Page No.
Date

Assignment 4

Interview question

Q.1 What is the role of the Static Keyword in the context of Memory Management.

⇒ - Static Keyword is non-access modifier, It is also called as class level variable
- The static keyword is used for a constant variable or method it is same for every instace of a class.
- we can access non static members inside static method. using instance.

Q.2 Can static methods be overloaded and overridden in Java? How static variables shared across multiple instances of a class?

⇒ Yes, we can overloaded Static method but cannot Overridden.
- Static variables shared across multiple instances of a class because they belong to the class itself, no any specific object.

Q.3 What is the Significance of the final keyword in Java?

⇒ - final is non-access modifier used for classes, attribute and methods
- when a variable declared as a final, its value cannot be changed, it has been initialized.

eg. final int a = 100;

a = 200 ⇒ compilation error occur bcoz its value cannot be changed.

Page No.
Date

Q. 4 What are narrowing and widening conversions in java?

⇒ • Narrowing ⇒

- It is also called as explicit casting.
- Narrowing conversion means convert a large data type to a smaller data type.

double → float → long → int → short → byte.
int → char

• Widening Conversion

- It is also called as implicit casting.
- Convert small data type to a larger data type.

byte → short → int → long → float → double
char → int.

Q. 5 Provide examples of narrowing & widening conversions between primitive data types.

⇒ • example of narrowing conversion

```
class Narrowing
{
    public static void main (String [] args)
    {
        double d = 88.8;
        int i = (int) d;
        Short s = (short) i;
        System.out.println ("Integer:" + i);
        System.out.println ("Short:" + s);
    }
```

- Example of widening Conversion.

```
class widening
{
    public static void main (String [] args)
    {
        int i = 208;
        long l = i;
        double d = l;
        System.out.println("long :" + l);
        System.out.println("double :" + d);
    }
}
```

Q.6 How does Java handle potential loss of precision during narrowing conversions?

⇒ - Java does not automatically perform narrowing conversions, it forces to explicitly cast the larger type to smaller type, ensuring that the programmer is aware of the potential data loss.

Q.7 Explain the concept of automatic widening conversion in java.

⇒ - Automatic widening conversion in java refers to the process where java compiler automatically converts a smaller primitive data type into a large one during methods calls.
- This conversion is safe and no data is lost.
- In that process smaller type is widened to fit into the larger type.

Q 8 What are the implications of narrowing and widening conversions on type compatibility and data loss?

⟹ - widening conversion is safe, there is no data loss.

- Convert a Smaller primitive data type to larger one the larger type can accommodate all possible values of the Smaller type.
- widening conversions are automatically handled the java compiler, So smaller types (int, byte etc) can be assigned to larger types (eg. long, double).

- In narrowing conversion occured data loss, convert large primitive data type to a Smaller one, this conversion is not implicit