

1) What is Preempting ?

Ans The act of taking Control of Cpu by Operating system from One task and giving it to another task is called preempting.

2) What is Process ?

Ans A process has a self-contained execution environment, a process generally has a complete, private set of basic run time resources. In particular each process has its own memory Space.

3) What is thread ?

Thread are sometimes called lightWeight process. Both processes and thread provide an execution environment, but creating a new thread requires fewer resources than creating a new process.

4) Process Vs Thread ?

Ans → Processes Can't Share its memory and other resources. But Thread can share processes & memory.

2) Two Processes can communicate with each other using environment variable while thread exist with in a process.

5) Multithreading Vs Multiprocessing

1) Multithreading refers to an application with multiple thread running with in a process while,

Multiprocessing is the execution of one or more processes by multiple processors inside one computer.

2) Multithreading allows two parts of the same program to run concurrently.

OS execute multiple processes multiple processes concurrently using time slicing system.

6) Why Thread is called light weight?

Ans Thread are light weight because they can share their allocated resources like memory, open file, open connections etc.

7) How Many Ways are there to Create a thread?

Ans There are two ways to creating a thread
i.e.

- 1) By Using SubClass i.e Thread class
- 2) By Implementing Runnable Interface,

8) What is Thread & SubClass?

Ans You can Create a SubClass of Thread and Over-
ride run(). The run() will ~~be~~ executed
when thread is started using start().

9) What is Runnable Interface?

Ans Runnable interface is a ^{functional} ~~Marker~~ Interface that
contains only one abstract method i.e Run().
method. Runnable object is wrapped into
thread object and then executed.

10) What is Scheduling?

Ans Thread Scheduling is a mechanism to determine
how running threads are allocated.

to CPU time.

Is it two type

1) Preemptive Scheduling .

Ans → The thread scheduler passes a running thread and executes other thread as per schedule.

2) Non-preemptive Scheduling :-

Ans → This Thread Scheduling never interrupt the Current or running thread. Other thread will get chance Only if Current thread is die.

ii) What is Starvation ?

Ans A non-Preemptive scheduler may cause Starvation

Runnable thread which are in Ready Queue may have to wait this concept is called Starvation

12) What is Native thread?

Ans

Native threads are the threads those are created by JVM and scheduled by Operating System.

13) What is Green Thread?

Ans

Green threads are the threads those are created by JVM and also scheduled by JVM.

14) What is Selfish Thread?

Ans

Selfish thread is non-preemptive thread. This thread once started will not release processor until their operation are finished. This may cause livelock situation.

15) What is Synchronization?

Ans

Synchronization is the capability to control the access of shared resources by concurrent multiple threads at a same time.

16) Types of Synchronization ?

Ans Two types of Synchronization :-

- 1) Block Synchronization - Used to synchronize statements.
- 2) Method Synchronization - Used to synchronize methods.

17) What is Deadlock ?

Ans Two or more threads waiting for each other to release the lock forever is called deadlock.

18) What is Racing Condition in threads ?

Ans When multiple threads try to access same resources at the same time and order of accessing the resource is important is called racing condition.

With the help of Synchronize Block or Synchronize Method we resolve the race condition.

14) What is time Slicing?

Ans Time Slicing is the ~~per~~ period of time allocated for a processor to run the preemptive scheduling system. After each time slice the scheduler searches for next process to run. This process is called Time Slicing.

20) Wait(), notify() & notifyAll() ?

Ans Thread can communicate each other using wait(), notify() & notifyAll().

This Methods are final in `java.lang.Object` class.

21) Difference b/w notify() & notifyAll() ?

Ans `notify()` :- Wake up the first thread that called `wait()` on the same object.

`notifyAll()` :- Wake up all the threads that called `wait()` on same object.

22) Wait() V/s Join() ?

Ans Wait() :- wait() method tells the calling thread to release the lock and go to waiting state until some other thread enters in the same monitor & calls notify().

Join() :- Method Join() tells the calling thread to does not release the lock but goes into waiting state for joint thread to execute first after that it acquires same lock and continue processing.

23) Yield v/s Sleep ?

Ans Yield() :- this method pauses currently executing thread & gives chance to the next waiting thread of the same priority to execute.

Sleep() :- It will sleep currently executing thread of for given millisecond & nano seconds.

24) What is Monitor?

Ans Monitor is a lock that makes sequential access of an object or class.

It is of two type :-

- 1) One for Synchronized Static method, called class monitor
- 2) Second for Synchronized Instance method, called object monitor

25) How two thread can communicate each other?

Ans With the help of Shared memory area

26) How two process can communicate each other?

Ans with the help of environment variable.

27) What is priority thread?

Ans In Java each thread has a priority that helps to the operating system to determine the order in which thread are scheduled.

28) What is the range of priority?

Ans The range of priority is between 1 - 10, 1 is a minimum priority and 10 is a maximum priority and 5 is a normal priority and normal priority is a default priority.

1) MIN-PRIORITY = 1

2) MAX-PRIORITY = 10

3) NORM-PRIORITY = 5

29) How can you change or retrieve priority of thread?

Ans A thread priority can be changed by SetPriority() and retrieved by GetPriority().

30) How do you create background thread?

Ans - With the help of Daemon thread we can create the background thread.

- Daemon threads are background Supporting thread like garbage collector.

31) What is Daemon Thread and how it is Created?

- Ans - Daemon thread core Service provider for other thread running in the same process as the non daemon thread.
- Daemon thread can be created by calling SetDaemon(true) method
 - IsDaemon() is used to determine if the thread is Daemon or not.

32) What is thread Group?

- Ans - Thread group is a convenient way to manage group of thread as a Unit.
- It exists in Java.lang.ThreadGroup package

33) What is livelock?

- Ans It is a situation in which two or more processes continuously change their state in response to changes in the other process without doing any useful work.

34) Types of preemptive scheduling

Ans 1) Round Robin scheduling

2) Priority scheduling

3) Time Slice

4) Shortest Remaining Time First (SRTF).

25) Types of Non-preemptive scheduling

Ans 1) Shortest Job First (SJF)

2) Priority (Non preemptive Version).

3) FCFS (First Come First Serve)

36) Difference b/w preemptive scheduling and Non-preemptive scheduling

Ans 1) In Preemptive scheduling, a process can be interrupted by some high priority process while in Non preemptive scheduling no interruption by other processor is allowed.

- 2) Preemptive Scheduling is flexible in nature whereas non-preemptive scheduling is rigid in nature.
- 3) In preemptive Scheduling, the Utilization of CPU is more. whereas in non-Preemptive Scheduling, the Utilization of CPU is less.

37) What Scheduling Used in Java?

Ans Priority Scheduling Used in Java and in Priority scheduling Java Support Preemptive scheduling.

38 Why we create two types of thread?

Ans Because Java does not Support Multiple inheritance.

39) What is time slice?

Ans timeSlice is a per period of time allowed for a process to own in the preemptive Scheduling System.

40) What is Multithreading ?

Ans Multithreading can be executed Concurrently with in a process is called Multithreading.

41) What is Multiprocessing ?

Ans Multiprocessing is the execution of one or more processes by Multiprocessor inside one Computer.

42) Why daemon thread have higher priority than Normal thread ?

Ans Because it is a background thread and it starts first than other thread run.

43) What is Co-operative thread ?

Ans Green thread is Co-operative thread.