

Assignment 5

U21546216

Scott Bebington

Task 1

- 1.1) C
- 1.2) A
- 1.3) D
- 1.4) C
- 1.5) B

Task 2

2.1)

Round Robin Scheduling process		
Job	Arrival time	Run time
A	0	11
B	0	7
C	0	5
D	0	9
E	0	13

Run time	
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wait time	
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	TAT (m)
Job A	42
Job B	31
Job C	23
Job D	38
Job E	45
Total	179
Average TAT	35,8

Time (m)	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	30-31	31-32	32-33	33-34	34-35	35-36	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45
Job A															
Job B															
Job C															
Job D															
Job E															

Average TAT = (42 + 31 + 23 + 38 + 45)/5 = 35.8 mins

2.2)

Round Robin Scheduling process			
Job	Arrival time	Run time	Priority
A	0	11	6
B	0	7	3
C	0	5	7
D	0	9	4
E	0	13	9

Run time	
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wait time	
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	TAT (m)
Job A	27
Job B	7
Job C	32
Job D	16
Job E	45
Total	127
Average TAT	25,4

Time (m)	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	30-31	31-32	32-33	33-34	34-35	35-36	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45
Job A															
Job B															
Job C															
Job D															
Job E															

Average TAT = (27 + 7 + 32 + 16 + 45) / 5 = 25.4 min

2.3)

Round Robin Scheduling process		
Job	Arrival time	Run time
A	0	11
B	0	7
C	0	5
D	0	9
E	0	13

Run time	
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wait time	
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	TAT (m)
Job A	32
Job B	12
Job C	5
Job D	21
Job E	45
Total	115
Average TAT	23

Time (m)	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30
Job A															
Job B															
Job C															
Job D															
Job E															

Time - cont	30-31	31-32	32-33	33-34	34-35	35-36	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45
Job A															
Job B															
Job C															
Job D															
Job E															

Average TAT = $(32 + 12 + 5 + 21 + 45) / 5 = 23\text{mins}$

Task 3

3.1) 4.8 milliseconds

3.2) 2.4 milliseconds

Task 4

4.1)

FIFO – First In First Out

Tracks in order: 1000, 740, 1150, 940, 1200, 1850, 1145, 555, 1775, 1695

Track Number	Tracks Traversed	Current Position
1000	$ 1197 - 1000 = 197$	1000
740	$ 1000 - 740 = 260$	740
1150	$ 740 - 1150 = 410$	1150
940	$ 1150 - 940 = 210$	940
1200	$ 940 - 1200 = 260$	1200
1850	$ 1200 - 1850 = 650$	1850
1145	$ 1850 - 1145 = 705$	1145
555	$ 1145 - 555 = 590$	555
1775	$ 555 - 1775 = 1220$	1775
1695	$ 1775 - 1695 = 80$	1695
Total tracks Traversed: 4582		

4.2)

SSTF – Shortest Service Time First

Tracks in order: 1200, 1150, 1145, 1000, 940, 740, 555, 1695, 1775, 1850

Track Number	Tracks Traversed	Current Position
1200	$ 1197 - 1200 = 3$	1200
1150	$ 1200 - 1150 = 50$	1150
1145	$ 1150 - 1145 = 5$	1145
1000	$ 1145 - 1000 = 145$	1000
940	$ 1000 - 940 = 60$	940
740	$ 940 - 740 = 200$	740
555	$ 740 - 555 = 185$	555
1695	$ 555 - 1695 = 1140$	1695
1775	$ 1695 - 1775 = 80$	1775
1850	$ 1775 - 1850 = 75$	1850
Total tracks Traversed: 1937		

4.3)

SCAN

Tracks in order: 1200, 1695, 1775, 1850, 1150, 1145, 1000, 940, 740, 555

Track Number	Tracks Traversed	Current Position
1200	$ 1197 - 1200 = 3$	1200
1695	$ 1200 - 1695 = 495$	1695
1775	$ 1695 - 1775 = 80$	1775
1850	$ 1775 - 1850 = 75$	1850
1150	$ 1850 - 1150 = 700$	1150
1145	$ 1150 - 1145 = 5$	1145
1000	$ 1145 - 1000 = 145$	1000
940	$ 1000 - 940 = 60$	940
740	$ 940 - 740 = 200$	740
555	$ 740 - 555 = 185$	555
Total tracks Traversed: 1942		

4.4)

C – SCAN

Tracks in order: 1200, 1695, 1775, 1850, 555, 740, 940, 1000, 1145, 1150

Track Number	Tracks Traversed	Current Position
1200	$ 1197 - 1200 = 3$	1200
1695	$ 1200 - 1695 = 495$	1695
1775	$ 1695 - 1775 = 80$	1775
1850	$ 1775 - 1850 = 75$	1850
555	$ 1850 - 555 = 1295$	555
740	$ 555 - 740 = 185$	740
940	$ 740 - 940 = 200$	940
1000	$ 940 - 1000 = 60$	1000
1145	$ 1000 - 1145 = 145$	1145
1150	$ 1145 - 1150 = 5$	1150
Total tracks Traversed: 2537		