**Nhóm 2:**

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**Bài 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| T1=0 | T2=9 | T3=15 | T4=17 | T5=21 | T=26 | T=30 |
| P1 (9) \* | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) |
|  | P2(6) \* | P2(0) | P2(0) | P2(0) | P2(0) | P2(0) |
|  |  | P3(2) \* | P3(0) | P3(0) | P3(0) | P3(0) |
|  |  |  | P4(4) \* | P4(0) | P4(0) | P4(0) |
|  |  |  |  | P5(5) \* | P5(0) | P5(0) |
|  |  |  |  |  | P6(4) \* | P6(0) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| P1 | P2 | P3 | P4 | P5 | P6 |

0 9 15 17 21 26 30

Thời gian chờ

P1=0

P2=9

P3=15

P4=17

P5=21

P6=26

Thời gian chờ trung bình TB: (0+9+15+17+21+26)/6=14,666667

**Bài 2**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T=0 | 2 | 3 | 5 | 6 | 7 | 8 | 9 | 12 | 16 | 22 | 29 |
| P1(6)\* | P1(4)\* | P1(3)\* | P1(1)\* | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) |
|  |  |  | P2(7) | P2(7) | P2(7) | P2(7) | P2(7) | P2(7) | P2(7) | P2(7)\* | P2(0) |
|  | P3(3) | P3(3) | P3(3) | P3(3)\* | P3(2)\* | P3(1)\* | P3(0) | P3(0) | P3(0) | P3(0) | P3(0) |
|  |  |  |  |  | P4(6) | P4(6) | P4(6) | P4(6) | P4(6)\* | P4(0) | P4(0) |
|  |  |  |  |  |  | P5(4) | P5(4) | P5(4)\* | P5(0) | P5(0) | P5(0) |
|  |  | P6(3) | P6(3) | P6(3) | P6(3) | P6(3) | P6(3)\* | P6(0) | P6(0) | P6(0) | P6(0) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| P1 | P3 | P6 | P5 | P4 | P2 |

0 6 9 12 16 22 29

Thời gian chờ:

P1:0

P2: 22 – 5 = 17

P3: 6 – 2 = 4

P4: 16 – 7 = 9

P5: 12 – 8 = 4

P6: 9 – 3 = 6

Thời gian chờ trung bình: (0+17+4+9+4+6)/6=6,666667

**Bài 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T=0 | | 1 | | 3 | | 4 | | 6 | | 7 | | 10 | | 15 | | 21 | 27 | |
| P1(7)\* | | P1(6) | | P1(6) | | P1(6) | | P1(6) | | P1(6) | | P1(6) | | P1(6)\* | | P1(0) | P1(0) | |
|  | |  | |  | | P2(6) | | P2(6) | | P2(6) | | P2(6) | | P2(6) | | P2(6)\* | P2(0) | |
|  | |  | | P3(1)\* | | P3(0) | | P3(0) | | P3(0) | | P3(0) | | P3(0) | | P3(0) | P3(0) | |
|  | |  | |  | |  | |  | | P4(5) | | P4(5)\* | | P4(0) | | P4(0) | P4(0) | |
|  | |  | |  | |  | | P5(4)\* | | P5(3)\* | | P5(0) | | P5(0) | | P5(0) | P5(0) | |
|  | | P6(4)\* | | P6(2) | | P6(2)\* | | P6(0) | | P6(0) | | P6(0) | | P6(0) | | P6(0) | P6(0) | |
| P1 | | P6 | | P3 | | P6 | | P5 | | P4 | | P1 | | P2 | | |

0 1 3 4 6 10 15 21 27

Thời gian chờ:

P1 = 0 + (15 – 1 ) = 14

P2 = 21 – 4 = 17

P3 = 3 – 3 = 0

P4 = 10 – 7 = 3

P5 = 6 – 6 = 0

P6 = (1 – 1) + (4 - 3) = 1

Thoi gian cho TB : (14 + 17 + 0 + 3 + 0 + 1) / 6 = 5,8333333

**Bài 4**

Quantum = 6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T=0 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 |
| P1(12)\* | P1(6) | P1(6) | P1(6) | P1(6) | P1(6) | P1(6)\* | P1(0) | P1(0) | P1(0) |
|  | P2(19)\* | P2(13) | P2(13) | P2(13) | P2(13) | P2(13) | P2(13)\* | P2(7) | P2(7) |
|  |  | P3(15)\* | P3(9) | P3(9) | P3(9) | P3(9) | P3(9) | P3(9)\* | P3(3) |
|  |  |  | P4(25)\* | P4(19) | P4(19) | P4(19) | P4(19) | P4(19) | P4(19)\* |
|  |  |  |  | P5(9)\* | P5(3) | P5(3) | P5(3) | P5(3) | P5(3) |
|  |  |  |  |  | P6(13)\* | P6(7) | P6(7) | P6(7) | P6(7) |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T = 60 | 63 | 69 | 75 | 78 | 84 | 85 | 86 | 92 | 93 |
| P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) | P1(0) |
| P2(7) | P2(7) | P2(7)\* | P2(1) | P2(1) | P2(1) | P2(1)\* | P2(0) | P2(0) | P2(0) |
| P3(3) | P3(3) | P3(3) | P3(3)\* | P3(0) | P3(0) | P3(0) | P3(0) | P3(0) | P3(0) |
| P4(13) | P4(13) | P4(13) | P4(13) | P4(13)\* | P4(7) | P4(7) | P4(7)\* | P4(1)\* | P4(0) |
| P5(3)\* | P5(0) | P5(0) | P5(0) | P5(0) | P5(0) | P5(0) | P5(0) | P5(0) | P5(0) |
| P6(7) | P6(7)\* | P6(1) | P6(1) | P6(1) | P6(1)\* | P6(0) | P6(0) | P6(0) | P6(0) |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P1 | P2 | P3 | P4 | P5 | P6 | P1 | P2 | P3 | P4 |

0 6 12 18 24 30 36 42 48 54 60

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P5 | P6 | P2 | P3 | P4 | P6 | P2 | P4 | P4 |

60 63 69 75 78 84 85 86 92 93

Thời gian chờ:

P1 = 0 + 36 – 6 = 30

P2 = 6 + (42 – 12) + (69 - 48) + (85 - 75) = 67

P3 = 12 + (48 - 18) + (75 - 54) = 63

P4= 18 + (54 – 24) + (78 - 60) + (86 - 84) = 68

P5= 24 + (60 - 30) = 54

P6= 30 + (63 - 36) + (84 - 69) = 72

Thời gian chờ TB: (30 + 67 + 63 +68 + 54 + 72)/6 = 59

**Bài 5:**

Quantum = 4

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| T=0 | 4 | 8 | 12 | 16 | 20 | 24 |
| P1(25)\* | P1(21) | P1(21) | P1(21) | P1(21) | P1(21) | P1(21)\* |
|  | P2(18)\* | P2(14) | P2(14) | P2(14) | P2(14) | P2(14) |
|  |  | P3(20)\* | P3(16) | P3(16) | P3(16) | P3(16) |
|  |  |  | P4(6)\* | P4(2) | P4(2) | P4(2) |
|  |  |  |  | P5(15)\* | P5(11) | P5(11) |
|  |  |  |  |  | P6(27)\* | P6(23) |

Quantum = 8

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| T=32 | 40 | 48 | 50 | 58 | 66 |
| P1(13) | P1(13) | P1(13) | P1(13) | P1(13) | P1(13)\* |
| P2(14)\* | P2(6) | P2(6) | P2(6) | P2(6) | P2(6) |
| P3(16) | P3(16)\* | P3(8) | P3(8) | P3(8) | P3(8) |
| P4(2) | P4(2) | P4(2)\* | P4(0) | P4(0) | P4(0) |
| P5(11) | P5(11) | P5(11) | P5(11)\* | P5(3) | P5(3) |
| P6(23) | P6(23) | P6(23) | P6(23) | P6(23)\* | P6(15) |

FCFS :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| T=79 | 85 | 93 | 96 | 111 |
| P1(0) | P1(0) | P1(0) | P1(0) | P1(0) |
| P2(6)\* | P2(0) | P2(0) | P2(0) | P2(0) |
| P3(8) | P3(8)\* | P3(0) | P3(0) | P3(0) |
| P4(0) | P4(0) | P4(0) | P4(0) | P4(0) |
| P5(3) | P5(3) | P5(3)\* | P5(0) | P5(0) |
| P6(15) | P6(15) | P6(15) | P6(15)\* | P6(0) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P1 | P2 | P3 | P4 | P5 | P6 | P1 | P2 | P3 | P4 | P5 | P6 | P1 | P2 | P3 | P5 | P6 |

0 4 8 12 16 20 24 32 40 48 50 58 66 79 85 93 96 111

Thời gian chờ:

P1=0 + (24 - 4) + (66 - 32) = 54

P2= 4 + (32 - 8) + (79 - 40) = 67

P3= 8 + (40 - 12) + (85 - 48) = 73

P4= 12 + (48 - 16) = 44

P5= 16 + (50 – 20) + (93 - 58) = 81

P6= 20 + (58 - 24) + (96 - 66) = 84

Thời gian chờ trung bình: (54 + 67 + 73 + 44 + 81 + 84) / 6 = 67,16666667