

# CSE321 Quiz 2

Marks: 10      Time: 20 min

ID:	Name:	Section:
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1. **Define** parallelism and concurrency. Shortly describe their difference. **[3]**
  2. In a high-performance computing environment, a team is optimizing a scientific simulation program used for climate modeling. They have identified a critical computational kernel responsible for solving complex equations that govern atmospheric dynamics. Through profiling, they discover that only **20%** of this kernel's execution time is parallelizable, while the remaining **80%** must be executed serially due to inherent dependencies in the calculations. If the team manages to enhance the parallelizable portion to run **six times** faster, **calculate** the overall speedup they can achieve. **[2]**
  3. The processes below are scheduled using Round Robin scheduling algorithm with time quantum=4. **Draw** the Gantt chart and **calculate** the average turnaround time and average waiting time for each process. **[5]**

Process ID	Arrival Time	Brust Time
P1	0	6
P2	3	2
P3	4	9
P4	1	5
P5	5	3