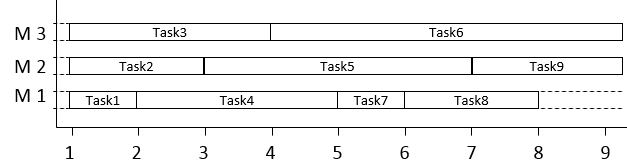
|  |  |  |
| --- | --- | --- |
|  | Name: Md. Habibur Rahman Rony  Student ID: 984582  Weekday: Week 3- Day 11(a) |  |

Answer to the Q. No. R-5.1:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | a:(12,4) | b:(10,6) | c:(8,5) | d:(11,7) | e:(14,3) | f:(7,1), | g:(9,6) |
| Weight | 4 | 6 | 5 | 7 | 3 | 1 | 6 |
| Benefit | 12 | 10 | 8 | 11 | 14 | 7 | 9 |
| **V/W** | **3** | **1.67** | **1.6** | **1.57** | **4.67** | **7** | **1.5** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | f | e | a | b | c | d | g |
| V/W | 7 | 4.67 | 3 | 1.67 | 1.6 | 1.57 | 1.5 |
| Weight Left | 18-1=17 | 17-3=14 | 14-4=10 | 10-6=4 | (4/5)\*8=6.4 |  |  |
| **Optimal Solution= {f,e,a,b,c}={**(7, 1), (14, 3), (12, 4), (10, 6), (6.40, 4)**}** | | | | | | | |
| **Total Weight = 49.4** | | | | | | | |

Answer to the Q. No. R-5.3:



Answer to the Q. No. R-5.11:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1(a) | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 2(b) | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| 3(c) | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 20 | 22 | 22 | 22 | 22 | 22 | 30 | 30 | 30 | 30 |
| 4(d) | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 20 | 22 | 23 | 23 | 23 | 23 | 30 | 31 | 33 | 33 |
| 5(e) | 0 | 0 | 0 | 14 | 14 | 14 | 14 | 26 | 26 | 26 | 26 | 26 | 34 | 36 | 37 | 37 | 37 | 37 | 44 |
| 6(f) | 0 | 7 | 7 | 14 | 21 | 21 | 21 | 26 | 33 | 33 | 33 | 33 | 34 | 41 | 43 | 44 | 44 | 44 | 44 |
| 7(g) | 0 | 7 | 7 | 14 | 21 | 21 | 21 | 26 | 33 | 33 | 33 | 33 | 34 | 41 | 43 | 44 | 44 | 44 | 44 |

Answer to the Q. No. R-5.12:

Here you can't split the widgets into partial part. That's why it is not fractional knapsack problem. So this is should be 0-1fractional problem.