

Q.8)

Class loader →

- Loads class files into memory. It is responsible for finding & loading class files from file system, network & other sources & then converting them into binary form.



In Garbage collection process, collector scans different parts of heap, looking for objects that are no longer in use. If an object no longer has references to it from anywhere in application, the collector removes object, freeing up memory in the heap. This process continues till all unused objects are successfully reclaimed.

To ensure garbage collector work efficiently, JVM separates heap into parts & then collector use mark-and-sweep algorithm to traverse these parts & clear out unused objects.

How it works:-

- These are two phases: Mark & then Sweep
- When object is created in heap, it has mark bit that is set to 0 (false).
- During mark phase collector traverse object trees starting at their roots.
- When object root is reachable, mark bit set to 1 (true).
- mark bit for unreachable objects is changed.
- During sweep, collector traverse heap, & free memory from all items with mark bit 0 (false).