

Problem 5:

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Step 1:  $LC = \{1, 4, 5\}$ . t2 has three 1s, t3 has two 1s, and t6 has three 1s. Select t3.  $\text{minCov} = \{t3\}$

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Mark entities covered by t3.

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Step 2:  $LC = \{1, 5\}$ . t2 has three 1s and t6 has three 1s. Select t2,  $\text{minCov} = \{t3, t2\}$

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Mark entities covered by t2.

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Step 3: LC = {5}. Select t6, as t6 is the only that covers 5. minCov = {t3, t2, t6}

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Mark entities covered by t6.

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Step 4: LC = {2}. Select t1. minCov = {t3, t2, t6, t1}

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |

Mark entities covered by t1.

|    | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|
| t1 | 0 | 1 | 0 | 0 | 0 | 1 |
| t2 | 1 | 0 | 1 | 0 | 0 | 1 |
| t3 | 0 | 0 | 0 | 1 | 0 | 1 |
| t4 | 0 | 0 | 1 | 0 | 0 | 0 |
| t5 | 0 | 1 | 1 | 0 | 0 | 0 |
| t6 | 0 | 0 | 1 | 0 | 1 | 1 |