What is Construction Scheduling?

Worksheet

Construction scheduling develops a time-phased plan of all project tasks, sequences them logically, identifies critical activities and forecasts when the project will complete.

Questions

1. Critical path method (CPM) identifies

A) the cheapest way to build
B) the sequence of activities that determines project duration
C) the number of workers needed
D) the best safety route on site

2. A task has a duration of 5 days and starts on Day 1. If actual work takes 7 days, the impact is

A) no impact (work continues)
B) 2-day delay to dependent tasks (if on critical path)
C) cost overrun only
D) safety hazard

3. Scheduling float (slack) means

A) unused budget
B) a task can be delayed without delaying project
C) the time it takes to float test the structure
D) overhead on materials

4. Resource leveling is used to

A) level the ground
B) balance labor/equipment demand over time
C) reduce material costs
D) speed up construction

5. A 4-month renovation: demolition (2 wk) framing (3 wk) electrical (2 wk) drywall (1 wk) painting (1 wk). Which tasks are on the critical path?

6. Excavation takes 3 weeks. Concrete can start after 1 week even if excavation isn't done (equipment mobilizes). This is lead time. Impact?

7. Drywall is scheduled for 2 weeks but only one crew available; normally needs two crews to fit schedule. What is resource constraint?

8. Define: What is construction scheduling?

9. Define: What is the critical path?

10. Define: What is task duration?

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Answer Key

1. B) the sequence of activities that determines project duration - CPM calculates the longest chain of dependent tasks; delays in critical tasks delay the project.

2. B) 2-day delay to dependent tasks (if on critical path) - If the task is critical, the 2-day overrun delays dependent tasks and project completion.

3. B) a task can be delayed without delaying project - Float is free time in non-critical tasks; small delays absorb without impacting project completion.

4. B) balance labor/equipment demand over time - Resource leveling adjusts task timing to smooth workforce and equipment usage, avoiding peaks and valleys.

5. Sum durations: 2 + 3 + 2 + 1 + 1 = 9 weeks (36 days, within 4 months ~17 weeks). All tasks in this sequence are critical - any delay extends project completion.

6. Lead time compresses schedule: concrete starts week 2 instead of week 4. Float (free time) in excavation absorbs small delays without impacting concrete start.

7. Resource constraint is labor: one crew extends drywall to 4 weeks instead of 2. Scheduler must decide: hire extra crew (cost) or accept schedule delay (timeline pressure).

8. The process of organizing project tasks in time sequence, estimating durations, identifying dependencies and forecasting project completion.

9. The longest sequence of dependent tasks; any delay in critical tasks delays the entire project. Non-critical tasks have slack/float.

10. The estimated time required to complete a task, usually based on scope, crew size and productivity.

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