

Operating Systems– Homework for Lectures 1, 2 and 3:

Please submit answers as **hardcopy** in **handwritten**.

Lecture 1

- Q1\ Draw the diagram of the Computer System Components
- Q2\ Draw the diagram for Operating System Services
- Q3\ List only the Operating System Functions
- Q4\ Draw the diagram of System Call – OS Relationship.
- Q5\ Draw a typical Single-Task OS Memory Map
- Q6\ Draw a typical Multi-Task OS Memory Map
- Q7\ Draw the diagram for Computer Startup Operation

Lecture 2

- Q1\ Draw the diagram of the process parts in memory
- Q2\ Draw the Diagram of Process States
- Q3\ Draw the Diagram of Process Scheduling Queues Diagram
- Q4\ Draw the diagram of inter-processes communications models
- Q5\ Draw the diagram for Multithreaded Server Architecture Example
- Q6\ Draw a diagram shows the difference between parallelism and concurrency.
- Q7\ Using Amdahl's Law, calculate the speed up factor for moving from single processor to five processors with an algorithm that has %80 parallel part.
- Q8\ Using Amdahl's Law, calculate the speed up factor for moving from single processor to ten processors with an algorithm that has %40 serial part.

Lecture 3

- Q1\ Draw the diagram of Scheduling Criteria – in Time Axis
- Q2\ List only the Six CPU Scheduling Algorithms.
- Q3\ For below Processes table, calculate the average waiting time for the algorithms:
 - A) First Come First Serve (FCFS)
 - B) Shortest Job First (SJF) and
 - C) Priority Scheduling

Process	Burst Time	Priority
P1	10	4
P2	4	7
P3	7	2
P4	18	6
P5	5	5
P6	4	8
P7	9	1
P8	13	3

- Q4\ Draw the typical diagram for Multilevel Queue Scheduling
- Q5\ For Multiple-Processor Systems DRAW the diagram for Single Scheduler Multiprocessing and Symmetrical Schedule multiprocessing
- Q6\ For Symmetrical Schedule multiprocessing DRAW the diagram for Global Queue and Per CPU Queue.