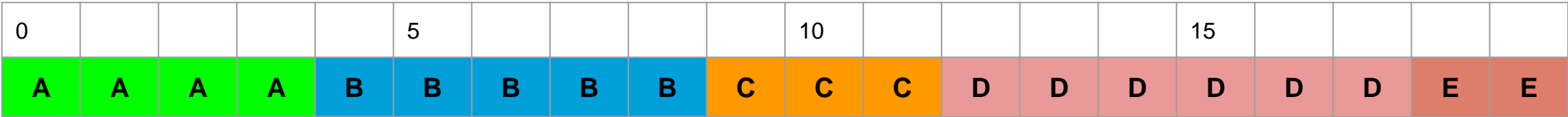# PROCESS SCHEDULING - NON PRE-EMPTIVE

FIRST COME FIRST SERVED (FCFS) - 10 mins

Complete the following Gantt chart and the table using the details of the processes given below

PROCESS	ARRIVAL TIME	SERVICE TIME
A	0	4
B	3	5
C	4	3
D	6	6
E	8	2

PROCESS	ARRIVAL TIME (Ta)	SERVICE TIME (Ts)	COMPLETION TIME (Tc)	TURNAROUND TIME (Tr)	Tr/Ts
A	0	4	4	4	1.00
B	3	5	9	6	1.20
C	4	3	12	8	2.67
D	6	6	18	12	2.00
E	8	2	20	12	6.00
Mean		**4**		**8.4**	**2.57**

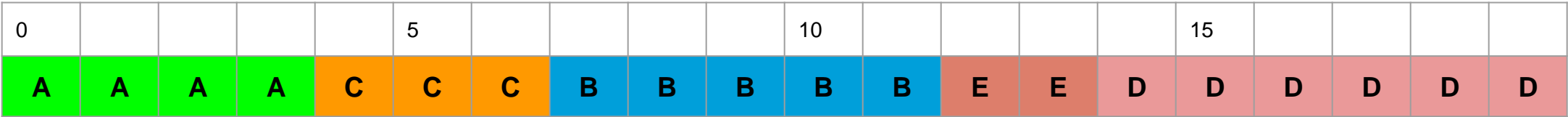| 0				5					10					15				
A	A	A	A	B	B	B	B	B	C	C	C	D	D	D	D	D	D	E	E

PROCESS SCHEDULING - NON PRE-EMPTIVE

SHORTEST JOB FIRST (SJF) - 10 mins

Complete the following Gantt chart and the table using the details of the processes given below

PROCESS	ARRIVAL TIME	SERVICE TIME
A	0	4
B	3	5
C	4	3
D	6	6
E	8	2

PROCESS	ARRIVAL TIME (Ta)	SERVICE TIME (Ts)	COMPLETION TIME (Tc)	TURNAROUND TIME (Tr)	Tr/Ts
A	0	4	4	4	1.00
B	3	5	12	9	1.80
C	4	3	7	3	1.00
D	6	6	20	14	2.33
E	8	2	14	6	3.00
Mean		**4**		**7.2**	**1.83**

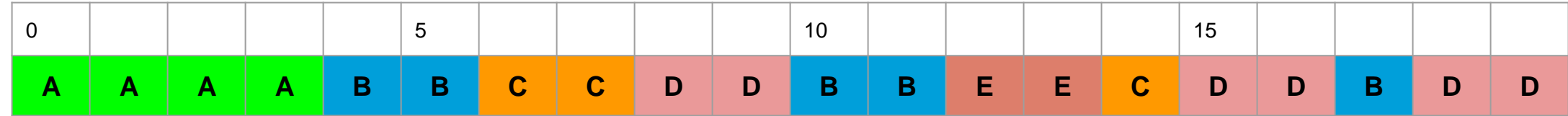| 0					5						10						15				
A	A	A	A	C	C	C	B	B	B	B	B	E	E	D	D	D	D	D	D

PROCESS SCHEDULING - PRE-EMPTIVE

ROUND ROBIN (RR WITH Q=2) - 15 mins
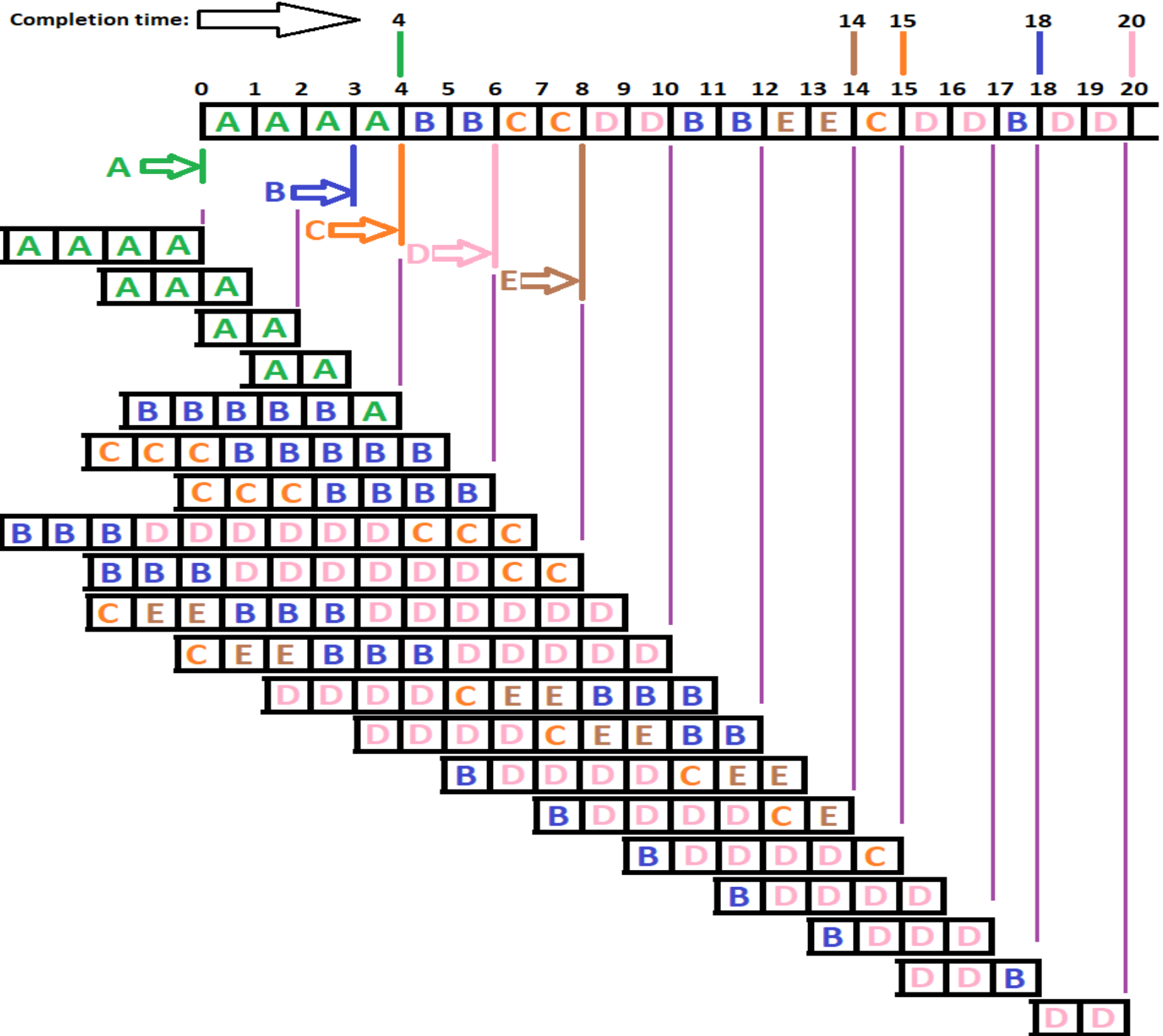
Complete the following Gantt chart and the table using the details of the processes given below

PROCESS	ARRIVAL TIME	SERVICE TIME
A	0	4
B	3	5
C	4	3
D	6	6
E	8	2

PROCESS	ARRIVAL TIME (Ta)	SERVICE TIME (Ts)	COMPLETION TIME (Tc)	TURNAROUND TIME (Tr)	Tr/Ts
A	0	4	4	4	1.00
B	3	5	18	15	3.00
C	4	3	15	11	3.67
D	6	6	20	14	2.33
E	8	2	14	6	3.00
Mean		4		10	2.60

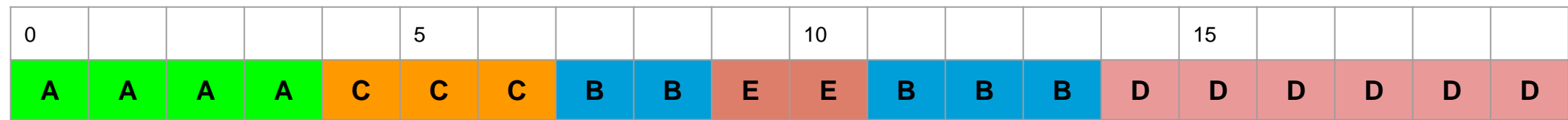| 0				5					10					15				
A	A	A	A	B	B	C	C	D	D	B	B	E	E	C	D	D	B	D	D

PROCESS SCHEDULING - PRE-EMPTIVE
SHORTEST REMAINING TIME NEXT (SRTN WITH Q=2) - 10 mins

Complete the following Gantt chart and the table using the details of the processes given below

PROCESS	ARRIVAL TIME	SERVICE TIME
A	0	4
B	3	5
C	4	3
D	6	6
E	8	2

PROCESS	ARRIVAL TIME (Ta)	SERVICE TIME (Ts)	COMPLETION TIME (Tc)	TURNAROUND TIME (Tr)	Tr/Ts
A	0	4	4	4	1.00
B	3	5	14	11	2.20
C	4	3	7	3	1.00
D	6	6	20	14	2.33
E	8	2	11	3	1.50
Mean		**4**		**7**	**1.61**

0					5					10					15					
A	A	A	A	C	C	C	B	B	E	E	B	B	B	D	D	D	D	D	D

PROCESS SCHEDULING

COMPARISON

PROCESS	ARRIVAL TIME	SERVICE TIME
A	0	4
B	3	5
C	4	3
D	6	6
E	8	2

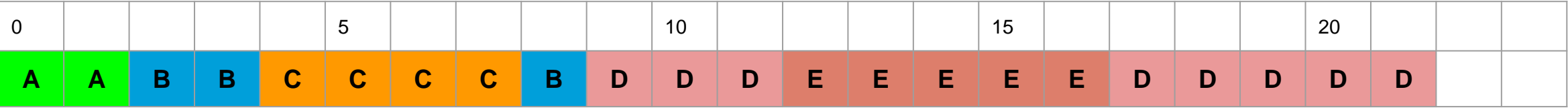| ALGORITHM	MEAN TURNAROUND TIME	MEAN Tr/Ts
FCFS	8.4	2.57
SJF	7.2	1.83
RR q=2	10	2.6
SRTN	7	1.61

MONASH University

REAL-TIME SCHEDULING

EARLIEST DEADLINE FIRST - 15 mins

Complete the following Gantt chart and the table using the details of the processes given below

PROCESS	ARRIVAL TIME	SERVICE TIME	DEADLINE
A	0	2	4
B	1	3	11
C	4	4	10
D	7	8	24
E	12	5	18

PROCESS	ARRIVAL TIME (Ta)	SERVICE TIME (Ts)	DEADLINE (Td)	COMPLETION TIME (Tc)	TURNAROUND TIME (Tr)	Tr/Ts
A	0	2	4	2	2	1.00
B	1	3	11	9	8	2.67
C	4	4	10	8	4	1.00
D	7	8	24	22	15	1.88
E	12	5	18	17	5	1.00
Mean		**4**			**6.8**	**1.51**

0					5					10					15					20				
A	A	B	B	C	C	C	C	B	D	D	D	E	E	E	E	E	D	D	D	D	D			

REAL-TIME SCHEDULING

EARLIEST DEADLINE FIRST - 15 mins

PROCESS	ARRIVAL TIME	SERVICE TIME	DEADLINE
A	0	2	4
B	1	3	11
C	4	4	10
D	7	8	24
E	12	5	18