**Question1**

3.

|  |  |  |
| --- | --- | --- |
|  | Survive | Deceased |
| Highest correlation | Serum\_sodium  Serum\_creatinine | Serum\_sodium  Creatinine\_phosphokinase |
| Lowest correlation | Serum\_sodium  platelets | Serum\_sodium  platelets |

The results of lowest correlation are the same for both situations. However, the case for highest correlation is different.

|  |  |  |
| --- | --- | --- |
| For event = 0 | Weights | Loss function |
| Chart, scatter chart  Description automatically generated | [-0.02, 3.95] | 37.75 |
| Chart, scatter chart  Description automatically generated | [4.38e-4, -1.22, 8.60e+1] | 41.03 |
| Chart, scatter chart  Description automatically generated | [2.74e-4, -1.08e-1, 1.41e+1, -6.14e+2] | 36.32 |
| Chart, scatter chart  Description automatically generated | [-2.82, 15.09] | 37.64 |
| Chart, scatter chart  Description automatically generated | [-1.47, 7.34] | 38.93 |

**Question2** My BU ID is 1194, so I will do the Group 3.

|  |  |  |
| --- | --- | --- |
| For event = 1 | Weights | Loss function |
|  | [-0.01, 3.80] | 38.63 |
|  | [9.70e-3, -2.65, 1.83e+2] | 61.61 |
|  | [6.93e-3, -2.82, 3.82e+2, -1.72e+4] | 2607.9 |
|  | [-1.80, 10.98] | 38.58 |
|  | [-3.18, 16.15] | 22.58 |

**Question3**

|  |  |  |
| --- | --- | --- |
| Model | SSE(event = 0) | SSE(event = 1) |
| Linear  Quadratic  Cubic  Y = alogx + b  Logy = alogx + b | 37.75  41.03  36.32  37.64  38.93 | 38.63  61.61  2607.9  38.85  22.58 |

1.

Cubic is best for surviving patients.

Linear is best for deceased patients.

2.

Quadratic is the worst for surviving patients.

Cubic is the worst for deceased patients.