

Assignment - 6

① what is method overloading in java & explain it with example &

→ Method overriding in java means same name same parameter of method but present in different classes. it is used to provide specific implementation of a method which is already provided by its superclass. method overriding is runtime polymorphism.

e.g.

```
class A {  
    public void bike ()  
    {  
        s.o.pln ("Yamaha");  
    }  
}  
class B {  
    public void bike ()  
    {  
        s.o.pln ("Yamaha");  
    }  
}  
  
public class Main  
{  
    p.s.v.m (String args [])  
    {  
        A ob = new A ();  
        B ob1 = new B ();  
        A.bike ();  
        B.bike ();  
    }  
}
```

② what are rules for method overloading resolution in java? How does java determine which overloaded method to call?

\* method overloading is the method which have same method name same return type but definitely have diff. parameter list. So it is called method overloading. it is call compile time polymorphism.

e.g.

```
class Avehicle
{
    String name; int model;
    public void bike (String name)
    {
        this.name = name;
    }
    public void bike (int model)
    {
        this.model = model;
    }
}
```

```
public class Main
```

```
{
    p.s.v.m (String args [])
    {
        vehicle ob = new vehicle ();
        ob.bike ("Yamaha");
        ob.bike (215);
    }
}
```



③ what does static keyword means & explain diff. bet<sup>n</sup> static and non-static

→ static is used when we don't want to create object when we are using static keyword then we don't have to create the object of class to call that class.

And inside static class static members are only used if we define non-static inside static class so it will give us compile time error

static

① for calling static class we don't have to create object of it

② only static field can involved in static class else give compile time error

non-static

① ~~to~~ for calling non-static we have to create object of it.

② both static & non-static variable & field can be called in class.

④ Can static methods can be overloaded & overridden in java & how are static variable shared across multiple instances of class?

→ In java static methods can be overloaded but not overridden. They can have different parameters while having the same name in the same class or subclasses. They cannot be overridden because they act on the class itself not an object. static variable will be considered as global variable which will be accessible in class if want to use it and we change value of static variable from main() class also so there is no



need of to go to class & change the value of variable particularly.

⑤ what is role of static keyword in context of memory management.

→ The static keyword in java mainly used for memory management. the static keyword in java is used to share the same variable or method of a given class. The user can apply static keywords with variables, methods, blocks and nested classes. The static keyword belong to class than instance of class, it can be called without creating the instance of class. static variables are shared among of all instances, reducing amount of memory required.

⑥ what is significance of final keyword in java?

→ In java final keyword is used to indicate that variable, method or class cannot be modified or extended. here are some of its characteristics: Final variables: when a variable is declared as final, its value cannot be changed once it has been initialized. when we declare final keyword using variable so that value cannot be modified otherwise it gives an error.

⑦ can a final method be overridden in a subclass? how does the final keyword affect variable, methods, and classes in java?

→ final method cannot be override or

overload becoz it is ~~unchar~~ immutable and also cannot inherit so it will be lost as it has been instantiated at the beginning.

⑧ what does keyword present in java?  
how is this keyword represent in java?  
→ In java programming language a keyword is any one of 68 reserved words that have a predefined meaning in the language. Because of this programmers cannot use keyword in some contexts, such as names for variables, methods, classes or as any other identifier.

List of Java keywords :-

- ① abstract :- java abstract keyword is used to declare an abstract class. An abstract class can provide the implementation of the interface.
- ② boolean :- used to declare a variable of a boolean type.
- ③ break :- break keyword is used to break the loop or switch statement.

This keyword :- This keyword refers to current object in a method or constructor. The most common use of this keyword is to eliminate the confusion bet<sup>n</sup> class attributes and parameters with the same name.



Q9) what is narrowing & widening in conversion in java?

\* Narrowing :- Conversion of a higher datatype to lower one is called narrowing type casting. It is also known as explicit conversion or casting up. It is done manually by the programmer. If we do not perform casting the compiler reports a compile-time error.

widening :- Conversion of lower one datatype to higher one is called widening type casting. It is also known as implicit conversion. It is done manually or automatically. If we do not cast gives error.

Q10) provide example of narrowing and widening between primitive datatype

→

Example of widening conversion.

```
byte b = 118;  
int c = int b;
```

Example of narrowing conversion.

```
int c = 170;  
byte b = (byte) c;
```

Q] how does java handle potential loss of precision during narrowing conversion?  
→ explicit type casting also known as narrowing conversion occurs when you convert a larger data type to smaller datatype. This type of casting requires a manual operation using the target data type in parantheses. Since there is a possibility of data loss java requires you to explicitly specify this conversion.