();          hs1.x++;            HasStatic hs2 = new HasStatic();          hs2.x++;            hs1 = new HasStatic();          hs1.x++;            HasStatic.x++;          System.out.println("Adding to 100, x = " + x);            test t1 = new test();          t1.y++;            test t2 = new test();          t2.y++;            t1 = new test();          t1.y++;            System.out.print("Adding to 0, ");          System.out.println("y = " + t1.y + " " + t2.y + " " + test.y);      }  } |

**Program 8 :**

|  |
| --- |
| public class Except  {      public static void main(String[] args)      {          try          {              throw new Error();          }          catch (Error e)          {              try              {                  throw new RuntimeException();              }              catch (Throwable t)              {                }          }              System.out.println("phew");      }  } |

Program 9 :

|  |
| --- |
| public class Test implements Runnable  {      public void run()      {          System.out.printf("GFG ");          System.out.printf("Geeks ");      }      public static void main(String[] args)      {          Test obj = new Test();          Thread thread = new Thread(obj);            thread.start();          System.out.printf("Geeks ");          try          {              thread.join();          }          catch (InterruptedException e)          {              e.printStackTrace();          }          System.out.println("for ");      }  } |

a) GFG Geeks Geeks for  
b) Geeks GFG Geeks for  
c) Either a or b  
d) Both a and b together

**10) What is the output of the following program?**

|  |
| --- |
| public class Test implements Runnable  {      public void run()      {          System.out.printf("GFG ");      }      public static void main(String[] args) throws InterruptedException      {          Thread thread1 = new Thread(new Test());          thread1.start();          thread1.start();          System.out.println(thread1.getState());      }  } |

a) GFG GFG TERMINATED  
b) GFG TERMINATED  
c) Compilation Error  
d) Runtime Error

**11) What is the output of the following program?**

|  |
| --- |
| public class Test extends Thread implements Runnable  {      public void run()      {          System.out.printf("GFG ");      }      public static void main(String[] args) throws InterruptedException      {          Test obj = new Test();          obj.run();          obj.start();      }  } |

a) Runtime error  
b) Compilation error  
c) GFG GFG  
d) None of the above  
**Ans.**(c)  
**12) What is the output of the following program?**

|  |
| --- |
| class myThread implements Runnable  {      public void run()      {          Test.obj.notify();      }  }    public class Test implements Runnable  {      public static Test obj;      private int data;      public Test()      {          data = 10;      }      public void run()      {          obj = new Test();          obj.wait();          obj.data += 20;            System.out.println(obj.data);      }      public static void main(String[] args) throws InterruptedException      {          Thread thread1 = new Thread(new Test());          Thread thread2 = new Thread(new myThread());            thread1.start();          thread2.start();            System.out.printf(" GFG - ");      }  } |

a) 30 GFG –  
b) GFG – 30  
c) GFG –  
d) Compilation error