

## \* Assignment No 04 \*

1) What is role of static keyword in Java? Diff. between static and non-static methods.

→ Static keyword is mainly used for memory management. It is used to share same variable/method of given class. It is used for constant variable/method that is same for every instance of class. It specifies the particular scope of variables & how shared.

2) Can static method be overloaded / overridden in Java? How static variables shared across multiple instances of a class.

→ Yes it is possible to overload the static method in Java. Static variables have only one copy in the memory, even if there are multiple instances of class.

3) Significance of final keyword.

→ If we declare any variable with final word, we cannot change its value. It makes particular entity immutable.

4) What is narrowing & widening conversion

— Widening :- when we assign value of smaller data type to a bigger data type. (automatic)

Narrowing :- when we want to assign <sup>implicit</sup> value of large data type to smaller data type, we perform it explicitly, called narrowing.

5) Concept of automatic widening conversion in Java, also called as implicit casting, or widening. is automatic conversion of smaller primitive data type to larger primitive data type. Java compiler performs this automatically without any explicit instructions.

6) What are implications of narrowing & widening conversions on type compatibility & data loss?  
— widening conversion keeps the source value but can change its representation.  
Narrowing can cause loss or misinterpreted data if value of wider type is outside the range of narrower type. To avoid it we must manually check the ranges of