3.3

Draw the activity-on-node (AON) project network associated with the following activities for Dave Carhart’s consulting company project. How long should it take Dave and his team to complete this project? What are the critical path activities?

Activity Immediate Predecessors Time/days

A -- 3

B A 4

C A 6

D B 6

E B 4

F C 4

G D 6

H E,F 8

3.6

Shirley Hopkins is developing a program in leadership training for middle-level managers. Shriley has listed a number of activities that must be completed before a training program of this nature could be conducted. The activities, immediate predecessors, and times appear in the acconmpaning table:

Activity Immediate Predecessors Time/days

A -- 2

B -- 5

C -- 1

D B 10

E A,E 3

F C 6

G E,F 8

a. Develop an AON network for this problem

b. What is the critical path?

c. What is the total project completion time?

d. What is the slack time for each individual activity?

3.15

The following is a table of activities associated with a project at Bill Figg Enterprises, these durations and what activities each must precede:

Activity Duration (weeks) Precedes

A (start) 1 B,C

B 1 E

C 4 F

E 2 F

F (end) 2 ---

1. Draw an AON diagram of the project, including activity durations.
2. Define the critical path, listing all critical activities in chronological order.
3. What is the project duration in weeks?
4. What is the slack (in weeks) associated with any and all noncritical paths through the project.

3.17

Bill Fennema, president of Fennema Construction, has developed the task, durations, and predecessor relationship in the following table for building new motels. Draw the AON network and answer the questions that follow.

Time Estimates (in weeks)

Activity Immediate Predecessors Optimistic Most likely Pessimistic

A -- 4 8 10

B A 2 8 24

C A 8 12 16

D A 4 6 10

E B 1 2 3

F E,C 6 8 20

G E,C 2 3 4

H F 2 2 2

I F 6 6 6

J D,G,H 4 6 12

K I,J 2 2 3

a. What is the expected (estimated) time for activity C?

b. Based on the calculation of estimated times, what is the critical path?

c. What is the estimated time of the critical path?