**1.) Given the following network project**:

|  |  |  |
| --- | --- | --- |
| **Activity** | **Estimated Time (mo.)** | **Immediate Predecessor** |
| A | 10 | - |
| B | 12 | - |
| C | 15 | - |
| D | 18 | A |
| E | 7 | C |
| F | 9 | B,C |

*a.*     Develop a network diagram.

*b.*     How long will it take to complete the project?

*c.*     Which activities are on the critical path?

*d.*     How much stack is in each activity?

*e.*     What is the impact on the critical time if the time for activity A is increased to 14 months?

**2) Given the following network project**:

|  |  |  |
| --- | --- | --- |
| **Activity** | **Estimated Time (days)** | **Immediate Predecessor** |
| A | 2 | - |
| B | 3 | - |
| C | 4 | - |
| D | 2 | A,B |
| E | 1 | C.D |
| F | 3 | A |
| G | 5 | F |
| H | 2 | C |
| I | 4 | E,G,H |
| J | 7 | I |
| K | 3 | J |

*a.*     Develop a network diagram.

*b.*     How long will it take to complete the project?

*c.*     Which activities are on the critical path?

*d.*     How much stack is in each activity.

*e.*     What is the impact on the critical time if the time for activity B is reduced by two days?

5.     **Given the following network project with mu**

**3) Given the following network project with multiple time estimates in weeks:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activity** | **Optimistic** | **Modal** | **Pessimistic** | **IP** |
| A | 10 | 14 | 16 | - |
| B | 12 | 12 | 12 | - |
| C | 6 | 10 | 12 | A |
| D | 5 | 8 | 9 | B |
| E | 10 | 12 | 14 | C,D |

*a.*     What is the expected project completion time?

*b.*     Identify the critical path(s).

*c.*     Describe each of the task distributions as either skewed right, skewed left, normal or constant.

*d.*     What is the probability that the project will exceed 32 weeks?

*e.*     What is the probability that the project can be completed within 34 weeks?