# Question 1

### Part A

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| P1 | P1 | P1 | P3 | P3 | P3 | P3 | P4 | P4 | P4 | P4 | P4 | P5 | P5 | P5 | P5 | P5 | P5 | P5 | P2 | P2 | P2 | P2 | P2 | P2 | P2 | P2 |

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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

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| P1 | P3 | P4 | P5 | P2 |

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3 7 12 19 27

### Part B

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| Process | AT | BT | CT | TAT | WT |

| P1 | 0 | 3 | 3 | 3 | 0 |

| P2 | 1 | 8 | 27 | 26 | 18 |

| P3 | 2 | 4 | 7 | 5 | 1 |

| P4 | 3 | 5 | 12 | 9 | 4 |

| P5 | 4 | 7 | 19 | 15 | 8 |

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### Part C

Average waiting time = (0 + 18 + 1 + 4 + 8) / 5 = 31 / 5 = 6.2

Average turnaround time = (3 + 26 + 5 + 9 + 15) / 5 = 58 / 5 = 11.6

# Question 2

Preemptive scheduling is a scheduling algorithm where a higher priority task can interrupt a lower priority task which is currently being executed, but non-preemptive scheduling is a scheduling algorithm where a higher priority task cannot interrupt a lower priority task that is currently being executed. Instead, the higher priority task must wait until the lower priority task is completed before it can be executed.

# Question 3

In preemptive SJF scheduling the executing process can be interrupted in the middle of execution if a process with a shorter burst time arrives, while in non-preemptive SJF scheduling the executing process is not interrupted and continues until completion.

# Question 4

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| Process | AT | BT |

| P1 | 8 | 3 |

| P2 | 4 | 1 |

| P3 | 9 | 2 |

| P4 | 5 | 4 |

| P5 | 2 | 2 |

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| Process | AT | BT |

| P2 | 4 | 1 |

| P5 | 2 | 2 |

| P3 | 9 | 2 |

| P1 | 8 | 3 |

| P4 | 5 | 4 |

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| Process | AT | BT | WT |

| P2 | 4 | 1 | 0 |

| P5 | 2 | 2 | 4 |

| P3 | 9 | 2 | 6 |

| P1 | 8 | 3 | 15 |

| P4 | 5 | 4 | 20 |

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Average Waiting Time = (0 + 4 + 6 + 15 + 20) / 5 = 45 / 5 = 9