FINAL EXAMINATION – February 5th, 2014

## name:

# Scheduling (7 points)

Consider the project with activities as represented in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Activity | Duration | Successors(Lead) | Resource Requirements | |
| Bulldozers | Scrapers |
| A | 5 | E, B | 3 |  |
| B | 6 | F, C |  | 4 |
| C | 7 | G, D | 4 |  |
| D | 8 | H |  | 4 |
| E | 6 | F | 4 |  |
| F | 6 | G |  | 2 |
| G | 6 | H(-2) | 2 |  |
| H | 8 | I, J |  | 2 |
| I | 4 | (Finish follows) | 4 |  |
| J | 3 | K(-2) | 4 |  |
| K | 2 | (Finish follows) | 2 |  |

Schedule the project assuming that, due to maintenance problems and the needs of other critical projects, you are limited to 4 Bulldozers and 4 Scrapers. How many days is the resulting scheduled duration?

# Monitoring (8 points)

Assume you are the contractor PM of a EPC project to develop a new manufacturing facility. The project, as described in the chart below, has budgeted cost totalling $21.4mln and 7-month scheduled duration. The contract provides for the contractor to be compensated a lump-sum $29.5mln firm fixed price. A penalty worth $2mln/month is agreed upon the contract.

|  |  |  |  |
| --- | --- | --- | --- |
| **Month** | **PV** | **EV** | **AV** |
| 1 | 370,220 | 124,120 | 535,000 |
| 2 | 2,080,080 | 1,333,220 | 2,461,000 |
| 3 | 5,730,920 | 4,442,640 | 4,562,480 |
| 4 | 9,625,720 | 7,201,100 | 7,468,600 |
| 5 | 16,050,000 |  |  |
| 6 | 19,688,000 |  |  |
| 7 | 21,400,000 |  |  |

Your boss asks you to estimate the profit that your project would net at completion, based on current performance. What would you answer?

# Contracting (7 points)

Bev-Pak Inc. is planning to build in Poland a new beverage container plant with total capacity of 2 billion cans produced per year, representing approximately 40% of can consumption of mainland Europe. Bev-Pak assure long-term selling contracts with Coca-Cola and PepsiCo. to recover the initial investment over at least 5 years of operations. Upon completion, the plant will have three state-of-the-art automated production lines to produce tin-plated steel cans, which can be sold at a lower price than traditionally-manufactured aluminium cans.

1. Suppose to be the project manager of Bev-Pak facing the problem of defining the contract organization to build the new can production facility. What would you suggest with regard to the delivery system, payment scheme and award method? Briefly justify your decisions in writing.
2. Please list three main risks and associated appropriate response strategies.