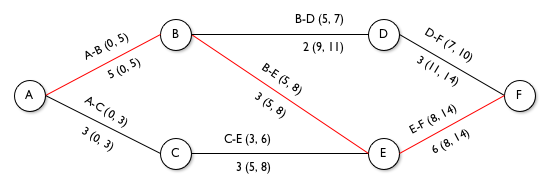
# 12-21

## a) PERT network based on given values with slack indicated.



## b) Weekly Manpower Plot

## c) Idle vs. Overtime (Hours)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Idle | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 |
| Overtime | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |

## d) Idle vs. Overtime (Costs)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Idle | $600 | $600 | $600 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,500 | $1,500 | $1,500 | $1,500 |
| OT | $0 | $0 | $0 | $0 | $0 | $2,700 | $450 | $900 | $0 | $0 | $0 | $0 | $0 | $0 |

## e) Calculations Revised for Slack

### Weekly Manpower Distribution

### Idle vs. Overtime (Hours) Considering Slack

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Idle | 2 | 2 | 2 | 0 | 0 | 0 | 3 | 3 | 5 | 1 | 1 | 0 | 0 | 0 |
| Overtime | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Idle vs. Overtime (Costs) Considering Slack

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Idle | $600 | $600 | $600 | $0 | $0 | $0 | $900 | $900 | $1,500 | $300 | $300 | $0 | $0 | $0 |
| OT | $0 | $0 | $0 | $0 | $0 | $900 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## f) Revised Answer at Full Duration

Under this specific situation I would not change my answers to parts d and e since the distribution of manpower seems optimal. In the more general case, however, there may be some economy in making better use of employee downtime.