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. 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, 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 |