

ROUND ROBIN (RR) - NON-PRE-EMPTIVE

* BY USING ROUND ROBIN THROUGH THE READY-QUEUE
CPU UTIL. IN US FOR MAXIMUM OF QUANTUM TIME

PROCESS	ARRIVAL TIME	EXEC ₁	I/O ₁	EXEC ₂	I/O ₂	EXEC ₃
A	0✓	4✓	4✓	4✓	4✓	4
B	2✓	8✓	1✓	8	/	/
C	3✓	2✓	1✓	2✓	/	/
D	7✓	1✓	1✓	1✓	1✓	1✓

QUANTUM = 3

	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	28	29	30	31	32	33	34	35	36	37		
TIME																																								
RQ				B	A	A	A	A		D	D	D	C	B	B	A	A	D	D	D	B	A	A	A	D	B					B	B	B	A	A					
				C	C	C	B	B	B	C	C	C	B	A	A	D	D			B	B	A		D	D	B														
								D	D							D																								

$$\text{CPU UTILIZATION} = \frac{35}{35} = 100\%$$

$$\text{THROUGHPUT} = \frac{4}{35} = 0.11$$

$$\text{TAT}_A = 35 - 0 = 35$$

$$\text{TAT}_B = 34 - 2 = 32$$

$$\text{TAT}_C = 15 - 3 = 12$$

$$\text{TAT}_D = 26 - 7 = 19$$

$$\text{TAT}_{\text{AVERAGE}} = \frac{35 + 32 + 12 + 19}{4} = \frac{98}{4} = 24.5$$

$$\text{WAIT TIME}_A = 5 + 4 + 4 + 2 = 15$$

$$\text{WAIT TIME}_B = 1 + 3 + 3 + 3 + 2 + 3 = 15$$

$$\text{WAIT TIME}_C = 3 + 4 = 7$$

$$\text{WAIT TIME}_D = 5 + 6 + 3 = 14$$

$$\text{RESPONSE TIME}_A = 0$$

$$\text{RESPONSE TIME}_B = 1$$

$$\text{RESPONSE TIME}_C = 3$$

$$\text{RESPONSE TIME}_D = 5$$

$$\text{RESPONSE TIME AVERAGE} = \frac{0 + 1 + 3 + 5}{4} = \frac{9}{4} = 2.25$$