Chapter 5 Important Points

This is a summary of the parts of Chapter 5 that you should understand and be able to explain.

1. Abstract model of process as sequence of CPU bursts and I/O bursts; properties of processes in these terms.

2. CPU scheduler:

    (a) definition
    (b) when it is invoked
    (c) pre-emptive vs non-pre-emptive

3. Dispatcher; dispatch latency

4. CPU scheduling criteria

5. CPU scheduling algorithms: for each one should be able to determine the **Gantt chart** of a set of processes, the shortcomings and advantages.

    (a) FCFS
        i. convoy effect
    (b) Shortest Job First (SJF)
        i. exponential averaging
    (c) Shortest Remaining Time First (SRTF)
    (d) Round Robin (RR) with various quanta
    (e) Priority Scheduling
        i. starvation, aging

6. Multilevel queues/Priority queues

7. Multilevel feedback queues

8. Thread Scheduling

    (a) Difference between process and system contention scopes
    (b) Multiprocessor scheduling of threads : common queue versus per-core queues, pros and cons
    (c) Multithreaded cores - how are threads scheduled
    (d) Load balancing, push and pull migration and problems with per-core queue scheduling
    (e) Processor affinity - soft versus hard