Лабораторная работа № 7 по КДМ

1. Генерация варианта

S = Лысенко А~~н~~т~~он~~ ~~Се~~рг~~ее~~вич

S = Л Ы С Е Н К О А Т Р Г В И Ч

N(Si) = 13 28 19 6 15 12 16 1 20 18 4 3 10 25

Y :

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i/j | 13 | 28 | 19 | 6 | 15 | 12 | 16 | 1 | 20 | 18 | 4 | 3 | 10 |
| 13 | 0 | -15 | -6 | 7 | -2 | 1 | -3 | 12 | -7 | -5 | 9 | 10 | 3 |
| 28 | 15 | 0 | 9 | 22 | 13 | 16 | 12 | 27 | 8 | 10 | 24 | 25 | 18 |
| 19 | 6 | -9 | 0 | 13 | 4 | 7 | 3 | 18 | -1 | 1 | 15 | 16 | 9 |
| 6 | -7 | -22 | -13 | 0 | -9 | -6 | -10 | 5 | -14 | -12 | 2 | 3 | -4 |
| 15 | 2 | -13 | -4 | -9 | 0 | 3 | -1 | 14 | -5 | -3 | 9 | 12 | 5 |
| 12 | -1 | -16 | -7 | 6 | -3 | 0 | -4 | 11 | -8 | -6 | 8 | 9 | 2 |
| 16 | 3 | -12 | -3 | 10 | 1 | 4 | 0 | 15 | -4 | -2 | 12 | 13 | 6 |
| 1 | -12 | -27 | -18 | -5 | -14 | -11 | -15 | 0 | -19 | -17 | -3 | -2 | -9 |
| 20 | 7 | -8 | 1 | 14 | 5 | 8 | 4 | 19 | 0 | 2 | 16 | 17 | 10 |
| 18 | 5 | -10 | -1 | 12 | 3 | 6 | 2 | 17 | -2 | 0 | 14 | 15 | 8 |
| 4 | -9 | -24 | -15 | -2 | -11 | -8 | -12 | 3 | -16 | -14 | 0 | 1 | -6 |
| 3 | -10 | -25 | -16 | -3 | -12 | -9 | -13 | 2 | -17 | -15 | -1 | 0 | -7 |
| 10 | -3 | -18 | -9 | 4 | -5 | -2 | -6 | 9 | -10 | -8 | 6 | 7 | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i/j | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 8 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 11 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 13 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

Граф G1 :

2 1 4 4

3 2

1

5

2

3

1 3 5

Граф G2 : 4 1

2 2 5

1

4

2

2

3

1

3 4 2

Первая нижняя оценка :

G1 – 132/ (132 – 2 \* 26) = 1,4 = 2;

G2 – 132/ (132 – 2 \* 24) = 1,4 = 2;

Хроматическое число и плотность графа или вторая нижняя оценка :

G1 - >= 2;

G2 - >= 2;

Хроматическое число и число независимости графа или третья нижняя оценка :

G1 – 13/7 = 1,8 = 2;

G2 – 13/6 = 2,1 = 3;

Верхние оценки хроматического числа :

G1 – 5 + 1 = 6;

G2 – 4 + 1 = 5;

1, 7, 10, 13 - 5;

4, 8, 11, 12 – 4;

2 – 6;

5, 3 – 3;

6, 9 – 2;

Хроматическое число равно 5, а хроматический индекс равен 5.

Хроматическое число и индекс получились равные, нижние оценки, менее подходят, чем верхние.