****

**IT Project Management** / **IT Project Practice**

**Semester 1, 2018**

**FINAL EXAMINATION REVISION EXERCISES**

1. Fill in the table by calculating the discount factor, discounted benefits, discounted costs, discounted benefits – costs, cumulative benefits – costs, total discounted benefits, and total discounted costs.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Discount rate | 7% |  |  |  |  |
| ***PROJECT 1*** | ***Year 0*** | ***Year 1*** | ***Year 2*** | ***Year 3*** | ***Total*** |
| Benefits | $0.00 | $150,000.00 | $150,000.00 | $150,000.00 | --- |
| Discount Factor |  |  |  |  | --- |
| **Discounted benefits** |  |  |  |  |  |
| Costs | $90,000.00 | $30,000.00 | $30,000.00 | $30,000.00 | --- |
| Discount factor |  |  |  |  | --- |
| ***Discounted Costs*** |  |  |  |  |  |
| ***Discounted benefits - costs*** |  |  |  |  | --- |
| ***Cumulative benefits - costs*** |  |  |  |  | --- |

* 1. What is the NPV for the project?
  2. What is the ROI for the project?
  3. What is the payback period for the project?
  4. Is the project worth undertaking? Justify your response.

1. Fill in the table by calculating the discount factor, discounted benefits, discounted costs, discounted benefits – costs, cumulative benefits – costs, total discounted benefits, and total discounted costs.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Discount rate | 7% |  |  |  |  |
| ***PROJECT 1*** | ***Year 0*** | ***Year 1*** | ***Year 2*** | ***Year 3*** | ***Total*** |
| Benefits | $0.00 | $100,000.00 | $100,000.00 | $100,000.00 | --- |
| Discount Factor |  |  |  |  | --- |
| **Discounted benefits** |  |  |  |  |  |
| Costs | $200,000.00 | $20,000.00 | $20,000.00 | $20,000.00 | --- |
| Discount factor |  |  |  |  | --- |
| ***Discounted Costs*** |  |  |  |  |  |
| ***Discounted benefits - costs*** |  |  |  |  | --- |
| ***Cumulative benefits - costs*** |  |  |  |  | --- |

* 1. What is the NPV for the project?
  2. What is the ROI for the project?
  3. What is the payback period for the project?
  4. Is the project worth undertaking? Justify your response.

1. Consider the below table. All duration estimates or estimated times are in days, and the network proceeds from Node 1 to Node 7.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Activity | Initial  Node | Final Node | Estimated Duration (days) | Predecessors |
| A | 1 | 2 | 2 |  |
| B | 2 | 3 | 2 |  |
| C | 3 | 7 | 5 |  |
| D | 2 | 4 | 2 |  |
| E | 1 | 4 | 4 |  |
| F | 4 | 6 | 1 |  |
| G | 1 | 5 | 2 |  |
| H | 5 | 6 | 3 |  |
| I | 6 | 7 | 1 |  |

* 1. Draw an AOA network diagram representing this project.
  2. In the table above, write down the predecessor activities (could be one or many) for each task.
  3. Identify all of the paths on the network diagram and note how long they are.
  4. What is the critical path for this project and how long is it?
  5. What is the estimated duration of the entire project?

1. Consider the below table. All duration estimates or estimated times are in days, and the network proceeds from Node 1 to Node 6.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Activity | Initial  Node | Final Node | Estimated Duration (days) | Predecessors |
| A | 1 | 2 | 1 |  |
| B | 2 | 4 | 2 |  |
| C | 4 | 6 | 5 |  |
| D | 1 | 3 | 1 |  |
| E | 3 | 5 | 2 |  |
| F | 5 | 6 | 5 |  |

* 1. Draw an AOA network diagram representing this project.
  2. In the table above, write down the predecessor activities (could be one or many) for each task.
  3. Identify all of the paths on the network diagram and note how long they are.
  4. What is the critical path for this project and how long is it?
  5. What is the estimated duration of the entire project?

1. Given the following information for two one-year projects, answer the following questions. Assume that you have completed two months on each of the projects. Recall PV is the planned value. EV is earned value, AC is the actual cost and BAC is the budget at completion.

|  |  |  |
| --- | --- | --- |
|  | Project A | Project B |
| PV | $40,000 | $80,000 |
| EV | $30,000 | $90,000 |
| AC | $35,000 | $75,000 |
| BAC | $240,000 | $360,000 |

1. What is the cost variance, schedule variance, cost performance index (CPI), and schedule performance index (SPI) for project A and project B?
2. How are the two projects doing? Are they ahead of schedule or behind schedule? Are they under budget or over budget?
3. Use the CPI to calculate the estimate at completion (EAC) for both projects. Are the projects performing better or worse than planned?
4. Use the SPI to estimate how long it will take to finish both projects.
5. Based on the information provided below, perform a Quantitative Risk Analysis using a decision tree approach to calculate Expected Monetary Value(EMV) and Contingencey Reservefor each project.



