idle

| P₁ | P₂ | P₃ | P₄ | P₅ | | P₆ | P₇ |

2   5   7   8   12   14 15   21   29

avg waiting time $= \dfrac{0+1+2+1+3+0+5}{7} = \dfrac{12}{7}$

turnaround time: $P_1 \to 5-2=3$ / $P_2 \to 7-4=3$ / $P_3 \to 8-5=3$

$P_4 \to 12-7=5$ / $P_5 \to 14-9=5$ / $P_6 \to 21-15=6$ / $P_7 \to 29-16=13$

throughput $= \dfrac{\text{num of processes}}{\text{Max(completion)} - \text{Min(Arrival time)}} = \dfrac{7}{29-2} = \dfrac{7}{27}$

idle

| P₁ | P₃ | P₂ | P₄ | P₅ | | P₆ | P₇ |

2   5   6   8   12   14 15   21   29
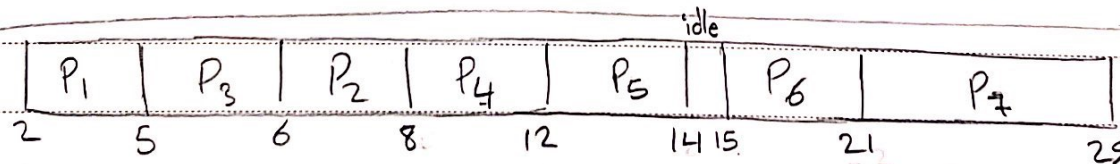
avg waiting time: $\dfrac{0+0+2+1+3+0+5}{7} = \dfrac{11}{7}$

turnaround time: $P_1 \to 3$ / $P_2 \to 4$ / $P_3 \to 1$ / $P_4 \to 5$ / $P_5 \to 5$ / $P_6 \to 6$

$P_7 \to 13$

throughput $= \dfrac{7}{27}$

PAPCO

Scanned with CamScanner

ج) avg waiting time : ب < الف
turn around time : P_2: الف < ب {P_3: الف} > ب   فقط P_3, P_2 تغییر می‌کند
throughput : ب = الف

د)

idle

P_1	P_3	P_2	P_4	P_5	P_4		P_6	P_7

2   5   6   8   9   11   14 15   21   29
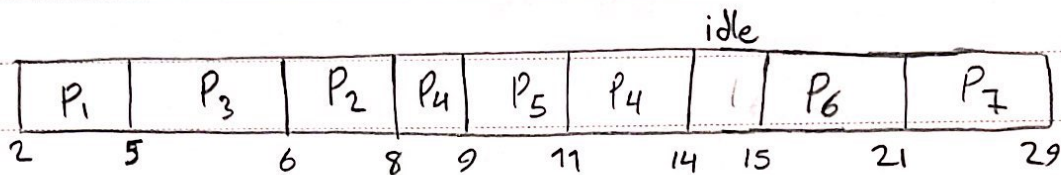
avg waiting time : $\dfrac{0+0+2+4+0+0+5}{7} = \dfrac{11}{7}$

turnaround time : $P_1 \to 3$ / $P_2 \to 4$ / $P_3 \to 7$ / $P_4 \to 7$ / $P_5 \to 2$
$P_6 \to 6$ / $P_7 \to 13$

throughput : $\dfrac{7}{29-2} = \dfrac{7}{27}$

ه) avg waiting time : ب = د
turn around time : P_4: ب < د , P_5: ب > د
throughput : ب = د