## Java

**1. Difference Between**

i) (a == b)

and

ii) a.equals (b)

Suppose a and b are String

variables:

(a == b)

. This compares references.

. It checks whether a and b

point to the point of the exact

same object in memory.

Example:-

String S1 = "Hello";

String S2 = "Hello";

System.out.println(s1 == s2);

Bati

String S3 = new String ("Hello");

- System. out. Print ln (S1 == S3);

ii) a. equals (b)

- This compares the contents.

- It checks whether the text
  inside the strings is the same

Example:

String S1 = "Hello";

String S3 = new String ("Hello");

System. out. print ln (S1. equals (S

ii) why are Java String

Immutable?

Immutable means: Once a string is created. It cannot be changed.

(2)(i) Security:

(1) Strings often store sensitive dat (Password, file paths).
• If strings were mutable, malicious code could change their content.

(ii) String Pool (memory optimizatio)
• Java maintains a pool of strings to save memory.
• If strings coold be changed this pool would not be

safe, because one to chake would
affect all pet terness.

(iii) thread safety
i) Immutable. objects are
automatically safe to use
across multiple threads.

(iv) cachine hashcode
Because the string can
never change, its hashcode()
is cached for fast lookup.