Ans 5.

A reference is like a pointer to memory. When an object is created from a class, Java allocates memory which is required to store the object.

A reference is an address that indicates where an object's variables and methods are stored in the memory.

For Example:

Student s = new Student();

Here ‘**s’** is a variable of Student type which will hold the memory address where Student Object will be stored in memory.

**Strong Reference:**This is the default type of Reference. The object is garbage collected by java when the strong reference variable assigned to the object points to null.

For Example:

Student s = new Student();

Here ‘**s’** is a strong reference variable assigned to Student object. The reference **‘s’** will not be garbage collected until it points to null.

**Weak Reference:** This reference is explicitly created. It is created with the help of **WeakReference** class present in lang package of Java. If the Object is assigned to WeakReference variable then it can be Garbage Collected by java.

**Soft Reference:** The object is not garbage collected by java until there is any actual need of memory required by JVM. Object gets cleared from memory once the JVM runs Out of Memory. It is created with the help of **SoftReference** class present in lang package of Java.

**Phantom Reference:** These references can be for Garbage Collected by Java but before removing from memory the object is placed into a reference queue by JVM. It is created with the help of **PhantomReference** class present in lang package of Java.