EXAM CRAM

Covers the **PMBOK** Fifth Edition and 2013 Exam

PMP

Project Management Professional

Fifth Edition

CD FEATURES 200 PRACTICE QUESTIONS

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Fifth Edition

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Activity Planning—From WBS to Project Schedule

▶ **Plan Schedule Management—6.1**

▶ **Define Activities—6.2**

▶ **Sequence Activities—6.3**

▶ **Estimate Activity Resources—6.4**

▶ **Estimate Activity Durations—6.5**

▶ **Develop Schedule—6.6**

CramSaver

If you can correctly answer these questions before going through this section, save time by skimming the Exam Alerts in this section and then completing the Cram Quiz at the end of the section.

1. Which type of network diagram method allows you to depict four types of dependencies?

   ○ **A.** Precedence diagramming method (PDM)

   ○ **B.** Arrow diagramming method (ADM)

   ○ **C.** Dependency diagramming method (DDM)

   ○ **D.** Gantt chart diagram (GCD)

2. What term is defined as the practice of planning activities based on how soon the tasks are scheduled to start, such that activities that are close to their start date are planned at a more detailed level than those farther in the future? This term also implies that more detailed plans are required as activities approach their start date.

   ○ **A.** Progressive elaboration

   ○ **B.** Rolling wave planning

   ○ **C.** Planning component elaboration

   ○ **D.** Milestone detail planning

3. Which of the following statements best describes the estimate activity resources process?

   ○ **A.** Identifying and documenting relationships among the project activities

   ○ **B.** Identifying the specific actions to be performed to produce the project deliverables

   ○ **C.** Estimating the number of work periods needed to complete individual activities

   ○ **D.** Estimating the type and quantities of material, people, equipment, or supplies to perform each activity

4. Which estimating technique is best to use if you know the standard usage rate for a resource (such as an installer can pull 40 feet of cable per hour) to estimate the duration of an activity?

- ○ **A.** Analogous estimating
- ○ **B.** Parametric estimating
- ○ **C.** Three-point estimates
- ○ **D.** Reserve analysis

5. Which of the following is NOT a tool and technique for the develop schedule process?

- ○ **A.** Critical path method
- ○ **B.** Alternatives analysis
- ○ **C.** Schedule network analysis
- ○ **D.** Leads and lags

Answers

1. Answer A is correct. The precedence diagramming method (PDM), also called activity-on-node (AON) diagramming, supports finish-to-start, finish-to-finish, start-to-start, and start-to-finish dependencies. PDM is often used in critical path methodology (CPM). Answer B is incorrect because the arrow diagramming method (ADM) only allows for finish-to-start dependencies. Answers C and D are incorrect because they are not real diagramming methods.

2. Answer B is the best answer. Rolling wave planning is providing detailed plans for tasks that are starting in the near future by using the most current information and revisiting future activities as their starting dates approach. Although rolling wave planning is a type of progressive elaboration, it is mainly concerned with near-term activities. Answer A is not the best answer because progressive elaboration is the process of continuously improving a project plan as more is learned about the project. Answers C and D are incorrect because they are not valid project planning terms.

3. Answer D is correct. Estimate activity resources is the process of estimating the type and quantities of material, people, equipment, or supplies to perform each activity. Answer A is incorrect because it describes the sequence activities process. Answer B is incorrect because it describes the define activities process. Answer C is incorrect because it describes the estimate activity durations process.

4. Answer B is correct. Parametric estimating uses known historical data, such as production rates, to estimate duration. Answer A is incorrect because analogous estimating uses comparison with other, similar project work. Answer C is incorrect because three-point estimates use best, worst, and most likely estimates to calculate duration. Answer D is incorrect because it refers to the process of including contingency reserves into estimates, not actually calculating estimate durations.

> **5.** Answer B is correct. Alternative analysis is a tool and technique for the estimate activity resources process. Estimate activity resources is the process of estimating the type and quantities of material, people, equipment, or supplies to perform each activity. Answers A, C, and D are all tools and techniques for the develop schedule process.

The next section of the planning processes address the steps required to develop the project schedule. This is the part of the project plan that might be most familiar to new project managers. Many automated project management tools help create schedules by keeping track of activities, resources, durations, sequencing, and constraints. Although the schedule is an integral part of the project plan, it is only one part. Don't start working on the schedule until you have a proper WBS. Starting to work before completing the WBS nearly always results in doing more work than is necessary. A good WBS reduces task redundancy and helps ensure that all work performed is in the scope of the project.

Plan Schedule Management

The first process in the time management knowledge area is *plan schedule management*. This process defines the policies and procedures for planning, managing, and controlling the project schedule. This process provides guidance on how the schedule will be managed throughout the project. All the subsequent processes in the time management knowledge area depend on the plan developed in this process. Table 4.6 shows the inputs, tools and techniques, and outputs for the plan schedule management process.

TABLE 4.6 **Plan Schedule Management Inputs, Tools and Techniques, and Outputs**

Inputs	Tools and Techniques	Outputs
Project management plan	Expert judgment	Schedule management plan
Project charter	Analytical techniques	
Enterprise environmental factors	Meetings	
Organizational process assets		

Define Activities

The first process in the activity planning section is *define activities*. This process starts with the WBS and identifies the activities required to produce the various project deliverables. Activities are viewed from the perspective of the work packages. You ask the question, "What activities are required to satisfy this work package requirement?" Next, the resulting information from this process is used to organize the activities into a specific sequence. Table 4.7 shows the inputs, tools and techniques, and outputs for the define activities process.

TABLE 4.7 **Define Activities Inputs, Tools and Techniques, and Outputs**

Inputs	Tools and Techniques	Outputs
Schedule management plan	Decomposition	Activity list
Scope baseline	Rolling wave planning	Activity attributes
Enterprise environmental factors	Expert judgment	Milestone list
Organizational process assets		

Sometimes it is difficult to know everything about a project during the planning stage. It is common to learn more about the project as you work through the project life cycle. This is called *progressive elaboration* and affects the planning process. If you don't know everything about a project, you can't plan the whole project to the necessary level of detail.

For a large project, it is common to plan the entire project at a high level. The project starts with detailed plans in place for the work packages that are near the beginning of the project. As the time draws near to begin additional work, the more detailed, low-level plans for those work packages are added to the project plan. The planning process is revisited multiple times to ensure that the detailed plans contain the latest information known about the project. This practice is called *rolling wave planning* because the planning wave always moves to stay ahead of the work execution wave.

Sequence Activities

The next process is arranging the activities list from activity definition into a discrete sequence. Some activities can be accomplished at any time throughout the project. Other activities depend on input from another activity or are constrained by time or resources. Any requirement that restricts the start or end time of an activity is a *dependency*. This process identifies all relationships between activities and notes restrictions imposed by these relationships.

For example, when building a car, you cannot install the engine until the engine has been built and delivered to the main assembly line. This is just one example of how activities can be dependent on one another. The sequence activities process is one that can benefit from the use of computer software to assist in noting and keeping track of inter-activity dependencies. Table 4.8 shows the inputs, tools and techniques, and outputs for the sequence activities process.

TABLE 4.8 **Sequence Activities Inputs, Tools and Techniques, and Outputs**

Inputs	Tools and Techniques	Outputs
Schedule management plan	Precedence diagramming method (PDM)	Project schedule
Activity list	Dependency determination	Project documents updates
Activity attributes	Leads and lags	
Milestone list		
Project scope statement		
Enterprise environmental factors		
Organizational process assets		

Network Diagrams

One of the most important topics to understand when planning project activities is how to create network diagrams. A *network diagram* provides a graphical view of activities and how they are related to one another. The PMP exam tests your ability to recognize and understand the most common type of network diagramming method: the *precedence diagramming method* (*PDM*). Make sure you can read a PDM diagram and use the information it presents.

Figure 4.3 shows an example of a PDM diagram.

Precedence Diagramming Method (PDM)
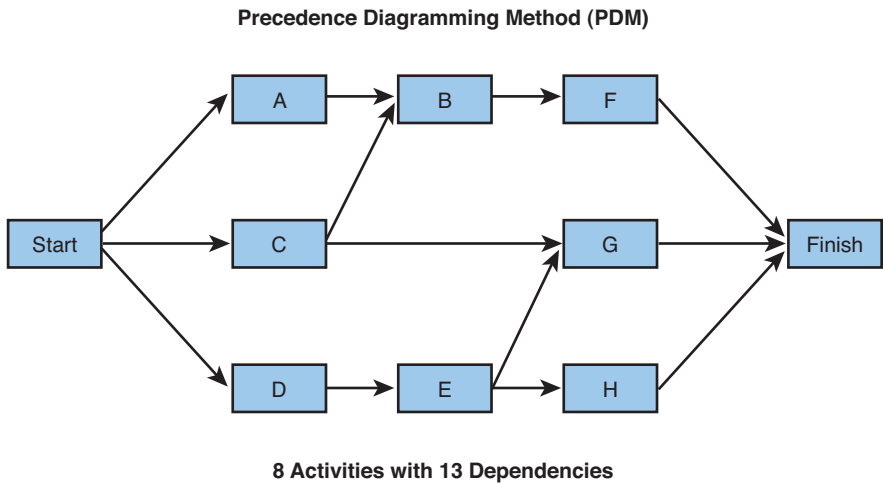

8 Activities with 13 Dependencies

FIGURE 4.3   The precedence diagramming method.

Precedence Diagramming Method

A PDM diagram shows nodes—representing activities—connected by arrows that represent dependencies. To represent that activity B is dependent on activity A (in other words, activity A must be complete before activity B starts), simply draw an arrow from A to B. PDM diagrams are also referred to as activity-on-node (AON) diagrams because the nodes contain the activity duration information. (We don't have enough information to complete all the information presented here yet. We'll fill in the duration information during activity duration estimating.) In fact, nodes generally contain several pieces of information, including

▶ **Early start**—The earliest date the activity can start

▶ **Duration**—The duration of the activity

▶ **Early finish**—The earliest date the activity can finish

▶ **Late start**—The latest date the activity can start

▶ **Late finish**—The latest date the activity can finish

▶ **Slack**—Difference between the early start and the late start dates

Figure 4.4 shows an example of a PDM node template.