Emertxe Information Technologies (P) Ltd.

Evaluation Question Paper

Subject: Core Java Programming

Duration: 3 hours	***Max. Marks:*** 100

To be filled by candidate

Name: _____

Login ID: _____

Date: _____

To be filled by Emertxe

Score Chart

S No	***Topic***	***MM***	***SM***
1	Section A - Multiple choice (25)	25	
2	Section B – Subjective (7)	35	
3	Section C – Programs (5)	40	
4	Total Marks	100	

Points to Note:

1) *Answer in the question paper itself for multiple choice and questions for which space is given. Otherwise use extra sheets and clearly mark the question numbers.*
2) *For Multiple choice circle the correct answer or tick on the left side of the answer*
3) *Plan your time well so as to attempt all questions.*
4) *Keep the answer sheets neat. Use rough sheets for workout.*
5) *There is no negative marking. No question is optional.*
6) *Staple the sheets together in order*

Good luck!!

Section A (25 Questions. 1 marks each)

1. What is the meaning of the return data type void?

   a) An empty memory space is returned so that the developers can utilize it.
   b) void returns no data type.
   c) void is not supported in Java
   d) None of the above

2. A lower precision can be assigned to a higher precision value in Java. For example a byte type data can be assigned to int type.

   a) True
   b) False

3. Which of the following statements about the Java language is true?

   a) Both procedural and OOP are supported in Java.
   b) Java supports only procedural approach towards programming.
   c) Java supports only OOP approach.
   d) None of the above.

4. Which methods can access to private attributes of a class?

   a) Only Static methods of the same class
   b) Only instances of the same class
   c) Only methods those defined in the same class
   d) Only classes available in the same package.

5. What is an aggregate object?

   a) An object with only primitive attributes
   b) An instance of a class which has only static methods
   c) An instance which has other objects
   d) None of the above

6. A class can have many methods with the same name as long as the number of parameters or type of parameters is different. This OOP concept is known as

   a) Method Invocating

   b) Method Overriding

   c) Method Labeling

   d) Method Overloading

7. Which collection class allows you to grow or shrink its size and provides indexed access to its elements, but whose methods are not synchronized?

   a) java.util.HashSet

   b) java.util.LinkedHashSet

   c) java.util.List

   d) java.util.ArrayList

8. Which is valid declaration of a float?

   a) float f = 1F;

   b) float f = 1.0;

   c) float f = "1";

   d) float f = 1.0d;

9. Which statement is true for the class java.util.HashSet?

   a) The elements in the collection are ordered.

   b) The collection is guaranteed to be immutable.

   c) The elements in the collection are guaranteed to be unique.

   d) The elements in the collection are accessed using a unique key.

10. What will be the output of the program?

```
public class Test
{
 private static int[] x;
  public static void main(String[] args)
 {
```

```
    System.out.println(x[0]);
  }
}
```

a) 0
b) null
c) Compile Error
d) NullPointerException at runtime

11. What will be the output of the program?

```
TreeSet map = new TreeSet();
map.add("one");
map.add("two");
map.add("three");
map.add("four");
map.add("one");
Iterator it = map.iterator();
while (it.hasNext() )
{
   System.out.print( it.next() + " " );
}
```

a) one two three four
b) four three two one
c) four one three two
d) one two three four one

12. Which two of the following methods are defined in class Thread?

1. start()
2. wait()
3. notify()
4. run()
5. terminate()

Choose answer:

a) 1 and 4
b) 2 and 3
c) 3 and 4
d) 2 and 4

13. Choose the correct option for the given program:

```
public class MyRunnable implements Runnable
{
        public void run()
        {
           // some code here
        }
 }
```

which of these will create and start this thread?

a) new Runnable(MyRunnable).start();
b) new Thread(MyRunnable).run();
c) new Thread(new MyRunnable()).start();
d) new MyRunnable().start();

14. Which statement is true?

a) The notifyAll() method must be called from a synchronized context.
b) To call wait(), an object must own the lock on the thread.

c) The notify() method is defined in class java.lang.Thread.

d) The notify() method causes a thread to immediately release its locks.

15. What will be the output of the program?

```
public class Test
{
 public static void main(String[] args)
 {
    int x = 0;
    assert (x > 0) ? "assertion failed" : "assertion passed" ;
    System.out.println("finished");
  }
}
```

a) finished

b) Compiliation fails.

c) An AssertionError is thrown and finished is output.

d) An AssertionError is thrown with the message "assertion failed."

16. What will be the output of the program?

```
public class RTExcept
{
 public static void throwit ()
 {
    System.out.print("throwit ");
     throw new RuntimeException();
  }
  public static void main(String [] args)
  {
    try
   {
      System.out.print("hello ");
```

```
    throwit();
  }
  catch (Exception re )
  {
    System.out.print("caught ");
  }
  finally
  {
    System.out.print("finally ");
  }
  System.out.println("after ");
 }
}
```

a) hello throwit caught

b) Compilation fails

c) hello throwit RuntimeException caught after

d) hello throwit caught finally after

17. When is the Float object, created in line 3, eligible for garbage collection?

```
public Object m() /* Line 1 */
{   /* Line 2 */
    Object o = new Float(3.14F); /* Line 3 */
    Object [] oa = new Object[l]; /* Line 4 */
    oa[0] = o; /* Line 5 */
    o = null;  /* Line 6 */
    oa[0] = null; /* Line 7 */
    return o; /* Line 8 */
}
```

a) just after line 5

b) just after line 6

c) just after line 7

d) just after line 8

18. What allows the programmer to destroy an object x?

a) x.delete()

b) x.finalize()

c) Runtime.getRuntime().gc()

d) Only the garbage collection system can destroy an object.

19. For the given class Test, what is the prototype of the default constructor?
public class Test { }

a) Test( )

b) Test(void)

c) public Test( )

d) public Test(void)

20. Which of the following statements is true:

a) Java doesn't support inheritance

b) Java supports multiple inheritance

c) Java supports interfaces

d) Java supports polymorphism

e) c and d

21. Consider the following method:

```
public void myfunc()
{
static int a = 20;
System.out.println(a++);
}
```

The value printed by the myfunc() method during its 2nd invocation is:

a) 20;

b) 21

c) 22

d) 19

e) None of the Above

22. What will the main method of the following Java class E print?

```
class C {
        public int x = 1;
        public C(int i) { x += i; }
}
class D extends C {
        public D(int i) { super(i); x += i; }
}
class E {
        public static void main(String argv[]) {
        C ar[] = new C[2];
        ar[0] = new C(1);
        ar[1] = new D(2);
        System.out.println(ar[0].x + ar[1].x);
        }
```

}

a) 2

b) 3

c) 5

d) 7

e) this program will not compile

23. What keyword is used in Java to define a constant?

a) static

b) final

c) abstract

d) public

e) private

24. What will be the output of the program?

```
class A
{
    final public int GetResult(int a, int b) { return 0; }
}
class B extends A
{
    public int GetResult(int a, int b) {return 1; }
}
public class Test
{
    public static void main(String args[])
    {
        B b = new B();
        System.out.println("x = " + b.GetResult(0, 1));
    }
}
```

a) x = 0

b) x = 1
c) Compilation fails.
d) An exception is thrown at runtime.

25. What will be the output of the program?

```
public class CommandArgs
{
    public static void main(String [] args)
    {
        String s1 = args[1];
        String s2 = args[2];
        String s3 = args[3];
        String s4 = args[4];
        System.out.print(" args[2] = " + s2);
    }
}
```

and the command-line invocation is

> *java CommandArgs 1 2 3 4*

a) args[2] = 2
b) args[2] = 3
c) args[2] = null
d) An exception is thrown at runtime.

Section B (7 Questions. 5 marks each)

1. What is Inheritance? Explain different types of inheritance
2. Give explanation for modifers in java
3. Describe the difference between abstract and interface?
4. Explain serialization and deserialization with an suitable example
5. Explain about Collection frame-work in java?
6. What is the difference between overloading and overrinding. Explain with a program.
7. What is JDBC. How do you connect to a database and execute a query.

Section C (5 Questions, 40 Marks)

1. Integers are stored in an array intNumbers[ ]. Write a Java application that determines and prints the number of odd, even and zero values in the array.

Marks: 7

2. Write a program to create a try block statement which will generate three types of exception and implement catch block statements to catch and handle them.

Marks: 5

3. Write a program in java using HashMap or TreeSet which should retrive both key-value pair using Iterator interface.

Marks: 8

4. Implement an abstract class named Person and two subclasses named Student and Employee in Java.

   A person has a name, address, phone number and e-mail

   address. A student has a class status (freshman, sophomore, junior or senior). Define the status as a constant. An employee has an office, salary and date-hired.

   Implement the above classes in Java. Provide Constructors for classes to initialize

   private variables. Override the toString method in each class to display the class

   name and the person's name.

   Write an application to create objects of type Student

   and Employee and print the person's name and the class name of the objects.

Marks: 10

5. What is the need of synchronization? Explain with an example how synchronization is implementated in Java

Marks: 10