

Certified Cost Consultant / Cost Engineer (AACE International)

Test Prep CCE-CCC

Version Demo

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QUESTION NO: 1

A major theme park is expanding the existing facility over a five-year period. The design phase will be completed one year after the contract is awarded. Major engineering drawings will be finalized two years after the design contract is awarded and construction will begin three years after the award of the design contract. New, unique ride technology will be used and an estimate will need to be developed to identify these costs that have no historical data.

The following is NOT an advantage of the critical path method:

- A. The ability to determine cost overruns of critical path activities
- B. The ability to identify activities that cannot have their schedules slip if the desired project end date is to be achieved
- C. Reveals activities that additional resources need to be dedicated toward
- D. The ability to show slippage in the progress of key activities

ANSWER: A

Explanation:

The ability to determine cost overruns of critical path activities is not an inherent advantage of the critical path method (CPM). CPM is principally a network-scheduling technique: it models activities, logical relationships, durations, and calculated dates to identify the sequence of work that controls the project's forecast completion date. Its core value is therefore in schedule planning, monitoring, and analysis of time-related effects. A critical activity has no available total float, so a delay to that activity can delay the project finish unless corrective action is taken.

Although activity costs can be assigned to a schedule and analyzed through an integrated cost-and-schedule control process, CPM calculations alone do not establish whether an activity has experienced a cost overrun. That determination requires a cost baseline, actual-cost collection, and cost-performance analysis, such as earned value management. The fact that an activity is on the critical path identifies its schedule importance; it does not provide the budget-versus-actual cost information needed to measure an overrun. This distinction is especially important for the unique ride technology described, because its cost estimate and subsequent cost control require estimating and cost-management methods in addition to the project schedule network.

The U.S. Government Accountability Office's [Schedule Assessment Guide](#) discusses critical-path scheduling as a basis for reliable schedule analysis. The Project Management Institute also summarizes the role of [earned value management](#) in integrating scope, schedule, and cost performance measurement.

QUESTION NO: 2

A major theme park is expanding the existing facility over a five-year period. The design phase will be completed one year after the contract is awarded. Major engineering drawings will be finalized two years after the design contract is awarded and construction will begin three years after the award of the design contract. New, unique ride technology will be used and an estimate will need to be developed to identify these costs that have no historical data.

The project scheduler left the company and has left unfinished work. You have been hired as the new project scheduler and must update the existing schedule. What will be your first task?

- A. Recalculate the early finish for each activity
- B. Recalculate the early start for each activity
- C. Update the remaining duration for each activity
- D. Recalculate the critical path

ANSWER: C

Explanation:

“Update the remaining duration for each activity” is the appropriate first task because a schedule update must begin by establishing a credible current-status picture of the work. For activities that are still in progress, the scheduler needs to determine how much work remains and translate that assessment into a remaining duration as of the update or data date. This information, together with actual starts and finishes where applicable, represents the current forecast for unfinished work. It is especially important on a long, technically novel project, where initial duration assumptions may no longer reflect actual productivity, engineering maturity, procurement conditions, or emerging constraints.

Once status and remaining durations have been entered, the scheduling software can recalculate dates, float, and the critical path using the revised network logic and forecast durations. Those calculations are outputs of the update process rather than the starting point. AACE describes schedule updating as a process of collecting progress information, evaluating remaining work, and revising the schedule forecast; see [AACE International Recommended Practices](#). The relationship between updated activity status, remaining duration, and recalculated project dates is also reflected in [Oracle Primavera P6 EPPM User Guides](#).

QUESTION NO: 3

You have been hired as the cost engineer for a mechanical contractor and have been provided the following information:

Total budgeted hours 12,000
The planned project duration in days 130

Rules of credit are as follows:

Pipe received	5%
Hangers installed	10%
Pipe in place	30%
Welded	50%
Flushed	5%

The following question requires your selection of CCC/CCE Scenario 2 (2.3.50.1.2) from the right side of your split screen, using the drop down menu, to reference during your response/choice of responses.

9,375 hours have been expended to date. Planned completion at this time is 75%. The project is determined to be 66% complete. Based on current trends, how many hours will be expended at project completion?

- A. 16,215
- B. 14,201
- C. 12,000
- D. 10,526

ANSWER: B

Explanation:

14,201 is the projected total-hours estimate at completion. The scenario's planned progress and expended hours establish the budgeted or planned total labor-hours baseline: 9,375 hours at 75% planned completion corresponds to approximately 12,500 planned total hours. Actual physical progress is only 66%, so earned hours are approximately 66% of that baseline, or 8,250 hours. Comparing earned hours with the 9,375 actual hours expended produces a labor efficiency of about 0.88. Applying that observed efficiency to the total planned hours gives an estimate at completion of roughly 14,200 hours. The small difference between a hand calculation using rounded percentages and 14,201 reflects the scenario's underlying unrounded values and answer rounding. This is the standard earned-value forecasting approach: when current cost or labor performance is expected to continue, estimate at completion is calculated as the budget at completion divided by the cumulative cost performance index. In a labor-hours application, actual hours are used in place of actual cost, while earned hours represent the budgeted labor value of work actually accomplished. AACE's recommended-practice library provides the

professional cost-engineering framework for applying performance measurement and forecasting methods; see [AACE Recommended Practices](#). For the earned-value estimate-at-completion concept, see [PMI's earned value management overview](#).

QUESTION NO: 4

The goal of listening is to:

- A. Analyze what the speaker is saying
- B. Find out what is going on
- C. Have time to formulate your thoughts on the subject
- D. Improve communication

ANSWER: D

Explanation:

“Improve communication” is correct because effective listening is an active communication process, not merely the passive reception of sounds or an opportunity to prepare a response. In professional cost-engineering and project environments, listening enables a consultant to understand the speaker’s facts, intended meaning, concerns, assumptions, priorities, and requested action. That understanding supports clear requirements, more reliable estimates and forecasts, productive stakeholder relationships, and timely resolution of issues.

Active listening also involves attending to both verbal and nonverbal information, asking appropriate clarifying questions, and confirming understanding through paraphrasing or feedback. These practices reduce ambiguity and help ensure that information is interpreted as the speaker intended. The resulting shared understanding is the foundation of two-way communication: the listener receives and interprets the message, then responds in a way that demonstrates comprehension and advances the discussion. The U.S. Office of Personnel Management identifies active listening as a communication skill involving attention, clarification, and accurate understanding; its guidance is available at [OPM Competencies](#). Further practical guidance on listening as a core communication skill is provided by [Mind Tools: Active Listening](#).

QUESTION NO: 5

An agricultural corporation that paid 53% in income tax wanted to build a grain elevator designed to last twenty-five (25) years at a cost of \$80,000 with no salvage value. Annual income generated would be \$22,500 and annual expenditures were to be \$12,000.

Answer the question using a straight line depreciation and a 10% interest rate.

If \$50 was invested at 6.0% on January 1, year 1, what would be the value of year-end withdrawals made in equal amounts each year for 10 years and leaving nothing in the fund after the tenth withdrawal?

- A. \$6.80
- B. \$3.10
- C. \$5.35
- D. \$2.22

ANSWER: A

Explanation:

\$6.80 is correct because the \$50 deposit is made at the beginning of year 1 and the withdrawals occur at each year-end. Thus, the deposit is the present value, at the beginning of the first year, of a 10-payment ordinary annuity at 6.0%. The equal annual withdrawal is found with the capital-recovery factor: $\text{payment} = \text{present value} \times [i(1+i)^n / ((1+i)^n - 1)]$. Substituting the

stated values gives payment = $\$50 \times [0.06(1.06)^{10} / ((1.06)^{10} - 1)] = \50×0.135867 , or approximately \$6.793. Rounded to the nearest cent, each year-end withdrawal is \$6.80. This payment amount amortizes the initial \$50 investment completely over ten year-end withdrawals, including 6% interest on the unpaid balance during each year. The grain-elevator tax, depreciation, income, expenditure, and 10% interest information does not enter this particular time-value-of-money calculation; the withdrawal scenario specifically supplies its own 6.0% rate and 10-year term. For the standard present-value relationship for an ordinary annuity, see [OpenStax: Present Value of an Annuity](#) and [Engineering LibreTexts: Interest Formulas and Equivalence](#).

QUESTION NO: 6

AACE International defines _____ as a technique of economic evaluation that sums over a given study period, the costs of initial investment, replacements, operations, and maintenance/ repair; expressed in either present or annual value terms.

- A. Risk analysis
- B. Benefit/Cost ratio (B/C) method
- C. Net present worth method
- D. Life cycle costs method (LCC)

ANSWER: D

Explanation:

Life cycle costs method (LCC) is correct because life-cycle costing evaluates the total cost of owning, operating, maintaining, repairing, and ultimately replacing or disposing of an asset across a specified study period. It brings the relevant cost streams together so that alternatives can be compared on a consistent economic basis. In the definition used by AACE International, the included costs specifically encompass the initial investment, replacements, operations, and maintenance/repair, with results expressed as either present-value or equivalent annual-value amounts. This long-term perspective supports decisions that optimize total ownership cost rather than focusing solely on the lowest first cost. For example, a facility system with a higher acquisition cost may have lower energy, maintenance, and replacement costs over its useful life; LCC provides the structured evaluation needed to quantify that tradeoff. The U.S. National Institute of Standards and Technology similarly describes life-cycle cost analysis as an economic evaluation of alternatives that considers relevant costs over a defined period, discounted to present value. See the [NIST Life-Cycle Costing Manual](#) and the [AACE International Recommended Practices](#).

QUESTION NO: 7

If a project is said to be on a "fast track program/" the fast track method is:

- A. Simultaneous engineering, procurement, and construction, with appropriate overlap among phases of work so that delays are reduced and the work is streamlined into a logical sequence and duration.
- B. First completing engineering and procurement, then executing construction
- C. Analyzing the project and specifying the basic approach to be used in its execution; segmenting the project into reasonable number of activities; estimating the time required to perform each activity; placing the activities in time order, considering both sequential and parallel performance
- D. Revising the schedule logic to identify constraints caused by faulty logic; revising durations in the CPM schedule based on assumptions about how the work will be performed; revising resources to work multiple shifts; and evaluating overtime

ANSWER: A

Explanation:

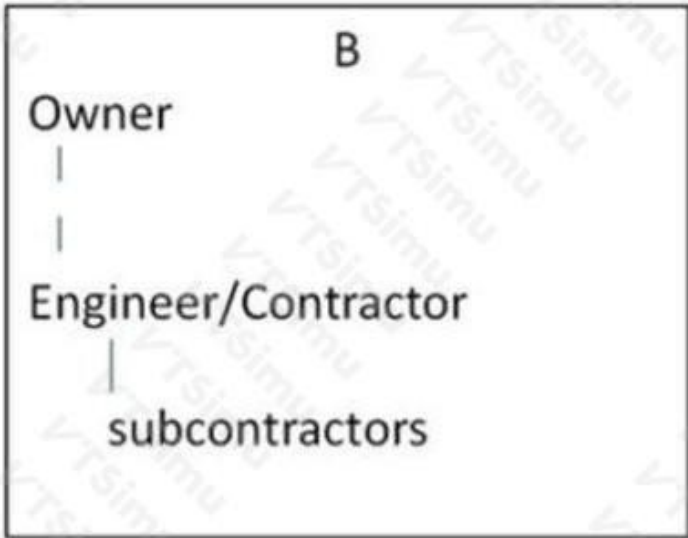
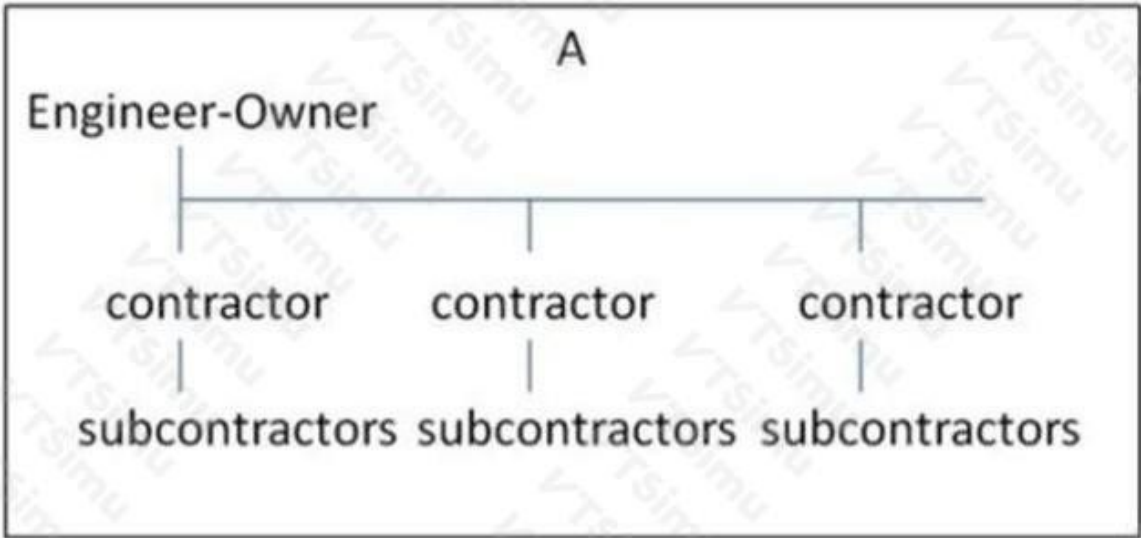
Fast tracking is a schedule-compression approach in which activities that would normally be performed in sequence are deliberately overlapped. In a project delivery setting, this means engineering, procurement, and construction can proceed

concurrently to the extent that sufficient information is available and the resulting interfaces are actively managed. For example, procurement of long-lead equipment or construction of an early work package may begin before all detailed engineering for the entire facility has been completed. The purpose is to reduce overall project duration by replacing some finish-to-start relationships with controlled overlap.

Accordingly, “Simultaneous working engineering, procurement, and construction, with appropriate overlap from each phase of work” accurately describes the fast-track method. The overlap must be planned around logical work sequencing, release of design information, package boundaries, and change control. Fast tracking can accelerate delivery, but it requires strong coordination because later design development may affect work already released or started. PMI identifies fast tracking as a schedule-compression technique that performs activities or phases in parallel that would ordinarily be done sequentially; see the [PMI Lexicon of Project Management Terms](#) and PMI’s overview of [fast-tracking projects](#).

QUESTION NO: 8

Given the two organization structures below, answer the question.



The following question requires your selection of CCC/CCE Scenario 28 (3.7.50.1.7) from the right side of your split screen, using the drop down menu, to reference during your response/choice of responses.

If the owner in B has as his primary goal to get the project completed and on line as fast as possible, then he would most likely use the _____ type of contract.

- A. Cost plus
- B. Lump sum

C. Unit Rate

D. Lump sum + incentive

ANSWER: D

Explanation:

Lump sum + incentive is the most appropriate contract type when the owner's overriding objective is to have the facility completed and operational as quickly as possible. A lump-sum arrangement establishes a defined base price and places responsibility for delivering the agreed scope on the contractor. Adding a clearly structured incentive aligns the contractor's financial interest with the owner's schedule objective. The incentive can reward achievement of specified milestone dates, early completion, commissioning, start-up, or the date the project is placed online. This provides a direct commercial reason to devote resources, planning, procurement effort, and schedule-control attention to accelerating delivery while maintaining a defined contractual commitment.

For the incentive to work effectively, the contract should establish an objective baseline schedule, measurable completion criteria, a stated incentive formula or amount, and provisions defining how delays, excusable events, and changes affect the target date. Incentive-contract principles recognize that performance incentives should be tied to targets that are important to the buyer and capable of objective measurement. Schedule incentives are particularly useful where the economic value of earlier operation justifies paying for superior time performance. Guidance on incentive contracting is available in the [Federal Acquisition Regulation, Subpart 16.4](#); AACE's professional resources and recommended practices are available through [AACE International Recommended Practices](#).

QUESTION NO: 9

_____ can be defined as the determination of that course of action or combination of alternatives that yields either the lowest cost or the highest profit.

A. Economic optimization

B. Simulation

C. Linear programming

D. Dynamic programming

ANSWER: A

Explanation:

Economic optimization is the determination of the course of action, or combination of feasible alternatives, that produces the most favorable economic result. Depending on the objective established for the decision, that result may be the minimum total cost, the maximum profit, the greatest net present value, or another defined measure of economic value. In cost engineering, this means comparing alternatives on a consistent economic basis, considering relevant costs, benefits, constraints, timing, and assumptions, then selecting the alternative that best satisfies the stated objective.

This definition is broader than any particular mathematical technique. An economic optimization may be performed using quantitative models, estimates, life-cycle cost analysis, discounted-cash-flow analysis, or structured decision analysis. The essential feature is not the computational method but the selection of the economically best feasible alternative. This aligns with AACE's Total Cost Management perspective, which treats economic and financial analysis as an integral part of evaluating project and asset decisions throughout their life cycles. See AACE International's [Total Cost Management Framework](#) and its [cost-engineering certification resources](#).

QUESTION NO: 10

_____ is defined as covering work whose component activities are less defined and whose interrelationships are conditional.

A. Soft logic

- B. Hard logic
- C. Deductive logic
- D. Inductive logic

ANSWER: A

Explanation:

Soft logic is the correct term for work in which the individual activities are not fully or rigidly defined and the relationships among them depend on conditions, decisions, or evolving circumstances. In project planning and scheduling, this type of logic is useful when the work cannot yet be represented entirely through fixed, deterministic predecessor-successor relationships. The sequencing may be influenced by such factors as the selected execution approach, resource availability, design maturity, field conditions, or management decisions. Accordingly, the schedule relationship reflects a flexible or conditional planning judgment rather than an unavoidable physical or technical constraint.

This distinction matters to cost engineers because the quality of schedule logic affects forecasting, risk analysis, progress measurement, and the credibility of time-and-cost projections. Properly identifying soft logic helps a project team recognize where sequencing assumptions may need review as conditions change, instead of treating every relationship as an immutable requirement. AACE's recommended practices provide the professional framework for planning, scheduling, and cost engineering application: [AACE International Recommended Practices](#). Related scheduling terminology and professional practice resources are available from the [Project Management Institute library](#).

QUESTION NO: 11

A project has a budget at completion (BAC) of \$1,000,000. Its earned value is \$400,000, and its actual cost is \$500,000. If the current cost performance is expected to continue for the remaining work, the estimate at completion (EAC) is:

- A. \$900,000
- B. \$1,100,000
- C. \$1,250,000
- D. \$1,500,000

ANSWER: C

Explanation:

The correct answer is **\$1,250,000**. When current cost performance is expected to continue, EAC may be calculated as BAC divided by CPI. $CPI = EV \div AC = \$400,000 \div \$500,000 = 0.80$. Therefore, $EAC = \$1,000,000 \div 0.80 = \$1,250,000$. This forecast indicates an expected overrun of \$250,000 relative to the original budget at completion. Earned value forecasting methods are described in the [U.S. Department of Energy EVMS resources](#).

QUESTION NO: 12

When a cost estimate is adjusted to account for changes in the general price level that are expected to occur between the estimate base date and the time the work will be performed, the adjustment is called:

- A. Contingency
- B. Escalation
- C. Depreciation
- D. Amortization

ANSWER: B

Explanation:

Escalation is correct because it adjusts cost data from a stated base date to the anticipated time of expenditure for forecast changes in price levels. Escalation may reflect projected changes in labor rates, materials, equipment, fuel, commodities, and other market-priced inputs. It is distinct from contingency, which addresses uncertainty and risk within the defined scope, and from inflation as a general economic concept. A cost estimate should clearly state its base date, escalation basis, and cash-flow timing so that decision-makers understand the time value and price-level assumptions incorporated in the estimate. AACE discusses estimate development and cost forecasting practices through its [Recommended Practices](#).

QUESTION NO: 13

A major theme park is expanding the existing facility over a five-year period. The design phase will be completed one year after the contract is awarded. Major engineering drawings will be finalized two years after the design contract is awarded and construction will begin three years after the award of the design contract. New, unique ride technology will be used and an estimate will need to be developed to identify these costs that have no historical data.

In an exit interview, an employee comments that the reason he is leaving the organization is lack of teamwork and cohesion among his co-workers. Which need of Maslow's hierarchy of needs is unmet?

- A. Belongingness needs
- B. Primary needs
- C. Self-actualization needs
- D. Esteem needs

ANSWER: A

Explanation:

Belongingness needs is the correct answer. In Maslow's hierarchy, belongingness refers to the social need to feel accepted, connected, and included within a group. It encompasses friendship, affiliation, supportive relationships, and a sense of membership in a team or organization. The employee's stated concern—insufficient teamwork and cohesion among co-workers—directly describes a workplace in which social connection and group integration are not being fulfilled. When people do not experience collaborative relationships or feel that they are part of a cohesive work group, their need for belonging can remain unmet and may contribute to disengagement and turnover.

For project and cost-management organizations, this principle is particularly relevant because successful delivery depends on communication, trust, coordination, and shared commitment across disciplines. Building a collaborative team environment supports employees' sense of inclusion and strengthens their willingness to participate in collective project goals. Maslow originally positioned love and belonging needs as fundamental social motivations that become salient after basic physiological and safety needs are reasonably addressed. A useful overview of the hierarchy is available from [Encyclopaedia Britannica](#); additional background on Maslow and human motivation is provided by the [Simply Psychology overview](#).