

$$T_1(P:5, E:2.5, D:5)$$

$$T_2(P:15, E:4.5, D:15)$$

$$T_3(P:20, E:3.5, D:20)$$

U_{rm}

$$U = \frac{\sum e}{H} = \frac{12(2.5) + 4(4.5) + 3(3.5)}{60} = 0.975$$

$$3(2^{\frac{1}{3}} - 1) = 0.77$$

$U > U_{rm} \Rightarrow \text{not feasible}$

Time demand analysis

Task 1

$$w(1) = 2.5 + 0 = 2.5$$

$$w(2) = 2.5 + 0 = 2.5$$

$$w(3) = 2.5 + 0 = 2.5$$

$$w(4) = 2.5 + 0 = 2.5$$

$$w(5) = 2.5 + 0 = 2.5 \rightarrow w(5) < D \text{ so Task 1 is schedulable}$$

Task 2

$$w(1) = 4.5 + (1/5) \times 2.5 = 7$$

$$w(2) = 4.5 + (2/5) \times 2.5 = 7$$

$$w(3) = 4.5 + (3/5) \times 2.5 = 7$$

$$w(4) = 4.5 + (4/5) \times 2.5 = 7$$

$$w(5) = 4.5 + (5/5) \times 2.5 = 7$$

$$w(6) = 4.5 + (6/5) \times 2.5 = 9.5$$

$$w(7) = 4.5 + (7/5) \times 2.5 = 9.5$$

$$w(8) = 4.5 + (8/5) \times 2.5 = 9.5$$

$$w(9) = 4.5 + (9/5) \times 2.5 = 9.5$$

$$w(10) = 4.5 + (10/5) \times 2.5 = 9.5$$

$w(10) < D \rightarrow \text{Task 2 is schedulable}$

Task 3

$$\begin{aligned}w(1) &= 3.5 + (1/5) \times 2.5 + (1/5) \times 4.5 = 10.5 \\w(2) &= 3.5 + (2/5) \times 2.5 + (2/5) \times 4.5 = 10.5 \\w(3) &= 3.5 + (3/5) \times 2.5 + (3/5) \times 4.5 = 10.5 \\w(4) &= 3.5 + (4/5) \times 2.5 + (4/5) \times 4.5 = 10.5 \\w(5) &= 3.5 + (5/5) \times 2.5 + (5/5) \times 4.5 = 13 \\w(6) &= 3.5 + (6/5) \times 2.5 + (6/5) \times 4.5 = 13 \\w(7) &= 3.5 + (7/5) \times 2.5 + (7/5) \times 4.5 = 13 \\w(8) &= 3.5 + (8/5) \times 2.5 + (8/5) \times 4.5 = 13 \\w(9) &= 3.5 + (9/5) \times 2.5 + (9/5) \times 4.5 = 13 \\w(10) &= 3.5 + (10/5) \times 2.5 + (10/5) \times 4.5 = 13 \\w(11) &= 3.5 + (11/5) \times 2.5 + (11/5) \times 4.5 = 13.5 \\w(12) &= 3.5 + (12/5) \times 2.5 + (12/5) \times 4.5 = 15.5 \\w(13) &= 3.5 + (13/5) \times 2.5 + (13/5) \times 4.5 = 15.5 \\w(14) &= 3.5 + (14/5) \times 2.5 + (14/5) \times 4.5 = 15.5 \\w(15) &= 3.5 + (15/5) \times 2.5 + (15/5) \times 4.5 = 22.5 \\w(16) &= 3.5 + (16/5) \times 2.5 + (16/5) \times 4.5 = 22.5 \\w(17) &= 3.5 + (17/5) \times 2.5 + (17/5) \times 4.5 = 22.5 \\w(18) &= 3.5 + (18/5) \times 2.5 + (18/5) \times 4.5 = 22.5 \\w(19) &= 3.5 + (19/5) \times 2.5 + (19/5) \times 4.5 = 22.5 \\w(20) &= 3.5 + (20/5) \times 2.5 + (20/5) \times 4.5 = 22.5\end{aligned}$$

$w(20) > 0 \Rightarrow$ not scheduled