词汇表

选择

____ refers to a set of shared assumptions, values, and behaviors that characterize the functioning of an organization.
a.Chain of command
b.Line of control
c.Organizational culture
d.Organizational structure
ANSWER:c

A ____ is a tool used in quality management.
a.probability matrix
b.checklist
c.request for proposal
d.critical path analysis
ANSWER:b

A ____ is a tool used in risk management.
a.work breakdown structure
b.project organizational chart
c.critical path analysis
d.probability matrix
ANSWER:d

A ____ is an organizational group responsible for coordinating the project management function throughout an organization.
a.Project Management Office
b.Project Management Professional
c.Project Management Center
d.Portfolio Group
ANSWER:a

A ____ is usually not necessary to the Scrum method, because Scrum implies that team members work as a self-directed group.
a.team charter
b.velocity estimate
c.Gantt chart
d.product backlog
ANSWER:a

A difference between strategic and tactical goals is:
a.strategic goals are more specific than tactical goals.
b.tactical goals encompass broader dimensions than strategic goals.
c.tactical goals are more important for a project than strategic goals.

d.strategic goals are long-term in nature whereas tactical goals are short-term.
ANSWER:d

A Gantt chart is a standard format for displaying project schedule information by listing project activities and their corresponding start and finish dates in a _____ format.
a.calendar
b.line graph
c.bar graph
d.pie chart
ANSWER:a

An important tool for project scope management is _____.
a.fast tracking
b.a kickoff meeting
c.a Gantt chart
d.a work breakdown structure
ANSWER:d

An organizational process assets update is the output of which closing process?
a.project integration management
b.project quality management
c.project procurement management
d.project time management
ANSWER:a

Administrative activities, such as archiving project files, closing out contracts, documenting lessons learned, and receiving formal acceptance of the delivered work as part of the phase or project, are often involved in which processes?
a.monitoring and controlling
b.executing
c.initiating
d.closing
ANSWER:d

After working with key stakeholders to define activities and calculate their resources, what is the next process in project schedule management?
a.develop the schedule.
b.control the schedule.
c.determine their dependencies.
d.estimate the duration of activities.
ANSWER:d

Creating the WBS is a subprocess associated with which process in project scope management?
a.planning

b.monitoring and controlling
c.closing
d.executing
ANSWER:a

During which relationship is the "from" activity unable start until the "to" activity is started?
a.start-to-start
b.finish-to-finish
c.finish-to-start
d.start-to-finish
ANSWER:a

During which approach do team members first identify as many specific tasks related to the project as possible and then aggregate the specific tasks and organize them into summary activities, or higher levels in the WBS?
a.analogy
b.bottom-up
c.top-down
d.mind mapping
ANSWER:b

Enterprise project management software is also known as a _____ tool of project management software.
a.baseline
b.midrange
c.low-end
d.high-end
ANSWER:d

Fast tracking is an example of a tool used in _____ management.
a.schedule
b.quality
c.communication
d.risk
ANSWER:a

Galaxy, a construction company, buys a particular brand of tiles manufactured by Tiles and Floors, an eco-friendly tile manufacturing company. However, Tiles and Floors has declared bankruptcy and closed down. At present, Galaxy is facing a crisis because there are no other manufacturers in the market that supplies eco-friendly tiles. Which constraint is Galaxy currently facing?
a.Resources
b.Time
c.Scope
d.Cost

ANSWER:a

Good Earth, a company manufacturing packaged food products, sets up its stores in Baltonia.However, a year later, the company closes the store down due to high operating costs. In such a scenario, the money spent in paying for the rent of the store in Baltonia would be an example of which costs?
a.recurring
b.direct
c.sunk
d.intangible
ANSWER:c

Grey's Infotech sells customized hardware and software solutions for businesses. The salespeople for Grey's have a strict dress code when meeting clients. They are required to wear dark business suits, in order to convey the company's dedication to quality. The meaning conveyed to the clients' through the salespeople's clothing is part of the ____ frame of the organization.
a.political
b.symbolic
c.structural
d.human resources
ANSWER:b

How are profits best defined?
a.expenses plus net income
b.costs plus revenues
c.revenues plus expenses
d.revenues minus expenditures
ANSWER:d

How does critical chain scheduling protect tasks on the critical chain from being delayed?
a.critical paths
b.feeding buffers
c.dummy activities
d.fast tracking
ANSWER:b

In a ____organizational structure, program managers, rather than functional managers or vice presidents, report to the CEO. Their staffs have a variety of skills needed to complete all required tasks within their programs.
a.project
b.symbolic
c.matrix
d.functional
ANSWER:a

In a ____ organizational structure, personnel often report to both a functional manager and one or more project managers.
a.project
b.symbolic
c.matrix
d.functional
ANSWER:c

In an AOA network diagram, what occurs when two or more activities follow a single node?
a.combinations
b.buffers
c.mergers
d.bursts
ANSWER:d

In organizational culture, what does control refer to?
a.The degree to which the organization monitors and responds to changes in the external environment
b.The degree to which rules, policies, and direct supervision are used to oversee employee behavior
c.The degree to which management focuses on outcomes rather than on techniques and processes used to achieve results
d.The degree to which employees are encouraged to be aggressive, innovative, and risk seeking
ANSWER:b

In organizational culture, what does people focus refer to?
a.The degree to which the organization monitors and responds to changes in the external environment
b.The degree to which rules, policies, and direct supervision are used to oversee and control employee behavior
c.The degree to which management's decisions take into account the effect of outcomes on employees within the organization
d.The degree to which employees are encouraged to be aggressive, innovative, and risk seeking
ANSWER:c

In organizational culture, what does means-end orientation refer to?
a.The degree to which the organization monitors and responds to changes in the external environment
b.The degree to which rules, policies, and direct supervision are used to oversee and control employee behavior
c.The degree to which management focuses on outcomes rather than on techniques and processes used to achieve results

d.The degree to which employees are encouraged to be aggressive, innovative, and risk seeking
ANSWER:c

In project schedule management, which process generates the main outputs of an activity list, activity attributes, and a milestone list?
a.sequencing activities
b.defining activities
c.resource estimating activities
d.estimating activity durations
ANSWER:b

In project schedule management, the ultimate goal of which process is to provide a basis for monitoring project progress for the time dimension of the project?
a.defining activities
b.sequencing activities
c.developing a schedule
d.estimating activity resources
ANSWER:c

In project schedule management, which process primarily involve identifying and documenting the relationships between project activities?
a.defining activities
b.sequencing activities
c.planning schedule management
d.estimating activity durations
ANSWER:b

In project schedule management, which process involves estimating the number of work periods that are needed to complete individual activities?
a.defining activities
b.sequencing activities
c.planning schedule management
d.estimating activity durations
ANSWER:d

In project schedule management, which process involves analyzing activity sequences, activity resource estimates, and activity duration estimates to create the project schedule?
a.planning schedule management
b.developing the schedule
c.controlling the schedule
d.defining activities
ANSWER:b

In project schedule management, which process primarily involves checking and managing

changes to the project schedule?
a.estimating activity durations
b.developing the schedule
c.controlling the schedule
d.estimating activity resources
ANSWER:c

In project schedule management, which is an output of controlling the schedule?
a.activity duration estimate
b.project management plan update
c.activity attribute
d.milestones list
ANSWER:b

In project schedule management, the main goal of which process is to ensure that the project team has complete understanding of all the work they must do as part of the project scope so they can start scheduling the work?
a.defining activities
b.estimating activity durations
c.estimating activity resources
d.controlling the schedule
ANSWER:a

In project schedule management, what is the next step after defining project activities?
a.planning schedule management
b.determining their dependencies
c.controlling the schedule
d.estimating activity duration
ANSWER:b

In Rizzati Corp, vice presidents in departments such as engineering, manufacturing, IT, and human resources report directly to the chief executive officer and undertake their tasks independently of each other. The staffs of these departments have specialized skills in their respective disciplines. Which type of organizational structure does Rizatti Corp have?
a.Project
b.Symbolic
c.Matrix
d.Functional
ANSWER:d

In the Scrum method, during which meeting is the improvement of the product and process discussed?
a.sprint retrospective
b.sprint review
c.kick-off

d.daily Scrum
ANSWER:a

In what type of organizational structure do project managers have the most authority?
a.Functional
b.Project
c.Matrix
d.Circular
ANSWER:b

In what type of organizational structure do project managers have the least amount of authority?
a.Functional
b.Project
c.Matrix
d.Circular
ANSWER:a

In which development life cycle do stakeholders define and approve the detailed scope before the start on an iteration?
a.Adaptive
b.Hybrid
c.Incremental
d.Iterative
ANSWER:a

In which product life cycle the scope, schedule, and cost are determined early, and changes to scope are carefully managed?
a.Iterative
b.Incremental
c.Predictive
d.Adaptive
ANSWER:c

In which systems development life cycle do model developers use a model to generate functional requirements and physical design specifications simultaneously?
a.RAD life cycle
b.Prototyping life cycle
c.Spiral life cycle
d.Waterfall life cycle
ANSWER:b

In which of the following areas of management is payback analysis most likely to be used?
a.Resource
b.Communication

c.Cost

d.Quality

ANSWER:c

Joe is a project manager in an IT company and has over the years, gained substantial knowledge in his area of work. However, while managing his team, he often loses his temper. In addition, he fails to be an active listener when his team members approach him with work related challenges. In which of the following areas does Joe need to develop his skills in?

a.Application area knowledge

b.Project environment knowledge

c.Standards and regulations

d.Human relations skills

ANSWER:d

Martha works as a project manager at a bank. Due to certain changes in external factors, Martha needs to make a few alterations in the tactical goals of her project. In such a scenario, which of the following will best help Martha cope with the change?

a.Negotiation

b.Project environment knowledge

c.Motivation

d.Soft skills

ANSWER:b

Mind mapping can be used for developing WBSs using which approach?

a.analogy approach only

b.bottom-up or analogy approach

c.top-down or bottom-up approach

d.any approach

ANSWER:c

Newtech Inc.hires John for the position of a software programmer to work on their new project. Salary paid to John by Newtech Inc.would be an example of which type of costs?

a.direct

b.indirect

c.sunk

d.intangible

ANSWER:a

Projects must operate in a broad organizational environment, and project managers need to consider projects within the greater organizational context. Which approach describes the holistic view of carrying out projects within the context of the organization?

a.Linear analysis

b.Systems thinking

c.Reductionism

d.The silo approach

ANSWER:b

Project procurement management mainly involves:
a.making effective use of the people involved with the project.
b.buying goods and services for a project from outside the performing organization.
c.generating, collecting, disseminating, and storing project information.
d.identifying and analyzing stakeholderneeds while managing and controlling their engagement.
ANSWER:b

Reporting performance, where project stakeholders can identify any necessary changes that may be required to keep the project on track, is a common part of which process?
a.executing
b.closing
c.monitoring and controlling
d.planning
ANSWER:c

Steve, an engineer in a construction company, is at present working on a home construction project. The home is being built for the Robinson family, the owners of the home. Steve is working with his project team and support staff to ensure the project is completed on time. In such a scenario, the project sponsor is ____.
a.Steve
b.the support staff
c.the project team
d.the Robinson family
ANSWER:d

Select an example of external stakeholders for an organization.
a.Top managers
b.Functional managers
c.Employees
d.Competitors
ANSWER:d

Soles is a footwear company which has recently set up its store in Ambrosia.To manufacture its products, Soles incurs a range of different costs. Which would be an example of an indirect cost?
a.Cost of machines to produce shoes
b.Salary paid to factory workers
c.Electricity used to run its factories
d.Cost of leather used to manufacture shoes
ANSWER:c

Team building exercises and motivation techniques are tools used in ____ management.

a.procurement
b.scope
c.resource
d.cost
ANSWER:c

The ____ frame of an organization focuses on providing harmony between the needs of the organization and the needs of people.
a.structural
b.human resources
c.political
d.symbolic
ANSWER:b

The ____ model uses an approach in which developers work with an evolving prototype, using tools such as computer-aided software engineering, joint requirements planning, and joint application design to facilitate rapid prototyping and code generation.
a.prototyping life cycle
b.waterfall life cycle
c.RAD life cycle
d.spiral life cycle
ANSWER:c

The critical path is the ____ path through a network diagram, and it represents the ____ amount of slack or float.
a.longest; longest
b.longest; shortest
c.shortest; longest
d.shortest; shortest
ANSWER:b

The main goal of which process is to produce a cost baseline for measuring project performance and project funding requirements?
a.cost budgeting
b.cost planning
c.cost controlling
d.cost estimating
ANSWER:a

The organization recognizes that a new project exists and completes a project charter during which processes for a new project?
a.initiating
b.planning
c.opening
d.controlling

ANSWER:a

The project scope management knowledge area maps to which process group through the activities of scope validation and scope control?
a.initiating
b.planning
c.executing
d.monitoring and controlling
ANSWER:d

The project schedule management knowledge area maps to which process group through the activity of schedule control?
a.initiating
b.planning
c.executing
d.monitoring and controlling
ANSWER:d

The project cost management knowledge area maps to which process group through the activities of estimating costs and budget determination?
a.initiating
b.planning
c.executing
d.monitoring and controlling
ANSWER:b

The project management plan is the output of which project planning process?
a.integration management
b.quality management
c.scope management
d.procurement management
ANSWER:a

The project stakeholder management knowledge area maps to which process group by identifying stakeholders?
a.initiating
b.planning
c.executing
d.monitoring and controlling
ANSWER:a

The role of a _____ is to provide direction and funding for a project.
a.project sponsor
b.project manager
c.support staff member

d.project team
ANSWER:a

The symbolic perspective of an organization:
a.focuses on different groups' roles and responsibilities to meet the goals and policies set by top management.
b.views the organization as coalitions composed of varied individuals and interest groups.
c.focuses on providing harmony between the needs of the organization and the needs of people.
d.focuses on the meanings of the culture, language, traditions, and image of the organization.
ANSWER:d

Variances are calculated by subtracting the actual cost from which value?
a.earned value
b.schedule variance
c.planned value
d.rate of performance
ANSWER:a

Which action involves defining and documenting the features and functions of the products produced during the project as well as the processes used for creating them?
a.Collecting requirements
b.Defining scope
c.Controlling scope
d.Validating scope
ANSWER:a

Which action involves reviewing the project charter, requirements documents, and organizational process assets to create a scope statement, adding more information as requirements are developed and change requests are approved?
a.Creating scope
b.Defining scope
c.Controlling scope
d.Validating scope
ANSWER:b

Which action involves normalizing acceptance of the project deliverables and during this phase the key project stakeholders, such as the customer and sponsor for the project, inspect and then formally accept the deliverables?
a.Creating scope
b.Defining scope
c.Controlling scope
d.Validating scope
ANSWER:d

Which approach for constructing a WBS uses a similar project's WBS as a starting point?
a.top-down
b.bottom-up
c.mind-mapping
d.analogy
ANSWER:d

Which approach for constructing a WBS involves refining the work into greater and greater levels of detail?
a.analogy
b.bottom-up
c.top-down
d.mind mapping
ANSWER:c

Which approach for constructing a WBS starts with the largest items of the project and breaks them into subordinate items?
a.analogy
b.bottom-up
c.top-down
d.mind mapping
ANSWER:c

Which approach to product development is currently used by many organizations so a predictive set of steps is used as an overall means to coordinate more detailed steps that are adaptively managed?
a.Adaptive
b.Hybrid
c.Predictive
d.Incremental
ANSWER:b

Which is an output of the process of controlling costs?
a.cost forecasts
b.project funding requirements
c.basis of estimates
d.scope baselines
ANSWER:a

Which is true of the schedule performance index (SPI)?
a.It can be used to estimate the projected time to complete the project.
b.It means that a project is behind schedule if an SPI is greater than one.
c.It means that a project is ahead of schedule if SPI is lesser than one or hundred percent.
d.It is the ratio of planned value to actual costs.
ANSWER:a

Which term describes a product produced as part of a project?
a.variance
b.scope
c.deliverable
d.work package
ANSWER:c

Which statement best describes scope?
a.each level of work that is outlined in a work breakdown structure
b.end product created as part of a project that is delivered to the client
c.tasks that are decomposed into smaller tasks in a work breakdown structure
d.work involved in creating the products and the processes used to create them
ANSWER:d

Which output documents how project needs will be analyzed, documented, and managed?
a.requirements traceability matrix
b.requirements management plan
c.WBS
d.project scope statement
ANSWER:b

Which process involves generating ideas by comparing specific project practices or product characteristics to those of other projects or products inside or outside the performing organization?
a.variance
b.benchmarking
c.prototyping
d.decomposition
ANSWER:b

Which document contains a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project?
a.project charter
b.business case
c.project scope statement
d.work breakdown structure
ANSWER:d

Which is recommended for the creation of a good WBS?
a.Any WBS item should be the responsibility of all the people working on it.
b.A unit of work should appear at only one place in the WBS.
c.Each WBS item should be created assuming that the requirements are inflexible.
d.The work content of a WBS item is independent of the WBS items below it.
ANSWER:b

What process involves formal acceptance of the completed project scope by the stakeholders?
a.Scope validation
b.Scope planning
c.Scope control
d.Scope baseline
ANSWER:a

Which term refers to the difference between planned and actual performance?
a.Decomposition
b.Variance
c.Scope validation
d.Scope creep
ANSWER:b

Which process involves developing a working replica of the system or some aspect of the system?
a.Prototyping
b.Variance
c.Decomposition
d.Use case modeling
ANSWER:a

Which process involves identifying and modeling business events, who initiated them, and how the system should respond to them?
a.Prototyping
b.JAD
c.RAD
d.Use case modeling
ANSWER:d

Which process uses highly organized and intensive workshops to bring together project stakeholders—the sponsor, users, business analysts, programmers, and so on—to jointly define and design information systems?
a.Prototyping
b.JAD
c.RAD
d.Use case modeling
ANSWER:b

Which task is at the lowest level of the WBS?
a.variance
b.objective
c.deliverable
d.work package

ANSWER:d

Which document should list and describe all of the deliverables required for the project?
a.project charter
b.scope statement
c.WBS
d.Gantt chart
ANSWER:b

Which technique is used for creating a WBS uses branches radiating from a core idea to structure thoughts and ideas instead of writing down tasks in a list or immediately trying to create a structure for tasks?
a.analogy
b.bottom-up
c.top-down
d.mind mapping
ANSWER:d

Which statement best defines cost variance?
a.planned value plus actual costs
b.earned value minus the actual cost
c.rate of performance minus earned value
d.planned value minus the rate of performance
ANSWER:b

Which statement best defines schedule variance?
a.earned value minus the planned value
b.earned value minus the actual cost
c.planned value plus the earned value
d.planned value plus the rate of performance
ANSWER:a

Which systems development life cycle model assumes that requirements will remain stable after they are defined?
a.Spiral life cycle
b.Waterfall life cycle
c.Prototyping life cycle
d.RAD life cycle
ANSWER:b

Which is an input of the process of controlling costs?
a.cost forecasts
b.work performance data
c.change requests
d.scope baseline

ANSWER:b

Which is true of earned value?
a.It is the actual cost plus the planned cost.
b.It is based solely on the total cost estimate to be spent on an activity.
c.It is an estimate of the value of the physical work actually completed.
d.It is also known as the planned value.
ANSWER:c

What is another term used for budget?
a.earned value
b.actual cost
c.indirect cost
d.planned value
ANSWER:d

Which statement is true regarding indirect costs?
a.directly related to performing the project.
b.those that cannot be allocated to projects.
c.those that can be easily controlled by managers.
d.not directly related to the products or services of a project.
ANSWER:d

Which statement is true of contingency reserves?
a.They allow for future situations that can be partially planned for.
b.They are also known as unknown unknowns.
c.They are not included in a cost baseline.
d.They allow for dollar amounts to be used to cover existing, fixed costs.
ANSWER:a

Which reserves allow for future situations that are unpredictable?
a.Contingency reserves
b.Management reserves
c.Known unknowns
d.Cost baseline reserves
ANSWER:b

Which of the following best describes a kill point in the project life cycle?
a.The period of time given to managers during the feasibility phases to decide on the cost, quality, and time constraints for the project
b.A review of the status of a project at each phase of development to determine if it should be continued, redirected, or terminated
c.The point of time in the project lifecycle after which it is impossible to terminate a running project
d.The final submission of the project deliverables after which the project is terminated

ANSWER:b

Which statement best describes outsourcing?
a.An organization selling its products in a market outside its domestic market
b.An organization's acquisition of goods and services from an outside source
c.An organization setting up manufacturing and retailing facilities in a new country
d.An organization's use of virtual teams with employees located in different countries
ANSWER:b

Which is a disadvantage for virtual teams compared to traditional teams?
a.Increased costs for office space and support
b.Reduced opportunities for informal transfer of information
c.Limited flexibility in team working hours
d.Reduced dependence on technology and processes for accomplishing work
ANSWER:b

Which characteristic is true of virtual teams?
a.It is easier for a virtual team to build relationships and trust.
b.Negative incentives do not impact virtual team members.
c.It is important to select team members carefully.
d.As they never meet, virtual teams do not have conflicts.
ANSWER:c

Which observation is true of the agile approach to software development?
a.In the agile method, requirements and solutions evolve through collaboration.
b.An agile approach sets scope goals, but leaves time and cost goals flexible.
c.Agile is a predictive model of software development.
d.In the agile approach, requirements must be clearly expressed early in the life cycle.
ANSWER:a

Which characteristic highlights a difference between projects and operations?
a.Projects are undertaken to sustain an organization's business whereas operations are not.
b.Operations are undertaken to create unique products, services, or results whereas projects are not.
c.Projects are temporary endeavors whereas an organization's operations are ongoing in nature.
d.Operations have well-defined objectives whereas projects do not need to have a unique purpose.
ANSWER:c

Which objective is true of projects?
a.They have an indefinite beginning and end.
b.They have a unique purpose.
c.They are developed using regressive elaboration.
d.They are permanent in nature.

ANSWER:b

Which characteristic of organizational culture refers to the degree to which the organization monitors and responds to changes in the external environment?
a.Means-ends orientation
b.Open-systems focus
c.Conflict tolerance
d.Risk tolerance
ANSWER:b

Which term refers to a product or service, such as a technical report, a training session, a piece of hardware, or a segment of software code, produced or provided as part of a project?
a.Deliverable
b.Input
c.System
d.Resource
ANSWER:a

Which of the following is true of the project life cycle?
a.In the early phases of a project life cycle, resource needs are usually lowest.
b.In the later phases of the project life cycle, the level of uncertainty is usually the highest.
c.It is much more expensive to make major changes to a project during the earlier phases than the latter phases.
d.More resources are usually needed during the initial phases of a project than during the middle or final phases.
ANSWER:a

Which knowledge area involves defining and managing all the work required to complete the project successfully?
a.Project resource management
b.Project scope management
c.Project time management
d.Project cost management
ANSWER:b

Which characteristic of organizational culture describes the degree to which management's decisions take into account the effect of outcomes on people within the organization?
a.Member identity
b.Group emphasis
c.People focus
d.Unit integration
ANSWER:c

What term is used for analogous estimates?
a.bottom-up

b.top-down
c.parametric
d.budgetary
ANSWER:b

Which statement is true of analogous estimates?
a.Their main disadvantage is that they cost more than other techniques.
b.They are the only technique which do not require expert judgement.
c.They are most reliable when previous projects are similar in fact with current projects.
d.They use project characteristics in a mathematical model to estimate project costs.
ANSWER:c

Which type of estimating uses project characteristics in a mathematical model to estimate project costs?
a.rough order of magnitude estimating
b.parametric
c.bottom-up
d.analogous
ANSWER:b

Which is most likely to be a reason for inaccuracies in information technology cost estimates?
a.Estimates take a long time to be worked out.
b.People lack estimating experience.
c.Human beings are biased toward overestimation.
d.Only software development provides the scope for estimates to be accurate.
ANSWER:b

Which type of estimate should be used if the cost estimate for a project is used a basis for contract awards and performance reporting?
a.budgetary
b.definitive
c.rough order of magnitude
d.analogous
ANSWER:b

What type of estimate is a cost estimation tool that involves estimating individual work items or activities and summing them to get a project total?
a.budgetary
b.parametric
c.bottom-up
d.analogous
ANSWER:c

Which statement is true of bottom-up estimates?
a.They are based on the actual cost of a previous, similar project.

b.They are also known as parametric estimating.

c.They are most accurate when they involve large, extensive work items.

d.They are time-intensive and expensive to develop.

ANSWER:d

Which characteristic of organizational culture refers to the degree to which employees identify with the organization as a whole, rather than with their types of job or profession?

a.Member identity

b.People focus

c.Group emphasis

d.Unit integration

ANSWER:a

Which characteristic of organizational culture refers to the degree to which departments within an organization are encouraged to coordinate with each other?

a.Member identity

b.People focus

c.Group emphasis

d.Unit integration

ANSWER:d

Which project management knowledge area ensures that the project will satisfy the stated or implied needs for which it was undertaken?

a.Project cost management

b.Project time management

c.Project risk management

d.Project quality management

ANSWER:d

Which project management knowledge area primarily involves generating, collecting, disseminating, and storing project information?

a.Project cost management

b.Project procurement management

c.Project time management

d.Project communications management

ANSWER:d

Which project management knowledge area is an overarching function that affects and is affected by the different knowledge areas?

a.Project cost management

b.Project stakeholder management

c.Project integration management

d.Project communications management

ANSWER:c

Which tool is most likely to be used in project schedule management?
a.Payback analysis
b.Impact matrices
c.Gantt charts
d.Fishbone diagrams
ANSWER:c

Which tool can best help in efficient communication management?
a.Kick-off meetings
b.Impact matrices
c.Requests for quotes
d.Fast tracking
ANSWER:a

Which statement is true of project management?
a.It is a simple discipline with a limited scope.
b.It has specific tools which work universally across all kinds of projects.
c.It does not guarantee successes for all projects.
d.Its framework consists solely of project management knowledge areas.
ANSWER:c

Which of the following is true of program managers?
a.They report to project managers who represent the next level in the hierarchy.
b.They recognize that managing a program is simpler than managing a project.
c.They provide leadership and direction for project managers heading the projects within a program.
d.They are responsible solely for the delivery of project results.
ANSWER:c

Which goal distinguishes project management and portfolio management?
a.Project management involves making wise investment decisions whereas portfolio management does not.
b.Portfolio management is an easy task whereas project management is a more difficult task.
c.Portfolio management asks questions like, "Are we carrying out projects efficiently?" whereas project management asks questions such as "Are we investing in the right areas?"
d.Project management addresses specific, short-term goals whereas portfolio management focuses on long-term goals.
ANSWER:d

Which of the following questions reflects the strategic goals of project portfolio management?
a.Are we carrying out projects well?
b.Are projects on time and on budget?
c.Are we investing in the right areas?
d.Do stakeholders know what they should be doing?
ANSWER:c

Which attribute best defines the role of leaders?
a.They focus on short-term objectives.
b.They work on achieving primarily tactical goals.
c.They work solely toward day-to-day details of meeting specific tasks.
d.They inspire people to reach goals.
ANSWER:d

Which organization provides certification as a Project Management Professional?
a.PMS
b.PMC
c.PMI
d.PMP
ANSWER:c

Which of the following refers to a set of principles that guides decision making based on personal values of what is considered right and wrong?
a.Ethics
b.Civics
c.Laws
d.Politics
ANSWER:a

Which attribute is true of low-end tools of project management software?
a.They are designed for especially large projects with multiple users.
b.Their main advantage is that they have unlimited functionality.
c.They provide basic project management features.
d.They are referred to as enterprise project management software.
ANSWER:c

Which type of tool is usually recommended for small projects and single users?
a.Low-end
b.Midrange
c.High-end
d.Upper range
ANSWER:a

What is a difference between low-end and midrange tools of the project management software?
a.Low-end tools are designed to handle primarily multiple users whereas midrange tools are created to handle single users.
b.Low-end tools provide robust capabilities to handle dispersed workgroups whereas midrange tools do not.
c.Midrange tools provide basic project management features whereas low-end tools offer enterprise and portfolio management functions.

d.Midrange tools are designed to handle larger projects than low-end tools.
ANSWER:d

Which of the following is true of a matrix organizational structure?
a.In a matrix organizational structure, employees are organized into departments according to their skills, and there is little interaction between employees from different departments.
b.Project managers in matrix organizations have staff from only a single functional area working on their projects.
c.In a strong matrix organizational structure, the project manager controls the project budget and has moderate to high authority.
d.A matrix organizational structure is hierarchical, but instead of functional managers reporting to the CEO, program managers report to the CEO.
ANSWER:c

What is the first step in project cost management?
a.allocate project cost estimates to individual material resources
b.plan how costs will be managed
c.control project costs and monitor cost performance
d.develop several estimates of costs for different types of resources
ANSWER:b

Which statement is true of a order of magnitude estimate?
a.It is used to allocate money into an organization's budget.
b.It provides an estimate of what a project will cost.
c.Its timeframe is always less than a year prior to project completion.
d.It is a type of estimate that is done in the final stages of a project.
ANSWER:b

What is a table that lists requirements, their various attributes, and the status of the requirements to ensure that all are addressed referred to as?
a.requirements traceability matrix
b.Gantt chart
c.state transition table
d.entity-attribute-value model
ANSWER:a

What is scope creep?
a.the tendency for project scope to keep getting bigger and bigger
b.subdividing project deliverables into smaller pieces
c.the approved project scope statement and its associated WBS.
d.a task at the lowest level of the WBS
ANSWER:a

What is the main technique used in creating a WBS, which involves subdividing project deliverables into smaller pieces?

a.conglomeration
b.accumulation
c.decomposition
d.catalyzation
ANSWER:c

What is the purpose of a cost performance index (CPI)?
a.indicate that a project is under budget if CPI is less than one
b.estimate the projected cost of completing the project
c.indicate that the planned and actual costs are equal if CPI is more than one
d.estimate the ratio of earned value to planned value
ANSWER:b

What is a rough order of magnitude estimate also referred to as?
a.definitive
b.budgetary
c.final
d.ballpark
ANSWER:d

What type of estimate is a cost estimation tool used to allocate money into an organization's budget?
a.budgetary
b.definitive
c.rough order of magnitude
d.ballpark
ANSWER:a

What type of estimate is used for making many purchasing decisions for which accurate estimates are required and for estimating final project costs?
a.budgetary
b.definitive
c.rough order of magnitude
d.final
ANSWER:b

Which type of estimate uses the actual cost of a previous, similar project as the basis for estimating the cost of the current project?
a.definitive estimates
b.parametric estimates
c.bottom-up estimates
d.analogous estimates
ANSWER:d

What term is used for the amount of time an activity can be delayed without delaying the early

start date of any immediately following activities?

a.forward pass

b.backward pass

c.fast tracking

d.free slack

ANSWER:d

What term is used for the amount of time an activity can be delayed from its early start without delaying the planned project finish date?

a.total slack

b.free float

c.backward pass

d.forward pass

ANSWER:a

Which process involves developing an approximation of the costs of resources needed to complete a project?

a.determining the budget

b.finalising the cost baseline

c.controlling costs

d.estimating costs

ANSWER:d

Which problem-solving approach requires defining the scope of a system, dividing it into its components, and then identifying and evaluating its problems, opportunities, constraints, and needs?

a.Linear programming

b.Independent component analysis

c.Principal component analysis

d.Systems analysis

ANSWER:d

Which perspective of an organization focuses on different groups' roles and responsibilities in order to meet the goals and policies set by top management?

a.Structural frame

b.Human resources frame

c.Political frame

d.Symbolic frame

ANSWER:a

What type of management includes the processes required to ensure that a project team completes a project within an approved budget?

a.project scope management

b.project quality management

c.project time management

d.project cost management
ANSWER:d

Which perspective on organizations assumes that organizations are coalitions composed of varied individuals and interest groups?
a.Political frame
b.Symbolic frame
c.Structural frame
d.Human resources frame
ANSWER:a

Which process involves allocating the overall cost estimate to individual work items to establish a baseline for measuring performance?
a.determining the budget
b.finalizing policies for project costs
c.controlling costs
d.estimating costs
ANSWER:a

Which method is used for determining the estimated annual costs and benefits for a project?
a.Critical path analysis
b.Cash flow analysis
c.Present value analysis
d.Requirements analysis
ANSWER:b

Which statement is true of tangible costs?
a.They cannot be calculated in monetary terms.
b.They can be easily measured.
c.They are difficult to quantify.
d.Their examples include goodwill and prestige.
ANSWER:b

Which costs are difficult to measure in monetary terms?
a.Intangible costs
b.Direct costs
c.Tangible costs
d.Fixed costs
ANSWER:a

Which process results in a cost baseline as a main output?
a.cost controlling
b.cost estimating
c.cost budgeting
d.cost planning

ANSWER:c

What does the process of controlling costs primarily involve?
a.determining the policies for project costs
b.managing changes to the project budget
c.finalising the procedures for project costs
d.determining a basis for estimates
ANSWER:b

Work performance information and cost forecasts are main outputs of which process?
a.cost budgeting
b.cost estimating
c.cost control
d.cost pricing
ANSWER:c

Which process helps develop an accurate projection of a project's financial expenses and benefits?
a.critical path analysis
b.fast tracking
c.life cycle costing
d.crashing
ANSWER:c

What is the latest possible time an activity might begin without delaying the project finish date?
a.early finish date
b.late finish date
c.late start date
d.early start date
ANSWER:c

Which technique involves doing activities in parallel that one would normally do in sequence?
a.Critical chain scheduling
b.Crashing
c.Fast tracking
d.PERT analysis
ANSWER:c

Which technique is used for making cost and schedule trade-offs to obtain the greatest amount of schedule compression for the least incremental cost?
a.dependency
b.crashing
c.critical chain scheduling
d.feeding buffers
ANSWER:b

Which law states that work expands to fill the time allowed?
a.Murphy's Law
b.Miller's Law
c.Parkinson's Law
d.Einstein's Law
ANSWER:c

What is an accurate difference between the Program Evaluation and Review Technique (PERT) and critical path method (CPM)?
a.CPM addresses the risk associated with duration estimates whereas PERT does not.
b.Unlike CPM, PERT estimates only when there is no risk of uncertainty.
c.CPM involves more work than PERT because it requires several duration estimates.
d.PERT uses different duration estimates whereas CPM uses one specific duration estimate.
ANSWER:d

Which is a similarity between scope control and schedule control?
a.Both are initial processes of project time management.
b.Both of their primary goals is to define project goals and milestones.
c.Both are portions of the integrated change control process under project integration management.
d.Both of these processes should occur before estimating activity durations.
ANSWER:c

Which is an output of schedule control?
a.change requests
b.activity attributes
c.resource requirements
d.milestones lists
ANSWER:a

Where would a draft schedule for a project most likely be found?
a.project buffer
b.project charter
c.resource breakdown structure
d.project's dummy activities list
ANSWER:b

Which is a similarity between the crashing and fast tracking?
a.both spread out tasks over a long period of time to ensure the quality of work is maintained
b.both invariably result in increases in total project costs
c.both can shorten the time needed to finish a project
d.both are network diagramming techniques used primarily to predict total project duration
ANSWER:c

What processes include defining and authorizing a project or project phase?
a.Initiating
b.Planning
c.Executing
d.Monitoring and controlling
ANSWER:a

What processes include devising and maintaining a workable scheme to ensure that the project addresses the organization's needs?
a.Initiating
b.Planning
c.Executing
d.Monitoring and controlling
ANSWER:b

What is the first process involved in project schedule management?
a.defining activities
b.estimating activity durations
c.planning schedule management
d.sequencing activities
ANSWER:c

Which process in project schedule management involves identifying the specific tasks that the project team members and stakeholders must perform to produce the project deliverables?
a.defining activities
b.sequencing activities
c.developing the schedule
d.estimating activity durations
ANSWER:a

Which processes include acquiring and developing the project team, performing quality assurance, distributing information, managing stakeholder expectations, and conducting procurements?
a.monitoring and controlling
b.executing
c.planning
d.initiating
ANSWER:b

What process group does the project integration management knowledge area map to through the activities of developing project charters?
a.initiating
b.planning
c.executing
d.monitoring and controlling

ANSWER:a

Which network diagramming technique uses boxes to represent activities?
a.PDM
b.CPM
c.ADM
d.PERT
ANSWER:a

Which dependencies do AOA network diagrams use?
a.start-to-start
b.finish-to-start
c.finish-to-finish
d.start-to-finish
ANSWER:b

What is developed in the Project Integration Management knowledge area?
a.schedule management plan
b.project management plan
c.WBS
d.quality management
ANSWER:b

Which planning process is within the Project Scope Management knowledge area?
a.Schedule development
b.Developing a project management plan
c.Creation of a WBS
d.Quality planning
ANSWER:c

Which type of dependencies are inherent in the nature of work being performed on a project?
a.mandatory
b.discretionary
c.external
d.random
ANSWER:a

Which provide a standard format for displaying project schedule information by listing project activities and their corresponding start and finish dates in a calendar format?
a.Gantt charts
b.Critical path analysis
c.Arrow diagramming method
d.PERT analysis
ANSWER:a

Which technique involves network diagramming and is used primarily to predict total project duration?
a.Gantt chart
b.critical path analysis
c.resource breakdown structure
d.arrow diagramming method
ANSWER:b

Which dependencies are sometimes referred to as soft logic and should be used with care because they may limit later scheduling options?
a.mandatory
b.discretionary
c.external
d.inherent
ANSWER:b

Which dependencies involve relationships between project and non-project activities?
a.mandatory
b.discretionary
c.external
d.inherent
ANSWER:c

Which framework is an iterative software development process that focuses on team productivity and delivers software best practices to all team members?
a.Agile Unified Process
b.Dynamic Systems Development Method
c.Rational Unified Process
d.Six Sigma
ANSWER:c

Which is an example of a pre-initiation task?
a.Drawing up a work breakdown structure
b.Developing a business case for a project
c.Drafting the project charter
d.Identifying stakeholders
ANSWER:b

What is one of the main outputs of the initiation process?
a.creating the work breakdown structure
b.selecting the project manager
c.developing the project charter
d.identifying the project sponsor
ANSWER:c

What is the main purpose of project plans?
a.schedule management plans
b.define project scope
c.estimate activity resources
d.guide project execution
ANSWER:d

What is often the most difficult and unappreciated process in project management?
a.initiating
b.planning
c.executing
d.monitoring and controlling
ANSWER:b

Which planning process is associated with project scope management?
a.Collecting requirements
b.Performing qualitative risk analysis
c.Planning schedule management
d.Estimating costs
ANSWER:a

Which is true of a finish-to-finish dependency?
a.It is a dependency in which the "from" activity cannot start until the "to" activity or successor is started.
b.It is a dependency in which in which the "from" activity must finish before the "to" activity or successor can start.
c.It is a dependency in which the "from" activity must be finished before the "to" activity can be finished.
d.It is a dependency in which the "from" activity must start before the "to" activity can be finished.
ANSWER:c

Which is true of dummy activities?
a.They have long durations.
b.They show logical relationships between activities.
c.They have a large range of resources.
d.They have limited time periods.
ANSWER:a

Which is one of the main outputs of estimating activity resources process?
a.project documents update
b.milestone list
c.breakdown structure
d.activity duration estimate
ANSWER:a

What tool provides a basis for creating the project schedule and performing earned value management for measuring and forecasting project performance?
a.scope statement
b.cost management plan
c.work breakdown structure
d.project charter
ANSWER:c

Which are outputs of the executing process of project integration management?
a.Deliverables
b.Issue logs
c.Resource calendars
d.Enterprise environmental factor updates
ANSWER:a

What process provides enterprise environmental factors as an output?
a.project integration management
b.project quality management
c.project human resource management
d.project procurement management
ANSWER:c

Which process includes measuring progress toward project objectives and taking corrective action to match progress with the plan?
a.Planning
b.Monitoring and controlling
c.Executing
d.Initiating
ANSWER:b

Which process involves gaining stakeholder and customer acceptance of the final products and services and bringing the project, or project phase, to an orderly end?
a.executing
b.closing
c.planning
d.monitoring
ANSWER:b

Which characteristic of organizational culture describes the degree to which management's decisions take into account the effect of outcomes on people within the organization?
a.Member identity
b.Group emphasis
c.People focus
d.Unit integration

ANSWER:c

Which characteristic of organizational culture refers to the degree to which employees identify with the organization as a whole, rather than with their types of job or profession?
a.Member identity
b.People focus
c.Group emphasis
d.Unit integration
ANSWER:a

Which characteristic of organizational culture refers to the degree to which departments within an organization are encouraged to coordinate with each other?
a.Member identity
b.People focus
c.Group emphasis
d.Unit integration
ANSWER:d

Which is true about the agile method?
a.It is often used when a project team can express the scope early in the product life cycle.
b.It is used when a project team wants to provide a potentially shippable product earlier rather than later.
c.It uses several iterations or deliveries of software instead of waiting until the end of the project to provide a product.
d.It is used when project teams want to use the predicative approach to a project.
ANSWER:c

Which project would be compatible with the use of the agile approach?
a.Projects with inexperienced and dispersed teams
b.Projects that have a fairly rigid completion date
c.Projects with clear-up front requirements
d.Projects that have more flexible scheduling
ANSWER:d

Which activity is a part of the Scrum planning process?
a.Determining how many sprints will compose each release
b.Demonstrating the product during a sprint review meeting
c.Completing tasks each day during sprints
d.Creating sprint backlog
ANSWER:d

What important Scrum artifact is used to graphically display progress on each sprint during the monitoring and controlling process?
a.WBS
b.sprint backlog

c.burndown chart

d.product backlog

ANSWER:c

Which document is most likely to include planned project start and end dates which serve as the starting points for a detailed schedule?

a.resource breakdown structure

b.milestones list

c.organizational process assets update

d.project charter

ANSWER:d

Which statement best describes the difference between an activity list and an activity attribute?

a.As opposed to an activity attribute, an activity list provides resource requirements and constraints related to activities.

b.An activity list provides a more concrete list of milestones for a project than an activity attribute.

c.An activity attribute is a tabulation of activities to be included on a project schedule whereas an activity list is not.

d.An activity attribute provides more schedule-related information about each activity than an activity list.

ANSWER:d

Which term is used for a significant event on a project that normally has no duration?

a.milestone

b.activity attribute

c.activity sequence

d.schedule baseline

ANSWER:a

判断

A backward pass through the network diagram determines the early start and early finish dates for each activity.
false

A budgetary estimate is the most accurate of the three types of estimates.
false

According to the symbolic frame, the most important aspect of any event in an organization is not what actually happened, but what it means.
true

A cost management plan can include organizational procedures links, control thresholds, and process descriptions.
true

A dependency pertains to the sequencing of project activities or tasks.
true

A difference between operations and projects is that operations end when their objectives have been reached, whereas projects do not.
false

A disadvantage of using Gantt charts is that they do not provide a standard format for displaying planned project schedule information.
false

A drawback of the precedence diagramming method is that it cannot be used unless dummy activities are employed.
false

A drawback of the project management software is that it does not have the capacity to calculate the critical path(s) for a project.
false

After defining project activities, the next step in project schedule management is developing the schedule.
false

Agile methods are used when deliverables have a low degree of change.

false

A merge occurs when one node precedes multiple nodes.
false

A milestone list is an output associated with the Project Scope Management knowledge area.
false

An activity is an element of work that has an expected duration, cost, and resource requirements.
true

Analogous estimates are called activity-based costing.
false

Analogous estimates are the most accurate technique to estimate costs.
false

A negative schedule variance means that it took less time than planned to perform the work.
false

An organizational culture with strong unit integration makes the project manager's job more difficult.
false

An organization that uses a project organizational structure earns their revenue primarily from performing projects for other groups under contract.
true

An organization usually commits more money as a project continues, therefore a management review should occur after each phase to evaluate progress, potential success, and continued compatibility with organizational goals.
true

An organization's project management plan expresses the vision, mission, goals, objectives, and strategies of the organization.
false

A project manager's primary role is to provide the funding for a project.
false

A project's stakeholders include its customers, users, and suppliers.
true

A schedule management plan includes information which describes the format and frequency

of schedule reports required for the project.
true

A schedule performance index of one means that the project is on schedule.
true

A sprint review is a meeting in which the team demonstrates to the product owner what it has completed during the sprint.
true

A Tracking Gantt chart is based on the percentage of work completed for project tasks or the actual start and finish dates.
true

A unit of work should appear at only one place in the WBS.
true

A work package must always represent less than 80 hours of work.
false

A work package represents one component of the product that the project aims to deliver.
false

Budgetary estimates are made even before a project is officially started.
true

Contingency reserves are also known as unknown unknowns.
false

Critical chain scheduling assumes that resources multitask and maximizes multitasking.
false

Decisions and actions taken in one knowledge area at a certain time rarely affect other knowledge areas.
false

Definitive estimates are made one year or less prior to project completion.
true

Deliverables are only product-related, such as a piece of hardware or software.
false

Determining the budget involves allocating the project cost estimate to individual work items over time.
true

Earned value management is a tool primarily used in resource management.
false

Effective program managers recognize that managing a project is much more complex than managing a program.
false

Estimates should become more accurate as time progresses.
true

Every project should have a well-defined objective.
true

Given the project management software that is available, it is relatively easy to create a good WBS.
false

Good project managers assume that their definition of success is the same as the sponsors.
false

Identifying the project sponsor is a pre-initiation task.
true

If an important supplier goes out of business, management reserves can be set aside to cover the resulting costs.
true

If cost variance is a positive number, it means that performing the work costs more than planned.
false

If the cost performance index (CPI) is less than 100 percent, the project is under budget.
false

In a bottom-up estimate, the size of the individual work items is one of the factors that drives the accuracy of the estimates.
true

In a critical path analysis, the shortest path is what drives the completion date for the project.
false

In a Gantt chart, thick black bars represent milestones achieved in a project.
false

In an earned value chart, when the actual cost line is right on or above the earned value line, it indicates that costs are less than planned.
false

In a network diagram, it is mandatory for every item on the WBS to be shown instead of only those activities with dependencies.
false

Individual projects always address strategic goals whereas portfolio management addresses tactical goals.
false

Information from the project charter provides a basis for further defining the project scope.
true

Initiating and closing tasks are usually the longest and require the most amount of resources and time.
false

Initiating processes are not required to end a project.
false

Initiating processes take place during each phase of a project.
true

In order to be realistic, a project manager should always set discrete goals instead of a range of objectives.
false

In project schedule management, the next step after sequencing activities is to define these activities.
false

In project schedule management, the primary output of defining activities is a schedule management plan.
false

Intangible costs can be easily measured in monetary terms.
false

Internal stakeholders include groups affected by the project such as government officials or concerned citizens.
false

In the Scrum method, team members work as a self-directed group coached by the

ScrumMaster.
true

It is important for project managers to focus on indirect costs because they can be easily controlled.
false

It is important for project managers to understand that every cost estimate is unique.
true

It is important for the activity list and activity attributes to be in agreement with the work breakdown structure.
true

It is mandatory for project managers working on large information technology projects to be experts in the field of information technology.
false

It is much more expensive to make major changes to a project during the earlier phases.
false

IT project managers must be able to present and discuss project information both in financial and technical terms.
true

Key outcomes of the executing process group are formal acceptance of the work and creation of closing documents.
false

Kick-off meeting agendas are usually recorded in a Word document.
true

Knowing the amount of float allows project managers to know whether a project schedule is flexible.
true

Leadership style has no impact on the success of virtual teams.
false

Managing the triple constraint primarily involves making trade-offs between resources and quality.
false

Many information technology projects also require detailed functional and design specifications for developing software, which also should be referenced in the detailed scope statement.

true

Many organizations provide different guidelines and templates for developing WBSs.
true

Many project management activities occur as part of the planning process group.
true

Maturity models, statistical methods, and test plans are examples of tools used in quality management.
true

Milestones are easy to achieve and are always achieved through one main activity.
false

Mind mapping allows people to write and even draw pictures of ideas in a nonlinear format.
true

Monitoring and controlling processes overlap all of the other project management process groups.
true

Most colleges and universities have very strong functional organizations.
true

Most people believe that the underlying causes of many companies' problems can be traced to its organizational structure.
false

Network diagrams are the preferred technique for showing activity sequencing.
true

One of PERT's main disadvantages is that it does not address the risk associated with duration estimates.
false

One of the main reasons why project management is challenging is because of the factor of uncertainty.
true

One of the reasons why project cost estimates are inaccurate is because human beings are biased toward underestimation.
true

Opponents of a project do not belong to the category of stakeholders.

false

Overrun is the additional percentage amount by which estimates exceed actual costs.
false

Parametric models are reliable when the models are flexible in terms of the project's size.
true

Program managers are change agents.
true

Project initiation involves taking the actions necessary to ensure that activities in the project plan are completed.
false

Project managers and their teams must recognize the effects of any project on the interests and needs of the entire system or organization instead of focusing on the immediate concerns of the project.
true

Project managers in matrix organizations have staff from various functional areas working on their projects.
true

Project managers must conduct cash flow analysis to determine net present value.
true

Project managers must have cooperation from people in other parts of the organization.
true

Project managers must take adequate time to identify, understand, and manage relationships with all project stakeholders.
true

Project managers should lead projects in isolation in order to truly serve the needs of the organization.
false

Project managers work with the project sponsors to define success for particular projects.
true

Project procurement management primarily involves identifying stakeholder needs while managing their engagement throughout the life of the project.
false

Project resource management is concerned with making effective use of the people involved with a project.
true

Project schedules grow out of basic documents such as the project charter.
true

Project scope management includes the processes involved in defining and controlling what is or is not included in a project.
true

Project scope statements must include the project boundaries, constraints, and assumptions.
false

Projects should be developed in increments.
true

Project work is most successful in an organizational culture where activities are organized around individuals.
false

Questions about how a team will track schedule performance is related to a project's scope.
false

Responsibility assignment matrices and project organizational charts are examples of tools used in procurement management.
false

Scope creep if not managed well can lead to the failure of information technology projects.
true

Scope refers to all the work involved in creating the products of the project and the processes used to create them.
true

Spreadsheets are a common tool for cost estimating, cost budgeting, and cost control.
true

Stakeholder analyses, work requests, and project charters are tools used in integration management.
true

Standards and guidelines to follow when performing project management must be devised by top management.
true

Start-to-finish relationships are the most frequently used dependencies between activities.
false

Supporting details for an estimate include the ground rules and assumptions used in creating the estimate.
true

Systems analysis addresses the business, technological, and organizational issues associated with creating, maintaining, and modifying a system.
false

The arrows in a network diagram represent missed milestones in a project.
false

The best way to sustain a project is to withhold the required money, human resources, and visibility for the project.
false

The burndown chart is a Scrum created artifact that provides a list of features prioritized by business value.
false

The critical path on a project can change as the project progresses.
true

The DMAIC (Define, Measure, Analyze, Improve, and Control) methodology of the Six Sigma projects, is used to improve an existing business process.
true

The enterprise project management software, which aids project and portfolio management, is a low-end tool.
false

The executing process group generally requires the most resources.
true

The executing tasks of the WBS remain constant from project to project.
false

The final process in project schedule management is developing the schedule.
false

The format of the WBS dictionary is essentially the same for all projects.
false

The formulas for variances and indexes start with EV, the earned value.
true

The importance of stakeholders' needs and expectations is limited to the beginning of a project.
false

The introduction of new software makes basic tools, such as Gantt charts and network diagrams, inexpensive and easy to create.
true

The kick-off meeting is always held before the business case and project charter are completed.
false

The last phase of the traditional project life cycle is the implementation phase.
false

The level of activity and length of each process group varies for every project.
true

The main disadvantage of crashing is that it lengthens the time needed to finish a project.
false

The main purpose of the WBS is to define all of the work required to complete a project.
true

The nature of hardware development projects is more diverse than software-oriented projects.

false

The only responsibility of a project manager is to meet the specific scope, time, and cost goals of a project.
false

The output of the stakeholder management strategy results is a project charter.
false

The pre-initiation phase of a project using the Scrum method does not involve project charters, stakeholder management strategy, and kick-off meetings.
false

The primary output of the planning cost management process is a change request.
false

The primary role of project stakeholder management is to ensure that the project will satisfy the stated needs for which it was undertaken.
false

The project management plan and project funding requirements are inputs of the process of controlling costs.
true

The project management plan, project documents, enterprise environmental factors, and organizational process assets are the primary inputs for creating a WBS.
true

The project organizational structure is the most efficient choice for most IT projects.
false

The project scope statement should reference supporting documents, such as product specifications that will affect what products are produced or purchased, or corporate policies, which might affect how products or services are produced.
true

The project's size, complexity, importance, and other factors do not affect how much effort is spent on collecting requirements for scope planning.
false

The Rational Unified Process (RUP) framework is incompatible with the PMBOK process.
false

The same organization can have different subcultures.
true

The scope baseline in a WBS consists of the requirements documentation and enterprise environmental factors.
false

The scope management plan can be informal and broad or formal and detailed, based on the needs of the project.
true

The scope of a project is clear and specific from the start.
false

The tasks in a WBS must be developed as a sequential list of steps.
false

The team members of a virtual team are all of the same nationality.

false

The technique of fast tracking can result in lengthening the project schedule.
true

The two main items for monitoring and controlling in the Scrum framework are the daily Scrum and the sprint retrospectives.
true

The WBS provides a basis for creating the project schedule and performing earned value management for measuring and forecasting project performance.
true

To be a successful manager, the only skills an IT project manager needs to possess are excellent technical skills.
false

To define activities, the project team should start with reviewing the schedule management plan, scope baseline, enterprise environmental factors, and organizational processes.
true

Until the 1980s, project management primarily focused on providing schedule and resource data to top management in the military, computer, and construction industries.
true

Using a systems approach is critical to successful project management.
true

When deciding what projects to invest in or continue, one should include sunk costs.
false

When you separate business and organizational issues from project management planning, you do a better job of ensuring project success.
false

填空

A(n)_____ is a series of actions directed toward a particular result.
ANSWER: process

A(n) _____ estimate is done very early in a project or even before a project is officially started.
ANSWER: rough order of magnitude (ROM)
ROM
rough order of magnitude

Accountants define _____ as a resource sacrificed or foregone to to achieve a specific objective.
ANSWER: cost

A(n) _____ is a temporary endeavor undertaken to create a unique product, service, or result.
ANSWER: project

A(n) _____ is "a group of related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits and control not available from managing them individually."
ANSWER: program

A(n) _____ describes how things should be done.
ANSWER: methodology

A project's sponsor is also known as a(n) _____.
ANSWER: primary customer

A(n) _____ is a document that includes stakeholders' roles, names, organizations, and contact information.
ANSWER: stakeholder register

A(n) _____ is a meeting held at the beginning of a project so that stakeholders can meet each other, review the goals of the project, and discuss future plans.
ANSWER: kick-off meeting

A risk register is the output of _____.
ANSWER: risk management

A(n) _____ is the person responsible for the business value of the project and for deciding

what work to do and in what order when using a Scrum method.
ANSWER: product owner

A(n) _____ is a set period of time, normally two to four weeks, during which specific work must be completed and made ready for review when using Scrum methods.
ANSWER: sprint

A(n) _____ is the person who ensures that the team is productive, facilitates the daily Scrum, enables close cooperation across all roles and functions, and removes barriers that prevent the team from being effective.
ANSWER: ScrumMaster

After reviewing the project management plan, project charter, enterprise environmental factors, and organizational process assets, the project team uses expert judgment, analytical techniques, and meetings to develop the _____.
ANSWER: schedule management plan

A major element of good practice concerns _____, which addresses the authority and control for key IT activities in
organizations, including IT infrastructure, IT use, and project management.
ANSWER: IT governance

A(n) _____ refers to a product or service, such as a report, a training session, a piece of hardware, or a segment of
software code, produced or provided as part of a project.
ANSWER: deliverable

A(n) _____ is a framework for describing the phases of developing information systems.
ANSWER: SDLC
systems development life cycle
systems development life cycle (SDLC)

A(n) _____ Gantt chart compares planned and actual project schedule information.
ANSWER: Tracking

A(n) _____ is an overall model for thinking about things as systems.
ANSWER: systems philosophy

A cost management plan is a subsidiary of the _____ plan.
ANSWER: project management

A(n) _____ is a table that lists requirements, their various attributes, and the status of the requirements to ensure that all are addressed.
ANSWER: requirements traceability matrix
requirements traceability matrix (RTM)

RTM

A(n) _____ is a deliverable-oriented grouping of the work involved in a project that defines its total scope.
ANSWER: WBS
work breakdown structure

A white diamond on a Tracking Gantt chart represents a(n) _____.
ANSWER: slipped milestone

A(n) _____ is a time-phased budget that project managers use to measure and monitor cost performance.
ANSWER: cost baseline

A(n) _____ for a project is the series of activities that determine the earliest time by which the project can be completed.
ANSWER: critical path

A(n) _____ is a document that describes detailed information about each WBS item.
ANSWER: WBS dictionary

A(n) _____ determines the early start and early finish dates for each activity in a project.
ANSWER: forward pass

A(n) _____ is a cross-functional team of five to nine people who organize themselves and the work to produce the desired results for each sprint.
ANSWER: Scrum team
development team

A(n) _____ is a Scrum artifact and consists of the highest-priority items from the product backlog to be completed in a sprint.
ANSWER: sprint backlog

A(n) _____ is a schematic display of the logical relationships among project activities and their sequencing.
ANSWER: network diagram

A hierarchy is used to show the levels of _____ in the WBS.
ANSWER: task

A work package is a task at the _____ level of the WBS.
ANSWER: lowest

A drawback of using _____ or sample files is that managers and their teams might rely heavily on them and ignore unique concerns for their particular projects.

ANSWER: templates

Creating the _____ involves subdividing the major project deliverables into smaller, more manageable components.
ANSWER: WBS
work breakdown structure
work breakdown structure (WBS)
WBS (work breakdown structure)

Duration estimates can be provided as a discrete number, a range, or as a(n) _____.
ANSWER: three-point estimate

Ethics is a set of principles that guides decision making based on _____ of what is considered right and wrong.
ANSWER: personal values

High-end tools in project management software have enterprise and _____ functions that summarize and combine individual project information to provide an enterprise view of all projects.
ANSWER: portfolio management

High-end tools are generally licensed on a(n) _____ basis.
ANSWER: per-user

In practice, many people find that using a combination or hybrid approach involving analogous, bottom up, and/or parametric modeling provides the best _____.
ANSWER: cost estimates

In Scrum, a(n) _____ is a useful object created by people.
ANSWER: artifact

In a(n) _____ organizational structure, project managers have little or no authority.
ANSWER: functional

In a project schedule, the variable that has the least amount of flexibility is _____.
ANSWER: time

In addition to providing input for budgetary estimates, the process of _____ provides a cost baseline.
ANSWER: cost budgeting

In project schedule management, the process of _____ involves deciding how many people, equipment, and materials a project team should use to perform project activities.
ANSWER: estimating activity resources

In the activity defining process, the project team should review the _____ and activity attributes with project stakeholders before moving on to the next step in project schedule management.
ANSWER: activity list

In a network diagram, a(n) _____ is the starting and ending point of an activity.
ANSWER: node

In a(n) _____ relationship, the "from" activity must start before the "to" activity can be finished.
ANSWER: start-to-finish

In the _____ approach to creating a WBS, team members first identify as many specific tasks related to the project as possible.
ANSWER: bottom-up

In project management, the three limitations of scope, time, and cost are referred to as the _____.
ANSWER: triple constraint

If done well, the _____ can produce several releases of useful software.
ANSWER: agile approach
agile method

One of the first reality checks on scheduling that a project manager should make is to review the _____.
ANSWER: draft schedule

Project management _____ describe the key competencies that project managers must develop.
ANSWER: knowledge areas

Project managers must conduct cash flow analysis to determine _____.
ANSWER: net present value

Project costs, like project schedules, grow out of the basic documents that initiate a project, like the _____.
ANSWER: project charter

Project _____ management includes estimating how long it will take to complete the work, developing an acceptable project schedule, and ensuring timely completion of a project.
ANSWER: schedule

Passing the CPA exam is a standard for accountants. Similarly, passing the PMP exam is becoming a standard for _____.
ANSWER: project managers

Project _____ management consists of preparing and managing the budget for a project.
ANSWER: cost

SMART criteria are guidelines suggesting that milestones should be _____.
ANSWER: Specific, Measurable, Assignable, Realistic, Time-framed

Subdividing the project deliverables into smaller pieces is known as _____.
ANSWER: decomposition

Soft skills are also known as _____ skills.
ANSWER: human relations

Sprint planning is part of the basic _____.
ANSWER: Scrum framework

Some projects have a senior manager called a(n) _____ who acts as a key advocate for a project.
ANSWER: champion

Some organizations prescribe the form and content for WBSs for particular projects. These are known as _____.
ANSWER: guidelines

The most time and money should be spent on _____.
ANSWER: executing
project execution

The ultimate goal of developing a realistic project schedule is to provide a basis for monitoring project progress for the _____ dimension of the project.
ANSWER: time

The _____ is a tabulation of activities to be included on a project schedule.
ANSWER: activity list

The three spheres of systems management are business, organization, and _____.
ANSWER: technology

The main outputs of scope definition are the _____ and project document updates.
ANSWER: project scope statement

The _____ includes the approved project scope statement and its associated WBS and WBS dictionary.
ANSWER: scope baseline

The _____ frame of the organization is the one that is usually depicted in an organizational

chart.
ANSWER: structural

The _____ frame of an organization relates to the company's culture.
ANSWER: symbolic

Three general classifications of organizational structures are _____, project, and matrix.
ANSWER: functional

The main tool for performing scope validation is _____ and group decision making techniques.
ANSWER: inspection

The activity list should include the _____, an activity identifier, and a brief description of the activity.
ANSWER: activity name

The _____ of project management includes quality, scope, time, and cost constraints.
ANSWER: quadruple constraint

The _____ life cycle model is suitable for projects in which changes can be incorporated with reasonable cost
increases or acceptable time delays.
ANSWER: spiral

The _____ life cycle model is used when risk must be tightly controlled and when changes must be restricted after the
requirements are defined.
ANSWER: waterfall

The question, "What unique product, service, or result does the customer or sponsor expect from the project?" is an example of a(n) _____ constraint.
ANSWER: scope

The term "_____" refers to work done in organizations to sustain the business.
ANSWER: Operations

The question, "What is the project's schedule?" is an example of a(n) _____ constraint.
ANSWER: time

The time frame for a(n) _____ estimate is often three or more years prior to project completion.
ANSWER: rough order of magnitude (ROM)
ROM
rough order of magnitude

The ideal outcome of the _____ process group is to complete a project successfully by

delivering the agreed-upon project scope within time, cost, and quality constraints.
ANSWER: monitoring and controlling

The main outputs of the _____ process are activity cost estimates, basis of estimates, and project document updates.
ANSWER: cost estimating

The cost incurred for the work performed on an activity during a specific time period is known as the _____.
ANSWER: actual cost
AC
actual cost (AC)

The _____ is the measure of work performed expressed in terms of the budget authorized for that work.
ANSWER: earned value
EV
earned value (EV)

The _____ index is the ratio of earned value to planned value.
ANSWER: schedule performance

The cost performance index can be used to calculate the _____ which gives an approximate cost of completing a project based on performance to date.
ANSWER: estimate at completion
EAC
estimate at completion (EAC)

The main outputs of the _____ process are a cost performance baseline, project funding requirements, and project document updates.
ANSWER: cost budgeting

The _____ is a very important tool in project management because it provides the basis for deciding how to do the work.
ANSWER: WBS
work breakdown structure
work breakdown structure (WBS)

The additional percentage or dollar amount by which actual costs exceed estimates is known as a(n) _____.
ANSWER: overrun

The main outputs of _____are the project scope statement and updates to project documents.
ANSWER: scope definition

The main output of the planning cost management process is a(n) _____.
ANSWER: cost management plan

The main outputs of _____ include work performance information, schedule forecasts, change requests, project management plan updates, and project documents updates.
ANSWER: schedule control

The _____ is an international professional society for project managers founded in 1969.
ANSWER: Project Management Institute

The _____ is based on the fact that any complex system at any point in time often has only one aspect or constraint that limits its ability to achieve more of its goal.
ANSWER: Theory of Constraints
TOC
Theory of Constraints (TOC)

Until the 1980s, project management primarily focused on providing _____ and resource data to top management in the military, computer, and construction industries.
ANSWER: schedule

"What is the project's budget?" This is an example of a project's _____ constraint.
ANSWER: cost

When using project management software, estimates of work time should be entered only at the work package level; the rest of the WBS items are just groupings or _____ tasks.
ANSWER: summary

_____ are a means of measuring software size based on what the software does for end users.
ANSWER: Function points

_____ tools, a step up from low-end tools, are designed to handle larger projects, multiple users, and multiple projects.
ANSWER: Midrange

_____ refers to the process in which organizations group and manage projects and programs as a portfolio of investments that contribute to the entire enterprise's success.
ANSWER: Project portfolio management

_____ progress from initiation activities to planning activities, executing activities, monitoring and controlling activities, and closing activities.
ANSWER: Project management process groups

_____ include people, hardware, software, or other assets.
ANSWER: Resources

_____ is a technique that uses branches radiating out from a core idea to structure thoughts and ideas when creating a WBS.
ANSWER: Mind mapping

_____ the project includes work required to introduce any new hardware, software, and procedures into normal operations.
ANSWER: Executing

_____ is "the application of knowledge, skills, tools, and techniques to project activities to meet project requirements."
ANSWER: Project managemen

_____ costing helps to see a big-picture view of the cost of a project throughout its life cycle.
ANSWER: Life cycle

_____ is the tendency for project scope to keep getting bigger and bigger.
ANSWER: Scope creep

_____ involves controlling changes to the project scope while keeping project goals and business strategy in mind.
ANSWER: Scope control

_____ is the difference between planned and actual performance.
ANSWER: Variance

_____ involves developing a working replica of the system or some aspect of the system.
ANSWER: Prototyping

_____ is a process for identifying and modeling business events, who initiated them, and how the system should respond to them.
ANSWER: Use case modeling

_____ refer to "conditions or capabilities that must be met by the project or present in the product, service, or result to satisfy an agreement or other formally imposed specification."
ANSWER: Requirements

_____ costing considers the total cost of ownership, or development plus support costs, for a project.
ANSWER: Life cycle

_____ refers to the degree to which work activities are organized around teams, rather than individuals.
ANSWER: Group emphasis

_____ is a project performance measurement technique that integrates scope, time, and cost data.
ANSWER: Earned value management
EVM
Earned value management (EVM)

_____ refers to the degree to which rules, policies, and direct supervision are used to oversee employee behavior.
ANSWER: Control

_____ is a project management methodology that defines 45 separate subprocesses and organizes these into eight process groups.
ANSWER: PRojects IN Controlled Environments
PRINCE2

_____ includes the processes involved in defining and controlling what work is or is not included in a project.
ANSWER: Project scope management

_____ refers to all the work involved in creating the products of the project and the processes used to create them.
ANSWER: Scope

_____ are revenues minus expenditures.
ANSWER: Profits

_____ are people involved in or affected by project activities and include the project sponsor, project team, support staff, customers, users, suppliers, and even opponents to the project.
ANSWER: Stakeholders

_____ have no duration and no resources but are occasionally needed on AOA network diagrams to show logical relationships between activities.
ANSWER: Dummy activities

_____ is the number of workdays or work hours required to complete a task.
ANSWER: Effort

_____ issues often occur during project execution, especially conflicts.
ANSWER: Human resource

_____ involves the processes required to ensure timely completion of a project.
ANSWER: Project schedule management

_____ theory states that when many items are produced repetitively, the unit cost of those

items decreases in a regular pattern as more units are produced.
ANSWER: Learning curve

_____ are short descriptions written by customers of what they need a Scrum system to do for them.
ANSWER: User stories

_____ software development can be used for software development or in any environment in which the requirements
are unknown or change quickly.
ANSWER: Agile

_____ is an organization's acquisition of goods and services from an outside source.
ANSWER: Outsourcing

_____ occurs when a resource works on more than one task at a time.
ANSWER: Multitasking

_____ states that if something can go wrong, it will.
ANSWER: Murphy's Law

简答题

List and describe the five process management groups.
列出并描述五个过程管理组。

ANSWER:
Initiating processes include defining and authorizing a project or project phase. Initiating processes take place during each phase of a project. Therefore, you cannot equate process groups with project phases. Recall that there can be different project phases, but all projects will include all five process groups. For example, project managers and teams should reexamine the business need for the project during every phase of the project life cycle to determine if the project is worth continuing. Initiating processes are also required to end a project. Someone must initiate activities to ensure that the project team completes all the work, documents lessons learned, assigns project resources, and that the customer accepts the work.

Planning processes include devising and maintaining a workable scheme to ensure that the project addresses the organization's needs. There are several plans for projects, such as the scope management plan, schedule management plan, cost management plan, procurement management plan, and so on, defining each knowledge area as it relates to the project at that point in time. For example, a project team must develop a plan to define the work that needs to be done for the project, to schedule activities related to that work, to estimate costs for performing the work, to decide what resources to procure to accomplish the work, and so on. To account for changing conditions on the project and in the organization, project teams often revise plans during each phase of the project life cycle.

Executing processes include coordinating people and other resources to carry out the various plans and produce the products, services, or results of the project or phase. Examples of executing processes include acquiring and developing the project team, performing quality assurance, distributing information, managing stakeholder expectations, and conducting procurements.

Monitoring and controlling processes include regularly measuring and monitoring progress to ensure that the project team meets the project objectives. The project manager and staff monitor and measure progress against the plans and take corrective action when necessary. A common monitoring and controlling process is reporting performance, where project stakeholders can identify any necessary changes that may be required to keep the project on track.

Closing processes include formalizing acceptance of the project or project phase and ending it efficiently. Administrative activities are often involved in this process group, such as archiving project files, closing out contracts, documenting lessons learned, and receiving formal acceptance of the delivered work as part of the phase or project.

启动过程包括定义和授权项目或项目阶段。启动过程发生在项目的每个阶段。因此，不能将流程组等同于项目阶段。回想一下，所有的项目都包括五个不同的阶段，但每个项目都有不同的

过程。例如，项目经理和团队应该在项目生命周期的每个阶段重新检查项目的业务需求，以确定项目是否值得继续。启动过程也需要结束一个项目。必须有人发起活动，以确保项目团队完成所有工作，记录经验教训，分配项目资源，并确保客户接受工作。

规划过程包括设计和维持一个可行的方案，以确保项目满足组织的需要。项目有几个计划，例如范围管理计划、进度管理计划、成本管理计划、采购管理计划等等，定义了每个知识领域，因为它在该时间点与项目相关。例如，项目团队必须制定一个计划，以确定项目需要完成的工作，安排与该工作相关的活动，估算执行工作的成本，决定为完成工作需要采购哪些资源，等等。为了考虑项目和组织中不断变化的条件，项目团队经常在项目生命周期的每个阶段修改计划。

执行过程包括协调人员和其他资源来执行各种计划，并产生项目或阶段的产品、服务或结果。执行过程的例子包括获取和发展项目团队、执行质量保证、分发信息、管理利益相关者的期望以及进行采购。

监控过程包括定期测量和监控进度，以确保项目团队达到项目目标。项目经理和员工根据计划监控和测量进度，必要时采取纠正措施。一个常见的监控过程是报告绩效，项目干系人可以识别任何必要的变更，这些变更可能是保持项目正常运行所必需的。

收尾过程包括正式验收项目或项目阶段，并有效地结束它。该过程组通常涉及行政活动，例如归档项目文件、结束合同、记录经验教训以及作为阶段或项目的一部分接受交付工作的正式验收。

What is a methodology and what are some methodologies other than the PMBOK Guide do organizations use as a basis for project management methodology?

什么是方法论？除了《项目管理知识体系指南》，组织使用什么方法论作为项目管理方法论的基础？

ANSWER:

A methodology describes how things should be done, and different organizations often have different ways of doing things.

In addition to using the PMBOK® Guide as a basis for project management methodology, many organizations use others, such as the following:

• PRojects IN Controlled Environments (PRINCE2): Originally developed for information technology projects, PRINCE2 was released in 1996 as a generic project management methodology by the U.K. Office of Government Commerce (OCG). It is the de facto standard in the United Kingdom and is used in over 50 countries. PRINCE2 defines 45 separate subprocesses and organizes these into eight process groups as follows:

1. Starting up a project
2. Planning
3. Initiating a project
4. Directing a project
5. Controlling a stage
6. Managing product delivery
7. Managing stage boundaries
8. Closing a project

• Agile methodologies: Agile software development is a form of adaptive software development. All agile methodologies include an iterative workflow and incremental delivery of software in short iterations. Several popular agile methodologies include extreme programming, scrum, feature driven development, lean software development, Agile Unified Process (AUP), Crystal, and Dynamic Systems Development Method (DSDM).

• Rational Unified Process (RUP) framework: RUP is an iterative software development process that focuses on team productivity and delivers software best practices to all team members. According to RUP expert Bill Cottrell, "RUP embodies industry-standard management and technical methods and techniques to provide a software engineering process particularly suited to creating and maintaining component-based software system solutions." Cottrell explains that you can tailor RUP to include the PMBOK process groups, since several customers asked for that capability. There are several other project management methodologies specifically for software development projects such as Joint Application Development (JAD) and Rapid Application Development (RAD).

• Six Sigma methodologies: Many organizations have projects underway that use Six Sigma methodologies. The work of many project quality experts contributed to the development of today's Six Sigma principles. Two main methodologies are used on Six Sigma projects: DMAIC (Define, Measure, Analyze, Improve, and Control) is used to improve an existing business process, and DMADV (Define, Measure, Analyze, Design, and Verify) is used to create new product or process designs to achieve predictable, defect-free performance.

方法论描述了应该如何做事情，不同的组织通常有不同的做事方式。

除了使用 PMBOK®指南作为项目管理方法的基础外，许多组织还使用其他方法，例如：

在受控环境中的项目（PREECE2）：最初是为信息技术项目开发的，Prime2 在 1996 被发布为英国政府商务办公室（OCG）的通用项目管理方法。它是英国事实上的标准，在 50 多个国家使用。PRINCE2 定义了 45 个独立的子流程，并将其组织为 8 个流程组，如下所示：

1 启动项目
2 规划
3 启动项目
4 指导项目
5 控制舞台
6 管理产品交付
7 管理阶段边界
8 关闭项目

• 敏捷方法：敏捷软件开发是适应性软件开发的一种形式。所有敏捷方法都包括一个迭代工作流和在短迭代中增量交付软件。几种流行的敏捷方法包括极限编程、scrum、特性驱动开发、精益软件开发、敏捷统一过程（AUP）、Crystal 和动态系统开发方法（DSDM）。

• Rational 统一过程（RUP）框架：RUP 是一个迭代的软件开发过程，它关注团队生产力，并向所有团队成员提供软件最佳实践。根据 RUP 专家 Bill Cottrell 的说法，"RUP 体现了行业标准的管理和技术方法和技术，以提供一个软件工程过程，特别适合于创建和维护基于组件的软件系统解决方案。"Cottrell 解释说，您可以定制 RUP 以包含 PMBOK 过程组，因为客户要求提供这种功能。还有其他几种专门用于软件开发项目的项目管理方法，如联合应用程序开发（JAD）和快速应用程序开发（RAD）。

• 六西格玛方法：许多组织正在进行使用六西格玛方法的项目。许多项目质量专家的工作促进了当今六西格玛原则的发展。六西格玛项目使用了两种主要的方法：DMAIC（定义、测量、分析、改进和控制）用于改进现有的业务流程，DMADV（定义、测量、分析、设计和验证）用

于创建新的产品或流程设计，以实现可预测的、无缺陷的性能。

Describe the process of initiating a project and the issues involved.
描述启动项目的过程和涉及的问题。

ANSWER:
In project management, initiating includes recognizing and starting a new project. An organization should put considerable thought into project selection to ensure that it initiates the right kinds of projects for the right reasons. It is better to have a moderate or even small amount of success on an important project than huge success on one that is unimportant. The selection of projects for initiation, therefore, is crucial, as is the selection of project managers. Ideally, the project manager would be involved in initiating a project, but often the project manager is selected after many initiation decisions have already been made. Organizations must also understand and plan for the ongoing support that is often required after implementing a new system or other product or service resulting from a project.

It is important to remember that strategic planning should serve as the foundation for deciding which projects to pursue. The organization's strategic plan expresses the vision, mission, goals, objectives, and strategies of the organization. It also provides the basis for information technology project planning. Information technology is usually a support function in an organization, so it is critical that the people initiating information technology projects understand how those projects relate to current and future needs of the organization. Information systems must support the firm's business goals, such as providing consulting services more effectively and efficiently.

An organization may initiate information technology projects for several reasons, but the most important reason is to support business objectives. Providing a good return on investment at a reasonable level of risk is also important, especially in tough economic times.

在项目管理中，启动包括确认和启动一个新的项目。一个组织应该在项目选择上投入大量的思考，以确保它以正确的理由启动正确类型的项目。在一个重要的项目上取得适度的成功，甚至是少量的成功，总比在一个不重要的项目上取得巨大的成功要好。因此，选择项目启动是至关重要的，正如选择项目经理一样。理想情况下，项目经理将参与项目的启动，但项目经理通常是在许多启动决策已经做出之后选择的。组织还必须了解并计划在实施新系统或项目产生的其他产品或服务后经常需要的持续支持。

重要的是要记住，战略规划应该作为决定哪些项目的基础。组织的战略计划表达了组织的愿景、使命、目标、目的和战略。为信息技术项目规划提供了依据。信息技术通常是组织中的一个支持功能，因此启动信息技术项目的人员必须了解这些项目与组织当前和未来需求的关系。信息系统必须支持公司的业务目标，例如更有效地提供咨询服务。

一个组织启动信息技术项目可能有几个原因，但最重要的原因是为了支持业务目标。以合理的风险水平提供良好的投资回报也很重要，尤其是在经济困难时期。

What is a work breakdown structure?

什么是工作分解结构？

ANSWER:

The WBS is a very important tool in project management because it provides the basis for deciding how to do the work. The WBS also provides a basis for creating the project schedule and performing earned value management for measuring and forecasting project performance.

WBS 是项目管理中一个非常重要的工具，因为它为决定如何做工作提供了依据。WBS 还提供了创建项目进度表和执行挣值管理的基础，以测量和预测项目绩效。

In the Scrum method, what role is played by the ScrumMaster?

在 Scrum 方法中，ScrumMaster 扮演什么角色？

ANSWER:

The ScrumMaster facilitates four ceremonies or meetings when using Scrum methods:

• Sprint planning session: A meeting with the team to select a set of work from the product backlog to deliver during a sprint. This meeting takes about four hours to a full day.

• Daily Scrum: A short meeting for the development team to share progress and challenges and plan work for the day. Ideally the team members are in the same place, the meeting usually lasts no more than 15 minutes, and it is held at the same time and place each day. If that is not possible, teams can use videoconferencing to have short virtual meetings. The ScrumMaster asks what work has been done since yesterday, what work is planned for today, and what impediments or stumbling blocks might hamper the team's efforts. The ScrumMaster documents these stumbling blocks and works with key stakeholders to resolve them after the daily Scrum. Many teams use the term issues for items that do not have to be solved in the next 24 hours and blockers for items that need to be addressed immediately. This allows a ScrumMaster to maintain focus on highest-priority items (blockers) first and then manage the resolution of other issues over the next day or so.

• Sprint reviews: A meeting in which the team demonstrates to the product owner what it has completed during the sprint.

• Sprint retrospectives: A meeting in which the team looks for ways to improve the product and the process based on a review of the actual performance of the development team.

当使用 Scrum 方法时，ScrumMaster 会促成四个仪式或会议：

•Sprint 计划会议：与团队开会，从产品积压中选择一组工作，以便在 Sprint 期间交付。这个会议大约需要四个小时到一整天。

•每日 Scrum：一个简短的会议，供开发团队分享进展和挑战，并计划当天的工作。理想情况下，团队成员在同一地点，会议通常不超过 15 分钟，并且每天在同一时间和地点举行。如果不可能，团队可以使用视频会议来进行简短的虚拟会议。ScrumMaster 询问从昨天开始做了哪些工作，今天计划了哪些工作，以及哪些障碍或绊脚石可能会阻碍团队的努力。ScrumMaster 记录这些绊脚石，并在每日 Scrum 之后与关键的涉众合作解决它们。许多团队使用术语"问题"来表示在接下来的 24 小时内不必解决的问题，而使用拦截器来表示需要立即解决的问题。这使得 ScrumMaster 能够首先关注最高优先级的项目（拦截器），然后在第二天左右管理其他

问题的解决。

•Sprint 评审：团队向产品负责人演示 Sprint 期间完成的工作的会议。

•Sprint 回顾：团队在对开发团队的实际表现进行回顾的基础上寻找改进产品和流程的方法的会议。

List and briefly describe the six main processes involved in project scope management.
列出并简要描述项目范围管理中涉及的六个主要过程。

ANSWER:
1. Planning scope management involves determining how the project's scope and requirements will be managed.

2. Collecting requirements involves defining and documenting the features and functions of the products as well as the processes used for creating them.

3. Defining scope involves reviewing the scope management plan, project charter, requirements documents, and organizational process assets to create a scope statement, adding more information as requirements are developed and change requests are approved.

4. Creating the WBS involves subdividing the major project deliverables into smaller, more manageable components.

5. Validating scope involves formalizing acceptance of the project deliverables. Key project stakeholders, such as the customer and sponsor for the project, inspect and then formally accept the deliverables during this process. If the deliverables are not acceptable, the customer or sponsor usually requests

changes.

6. Controlling scope involves controlling changes to project scope throughout the life of the project—a challenge on many IT projects. Scope changes often influence the team's ability to meet project time and cost goals, so project managers must carefully weigh the costs and benefits of scope changes.

1. 计划范围管理包括确定如何管理项目的范围和需求。

2. 收集需求包括定义和记录产品的特性和功能以及用于创建它们的过程。

3. 定义范围涉及审查范围管理计划、项目章程、需求文档和组织过程资产，以创建范围说明，随着需求的开发和变更请求的批准，增加更多信息。

4. 创建 WBS 涉及将主要的项目交付物细分为更小的、更容易管理的组成部分。

5. 验证范围涉及正式确定对项目可交付成果的接受。在这个过程中，项目的关键利益相关者，如客户和项目的发起人，会检查然后正式接受交付物。如果交付物不能接受，客户或发起人通常会要求 变化。

6. 控制范围涉及到在项目的整个生命周期中控制项目范围的变化--这是许多 IT 项目的挑战。范围变更往往会影响团队实现项目时间和成本目标的能力，因此项目经理必须仔细权衡范围变更的成本和收益

What is a work breakdown structure? What are the inputs and tools used for creating one?

什么是工作分解结构？ 用于创建一个的输入和工具是什么？

ANSWER:

A work breakdown structure (WBS) is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project. Because most projects involve many people and many different deliverables, it is important to organize and divide the work into logical parts based on how the work will be performed. The WBS is a foundation document in project management because it provides the basis for planning and managing project schedules, costs, resources, and changes. Since the WBS defines the total scope of the project, some project management experts believe that work should not be done on a project if it is not included in the WBS. Therefore, it is crucial to develop a good WBS.

The project management plan, project documents, enterprise environmental factors, and organizational process assets are the primary inputs for creating a WBS.In addition to expert judgment, the main tool or technique is decomposition—that is, subdividing project deliverables into smaller pieces. The outputs of the process ofcreating the WBS are the scope baseline and project documents updates. The scope baseline includes the approved project scope statement and its associated WBS and WBS dictionary.

工作分解结构(WBS)是对项目所涉及的工作进行的面向交付的分组，它定义了项目的总范围。由于大多数项目涉及许多人和许多不同的交付物，因此根据工作的执行方式将工作组织和划分为逻辑部分是很重要的。WBS 是项目管理的基础文件，因为它提供了规划和管理项目进度、成本、资源和变更的基础。由于 WBS 定义了项目的总范围，一些项目管理专家认为，如果一个项目的工作没有包括在 WBS 中，就不应该在项目上进行。因此，制定一个好的 WBS 至关重要。

项目管理计划、项目文件、企业环境因素和组织过程资产是创建 WBS 的主要输入.除了专家判断外，主要的工具或技术是分解--即把项目可交付成果细分为更小的部分。创建 WBS 过程的输出是范围基线和项目文件更新。范围基线包括经批准的项目范围说明及其相关的 WBS 和 WBS 字典。

List and briefly describe five approaches for creating work breakdown structures.

列出并简要描述创建工作分解结构的五种方法。

ANSWER:

Using Guidelines

If guidelines for developing a WBS exist, it is very important to follow them. Some organizations—the U.S. Department of Defense (DOD) for example—prescribe the form and content for WBSs for particular projects.

Many organizations provide guidelines and templates for developing WBSs, as well as examples of WBSs from past projects. At the request of many of its members, the Project Management Institute recently developed a WBS Practice Standard to provide guidance for developing and applying the WBS to project management.

Project managers and their teams should review appropriate information to develop their

unique project WBSs more efficiently.

The Analogy Approach

In the analogy approach, you use a similar project's WBS as a starting point. Some organizations keep a repository of WBSs and other project documentation on file to assist people working on projects. Viewing examples of other similar projects' WBSs allows you to understand different ways to create a WBS.

The Top-down and Bottom-up Approaches

Most project managers consider the top-down approach of WBS construction to be conventional. To use the top-down approach, start with the largest items of the project and break them into their subordinate items. This process involves refining the work into greater and greater levels of detail. After finishing the process, all resources should be assigned at the work package level. The top-down approach is best suited to project managers who have vast technical insight and a big-picture perspective.

In the bottom-up approach, team members first identify as many specific tasks related to the project as possible. They then aggregate the specific tasks and organize them into summary activities, or higher levels in the WBS. The bottom-up approach can be very time-consuming, but it can also be a very effective way to create a WBS. Project managers often use the bottom-up approach for projects that represent entirely new systems or approaches to doing a job, or to help create buy-in and synergy with a project team.

Mind Mapping

Mind mapping is a technique that uses branches radiating out from a core idea to structure thoughts and ideas. Instead of writing tasks down in a list or immediately trying to create a structure for tasks, mind mapping allows people to write and even draw pictures of ideas in a nonlinear format. This more visual, less structured approach to defining and then grouping tasks can unlock creativity among individuals and increase participation and morale among teams.

After discovering WBS items and structure using the mind-mapping technique, you could then translate the information into chart or tabular form. Mind mapping can be used for developing WBSs using the top-down or bottom-up approach.

使用指南

如果有制定 WBS 的准则，那么遵守这些准则是非常重要的。有些组织——例如美国国防部 (DOD)规定了特定项目的 WBS 的形式和内容。

许多组织提供了制定 WBSs 的指南和模板，以及过去项目的 WBSs 实例。应许多成员的要求，项目管理协会最近制定了 WBS 实践标准，为制定和应用 WBS 进行项目管理提供指导。

项目经理及其团队应该查阅相应的资料，以便更有效地开发自己独特的项目 WBS。

类比法

在类比法中，你使用一个类似项目的 WBS 作为起点。一些组织将 WBS 和其他项目文档保存在档案库中，以帮助从事项目工作的人员。查看其他类似项目的 WBS 的例子，可以让你了解创建 WBS 的不同方法。

自上而下和自下而上的方法

大多数项目经理认为 WBS 建设的自上而下的方法是传统的。要使用自上而下的方法，先从项目中最大的项目开始，然后将其分解为下属项目。这个过程需要将工作细化到越来越多的细节层次。在完成这一过程后，应在工作包层面分配所有资源。自上而下的方法最适合那些具有丰富技术洞察力和大局观的项目经理。

在自下而上的方法中，团队成员首先确定尽可能多的与项目相关的具体任务。然后，他们将这

些具体任务汇总起来，并将其组织成总结性活动，或 WBS 中更高的层次。自下而上的方法可能非常耗时，但它也是创建 WBS 的一种非常有效的方法。项目经理经常将自下而上的方法用于代表全新的系统或工作方法的项目，或者帮助项目团队建立认同感和协同作用。

心智图谱

思维导图是一种利用从核心思想辐射出来的分支来架构思想和想法的技术。心智图谱不是把任务写在清单上，也不是立即尝试建立任务结构，而是让人们以非线性的形式写下甚至画出想法的图片。这种更直观、更少结构化的方法来定义然后分组任务，可以释放个人的创造力，提高团队的参与度和士气。

使用思维导图技术发现 WBS 项目和结构后，你可以将信息转化为图表或表格形式。心智图法可用于自上而下或自下而上的方法开发 WBS。

Describe the process of scope validation.
描述范围验证的过程。

ANSWER:

Scope validation involves formal acceptance of the completed project deliverables. This acceptance is often achieved by a customer inspection and then sign-off on key deliverables. To receive formal acceptance of the project scope, the project team must develop clear documentation of the project's products and procedures to evaluate whether they were completed correctly and satisfactorily. Recall from Chapter 4 that configuration management specialists identify and document the functional and physical characteristics of the project's products, record and report the changes, and audit the products to verify conformance to requirements. To minimize scope changes, it is crucial to do a good job of configuration management and validating project scope.

The project management plan, project documents, verified deliverables, and work performance data are the main inputs for scope validation. The main tools for performing scope validation are inspection and decision-making techniques. The customer, sponsor, or user inspects the work after it is delivered and decides if it meets requirements. The main outputs of scope validation are accepted deliverables, change requests, work performance information, and project documents updates.

范围验证是指正式接受已完成的项目可交付成果。 范围验证包括对已完成的项目交付物的正式验收。这种验收通常是通过客户检查，然后对关键的交付物进行签收来实现的。为了接受项目范围的正式验收，项目组必须制定项目产品和程序的明确文档，以评估它们是否正确和令人满意地完成。回顾第 4 章，配置管理专家要识别和记录项目产品的功能和物理特性，记录和报告变更，并审核产品以验证是否符合需求。为了最大限度地减少范围变更，做好配置管理和验证项目范围是至关重要的。

项目管理计划、项目文档、经过验证的交付物和工作绩效数据是范围验证的主要输入。进行范围验证的主要工具是检查和决策技术。客户、发起人。

或用户在工作交付后对其进行检查，并决定其是否符合要求。范围验证的主要产出是接受的可交付成果、变更请求、工作绩效信息和项目文件更新。

What are some of the suggestions for improving the requirements process?

对改善需求流程有哪些建议？

ANSWER:

1.Develop and follow a requirements management process that includes procedures for initial requirements determination.

2. Employ techniques such as prototyping, use case modeling, and Joint Application Design to understand user requirements thoroughly. Prototyping involves developing a working replica of the system or some aspect of the system. These working replicas may be throwaways or an incremental component of the deliverable system. Prototyping is an effective tool for gaining an understanding of requirements, determining the feasibility of requirements, and resolving user interface uncertainties. Use case modeling is a process for identifying and modeling business events, who initiated them, and how the system should respond to them. It is an effective tool for understanding requirements for information systems. Joint Application Design (JAD) uses highly organized and intensive workshops to bring together project stakeholders—the sponsor, users, business analysts, programmers, and so on—to jointly define and design information systems. These techniques also help users become more active in defining system requirements.

3. Put all requirements in writing and keep them current and readily available. Several tools are available to automate this function. For example, a type of software called a requirements management tool aids in capturing and maintaining requirements information, provides immediate access to the information, and assists in establishing necessary relationships between requirements and information created by other tools.

4. Create a requirements management database for documenting and controlling requirements. Computer Aided Software Engineering (CASE) tools or other technologies can assist in maintaining a repository for project data. A CASE tool's database can also be used to document and control requirements.

5. Provide adequate testing to verify that the project's products perform as expected. Conduct testing throughout the project life cycle.

6. Use a process for reviewing requested requirements changes from a systems perspective.

7. Emphasize completion dates.

8. Allocate resources specifically for handling change requests.

1. 制定并遵循需求管理流程，包括初始需求确定的程序。

2. 采用原型设计、用例模型和联合应用设计等技术来彻底理解用户需求。原型设计包括开发一个系统或系统某些方面的工作副本。这些工作复制品可能是一次性的，也可能是可交付系统的一个增量部分。原型是了解需求、确定需求的可行性和解决用户界面不确定性的有效工具。用例建模是一个识别和模拟业务事件的过程，谁发起了这些事件，以及系统应该如何响应这些事件。它是理解信息系统需求的有效工具。联合应用设计(JAD)使用高度组织化和密集的研讨会，将项目的利益相关者--发起人、用户、业务分析师、程序员等--聚集在一起，共同定义和设计信息系统。这些技术也帮助用户更加积极地定义系统需求。

3. 把所有的需求都写下来，并保持它们的时效性和随时可用。有几种工具可以实现这一功能的自动化。例如，一种被称为需求管理工具的软件可以辅助捕捉和维护需求信息，提供对信息的即时访问，并协助建立需求与其他工具创建的信息之间的必要关系。

4. 建立需求管理数据库，用于记录和控制需求。计算机辅助软件工程(CASE)工具或其他技术可以协助维护项目数据的资料库。CASE 工具的数据库也可以用来记录和控制需求。

5. 提供足够的测试来验证项目产品的性能是否符合预期。在整个项目生命周期中进行测试。

6. 使用从系统角度审查所要求的需求变更的过程。

7. 强调完成日期。

8. 为处理变更请求分配专门的资源。

List and briefly describe the main processes involved in project schedule management.
列出并简要描述项目进度管理中涉及的主要过程。

ANSWER: The main processes involved in project schedule management are as follows:
(1) Planning schedule management involves determining the policies, procedures, and documentation that will be used for planning, executing, and controlling the project schedule.
(2) Defining activities involves identifying the specific activities that the project team members and stakeholders must perform to produce the project deliverables.
(3) Sequencing activities involves identifying and documenting the relationships between project activities.
(4) Estimating activity durations involves estimating the number of work periods that are needed to complete individual activities.
(5) Developing the schedule involves analyzing activity sequences, activity resource estimates, and activity duration estimates to create the project schedule.
(6) Controlling the schedule involves controlling and managing changes to the project schedule.

项目进度管理涉及的主要过程如下：
（1）计划进度管理包括确定用于计划、执行和控制项目进度的政策、程序和文件。
（2）定义活动包括确定项目团队成员和利益相关者必须执行的特定活动，以产生项目可交付成果。
（3）排序活动涉及确定和记录项目活动之间的关系。
（4）估计活动持续时间包括估计完成单个活动所需的工作周期数。
（5）制定进度计划包括分析活动序列、活动资源估算和活动持续时间估算，以创建项目进度计划。
（6）控制进度包括控制和管理项目进度的变更。

What are milestones? Describe.
什么是里程碑？ 请描述。
ANSWER:
Milestones are the most important and visible events in a project and normally have no duration. It often takes several activities and a lot of work to complete a milestone, but the milestone itself is like a marker to help in identifying necessary activities. Milestones are also

useful tools or setting schedule goals and monitoring progress. Not every deliverable or output created for a project is really a milestone.

在项目中，最重要的事件通常是不可见的。完成一个里程碑通常需要几个活动和大量工作，但里程碑本身就像一个标记，有助于确定必要的活动。里程碑也是设定进度目标和监控进度的有用工具。并不是为项目创建的每个可交付成果或输出都是真正的里程碑。

What is a network diagram? Describe two network diagramming methods.

什么是网络图？ 描述两种网络图表方法。

ANSWER:

Network diagrams are the preferred technique for showing activity sequencing. They are a schematic display of the logical relationships among project activities and their sequencing. They represent activities that must be done to complete the project. Every activity on the network diagram must be completed in order for the project to finish. Two types of network diagramming methods are as follows:

(1) The arrow diagramming method (ADM): This is a network diagramming technique in which activities are represented by arrows and connected at points called nodes to illustrate the sequence of activities. A node is simply the starting and ending point of an activity. The first node signifies the start of a project, and the last node represents the end of a project.

(2) The precedence diagramming method (PDM): This is a network diagramming technique in which boxes represent activities. It is particularly useful for visualizing certain types of time relationships.

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网络图是显示活动顺序的首选技术。它们是项目活动及其顺序之间逻辑关系的示意图。它们代表了完成项目必须完成的活动。网络图上的每一项活动都必须完成，项目才能完成。两种网络图绘制方法如下：

（1）箭头图解法（ADM）：这是一种网络图解技术，其中活动由箭头表示，并在称为节点的点处连接，以说明活动的顺序。节点只是活动的起点和终点。第一个节点表示项目的开始，最后一个节点表示项目的结束。

（2） 优先图方法（PDM）：这是一种网络图技术，其中方框表示活动。它对于可视化特定类型的时间关系特别有用。

Describe critical path analysis. How is the critical path calculated?

描述关键路径分析。 关键路径如何计算？

ANSWER:

Critical path analysis is a network diagramming technique used to predict total project duration. This important tool can help combat project schedule overruns. A critical path for a project is the series of activities that determine the earliest time by which the project can be completed.

It is the longest path through the network diagram and has the least amount of slack or float. To find the critical path for a project, one must first develop a good network diagram, which, in turn, requires a good activity list based on the work breakdown structure. Once a network diagram is created, one must also estimate the duration of each activity to determine the critical path. Calculating the critical path involves adding the durations for all activities on each path through the network diagram. The longest path is the critical path.

关键路径分析是一种用于预测项目总工期的网络图技术。这个重要的工具可以帮助对抗项目进度超限。一个项目的关键路径是一系列的活动，这些活动决定了项目最早可以完成的时间。它是通过网络图的最长路径，并且具有最少的空闲或浮动量。

要找到一个项目的关键路径，首先必须制定一个好的网络图，而这又需要一个基于工作分解结构的好的活动列表。一旦创建了网络图，还必须估计每个活动的持续时间，以确定关键路径。计算关键路径涉及通过网络图为每条路径上的所有活动添加持续时间。最长的路径就是关键路径。

What is the Theory of Constraints? Describe critical chain scheduling, an application of the Theory of Constraints.

约束理论是什么？ 描述关键链调度，这是约束理论的一种应用。

ANSWER:

The Theory of Constraints (TOC) is a management philosophy developed by Eliyahu M. Goldratt and is based on the metaphor of a chain and its weakest link: Any complex system at any point in time often has only one aspect or constraint that limits the ability to achieve more of the system's goal. For the system to attain any significant improvements, that constraint must be identified, and the whole system must be managed with it in mind.

Critical chain scheduling is a method that considers limited resources when creating a project schedule and includes buffers to protect the project completion date. An important concept in critical chain scheduling is the availability of scarce resources. For instance, if a particular piece of equipment is needed full time to complete each of two tasks that were originally planned to occur simultaneously, critical chain scheduling acknowledges that one must either delay one of those tasks until the equipment is available or find another piece of equipment in order to meet the schedule. Other important concepts related to critical chain scheduling include multitasking and time buffers.

约束理论（TOC）是由 Eliyahu M.Goldratt 提出的一种管理哲学，它以链及其最薄弱环节的隐喻为基础：任何复杂系统在任何时间点往往只有一个方面或约束，限制了系统实现更多目标的能力。为了使系统获得任何显著的改进，必须确定该约束，并且必须将其铭记在心来管理整个系统。

关键链调度是一种在创建项目进度表时考虑有限资源的方法，它包括缓冲区以保护项目完成日期。关键链调度的一个重要概念是稀缺资源的可用性。例如，如果一个特定的设备需要全职来完成最初计划同时发生的两个任务中的每一个，那么关键链调度承认必须延迟其中一个任务直到设备可用，或者找到另一个设备来满足进度。与关键链调度相关的其他重要概念包括多任务和时间缓冲区。

Describe the triple constraint. What are the three components and what is the relationship between them?

描述三重约束。 这三个部分是什么，它们之间是什么关系？

ANSWER:

Every project is constrained in different ways, often by its scope, time, and cost goals. These limitations are sometimes referred to in project management as the triple constraint. To create a successful project, a project manager must consider scope, time, and cost and balance these three often-competing goals.

Scope: This goal involves questions such as, "What work will be done as part of the project? What unique product, service, or result does the customer or sponsor expect from the project? How will the scope be verified?"

Time: This goal encompasses questions such as, "How long should it take to complete the project? What is the project's schedule? How will the team track actual schedule performance? Who can approve changes to the schedule?"

Cost: This goal deals with questions such as, "What should it cost to complete the project? What is the project's budget? How will costs be tracked? Who can authorize changes to the budget?"

Managing the triple constraint involves making trade-offs between scope, time, and cost goals for a project. Experienced project managers know that they must decide which aspect of the triple constraint is most important. If time is most important, one must change the initial scope and/or cost goals to meet the schedule. If scope goals are most important, one may need to adjust time and/or cost goals.

每个项目都以不同的方式受到限制，通常是受到其范围、时间和成本目标的限制。在项目管理中，这些限制有时被称为三重约束。为了创建一个成功的项目，项目经理必须考虑范围、时间和成本，并平衡这三个经常相互竞争的目标。

范围:这个目标涉及到这样的问题，"项目的一部分是什么工作?"客户或赞助商期望从项目中得到什么独特的产品、服务或结果?如何核实范围?"

时间:这个目标包含了诸如"完成这个项目需要多长时间?"这个项目的时间表是怎样的?团队将如何跟踪实际的进度表现?谁可以批准对时间表的更改?"

成本:这个目标涉及诸如"完成项目的成本应该是多少?"这个项目的预算是多少?如何跟踪成本?谁能授权改变预算?"

管理三重约束涉及在项目的范围、时间和成本目标之间进行权衡。有经验的项目经理知道他们必须决定三重约束的哪个方面是最重要的。如果时间是最重要的，必须改变初始范围和/或成本目标以满足时间表。如果范围目标是最重要的，则可能需要调整时间和/或成本目标。

List and describe each of the ten project management knowledge areas.

列出并描述十个项目管理知识领域中的每一个。

ANSWER:

Project management knowledge areas describe the key competencies that project managers must develop. These are as follows:

(1) Project scope management involves defining and managing all the work required to complete the project successfully.

(2) Project schedule management (formerly called project time management) includes estimating how long it will take to complete the work, developing an acceptable project schedule, and ensuring timely completion of the project.

(3) Project cost management consists of preparing and managing the budget for the project.

(4) Project quality management ensures that the project will satisfy the stated or implied needs for which it was undertaken.

(5) Project resource management is concerned with making effective use of the people and physical resources involved with the project.

(6) Project communications management involves generating, collecting, disseminating, and storing project information.

(7) Project risk management includes identifying, analyzing, and responding to risks related to the project.

(8) Project procurement management involves acquiring or procuring goods and services for a project from outside the performing organization.

(9) Project stakeholder management includes identifying and analyzing stakeholder needs while managing and controlling their engagement throughout the life of the project.

(10) Project integration management is an overarching function that affects and is affected by all of the other knowledge areas.

项目管理知识领域描述了项目经理必须培养的关键能力。这些内容如下:
(1)项目范围管理包括定义和管理成功完成项目所需的所有工作。
(2)项目进度管理(以前称为项目时间管理)包括估计完成工作所需的时间,制定可接受的项目进度,确保项目按时完成。
(3)项目成本管理包括项目预算的编制和管理。
(4)项目质量管理确保项目将满足其所承担的明示或暗示的需要。
(5)项目资源管理是指有效利用与项目有关的人员和物质资源。
(6)项目沟通管理包括项目信息的生成、收集、传播和存储。
(7)项目风险管理包括识别、分析和应对与项目相关的风险。
(8)项目采购管理涉及从执行组织外部为项目获取或采购货物和服务。
(9)项目干系人管理包括识别和分析干系人的需求,同时管理和控制他们在整个项目生命周期中的参与。
(10)项目集成管理是一个影响并受所有其他知识领域影响的总体功能。

Identify several of the qualities of a good project manager.
确定一个好的项目经理的几种素质。

ANSWER:
Project managers often take on the role of both leader and manager. Good project managers know that people make or break projects, so they must set a good example to lead their team

to success. They are aware of the greater needs of their stakeholders and organizations, so they are visionary in guiding their current projects and in suggesting future ones. Companies that excel in project, program, and portfolio management grow project leaders, emphasizing development of business and leadership skills. Therefore, the best project, program, and portfolio managers have leadership and management characteristics; they are visionary yet focused on the bottom line. Above all else, good project managers focus on achieving positive results.

项目经理通常同时扮演领导者和经理的角色。优秀的项目经理知道，人可以成就项目，也可以破坏项目，所以他们必须树立一个好榜样，带领团队走向成功。他们意识到他们的利益相关者和组织更大的需求，因此他们在指导当前的项目和建议未来的项目时具有远见。擅长项目、计划和项目组合管理的公司培养项目领导者，强调业务和领导技能的发展。因此，最好的项目、计划和投资组合经理具有领导和管理特征;他们既富有远见，又专注于利润。最重要的是，好的项目经理注重取得积极的结果。

Discuss the PMP certification. What are the advantages of obtaining PMP certification?
确定一个好的项目经理的几种素质。

ANSWER:
The Project Management Institute (PMI) provides certification as a Project Management Professional (PMP)—someone who has documented sufficient project experience and education, agreed to follow the PMI code of professional conduct, and demonstrated knowledge of the field of project management by passing a comprehensive examination.

Organizations that support PMP certification see the value of investing in programs to improve their employees' knowledge in project management. Many employers today require specific certifications to ensure their workers have current skills, and job seekers find that they often have an advantage when they earn and maintain marketable certifications.

Passing the PMP exam is becoming a standard for project managers. Project management certification is also enabling professionals in the field to share a common base of knowledge. Sharing a common base of knowledge is important because it helps advance the theory and practice of project management. PMI also offers additional certifications, including agile techniques, scheduling, risk, program management, portfolio management, and business analysis.

项目管理协会(PMI)提供项目管理专业人员(PMP)认证——具有足够的项目经验和教育背景，同意遵循 PMI 的职业行为准则，并通过综合考试证明具有项目管理领域的知识。

支持 PMP 认证的组织看到了投资项目以提高其员工在项目管理方面的知识的价值。如今，许多雇主要求特定的证书，以确保他们的员工拥有当前的技能，求职者发现，当他们获得并保持有市场竞争力的证书时，他们往往具有优势。

通过 PMP 考试正在成为项目经理的标准。项目管理认证也使该领域的专业人员能够分享共同的知识基础。共享一个共同的知识基础是重要的，因为它有助于推进项目管理的理论和实践。PMI 还提供了额外的认证，包括敏捷技术、调度、风险、项目管理、项目组合管理和业务分析。

Discuss the PMI Code of Ethics and Professional Conduct.

讨论 PMI 道德与职业行为守则。

ANSWER:

PMI approved a Code of Ethics and Professional Conduct that took effect in January 2007. This code applies not only to PMPs, but to all PMI members and individuals who hold a PMI certification, apply for a PMI certification, or serve PMI in a volunteer capacity. It is vital for project management practitioners to conduct their work in an ethical manner. Even if one is not affiliated with PMI, these guidelines can help one conduct their work in an ethical manner, which helps the profession earn the confidence of the public, employers, employees, and all project stakeholders. The PMI Code of Ethics and Professional Conduct includes short chapters addressing vision and applicability, responsibility, respect, fairness, and honestly.

PMI 批准了《道德和职业行为准则》，并于 2007 年 1 月生效。本规范不仅适用于 PMPs，而且适用于所有 PMI 成员和拥有 PMI 认证、申请 PMI 认证或以志愿者身份参加 PMI 服务的个人。对于项目管理从业者来说，以一种合乎道德的方式开展工作是至关重要的。即使一个人不属于 PMI，这些指导方针可以帮助一个人以道德的方式进行他们的工作，这有助于职业赢得公众、雇主、雇员和所有项目利益相关者的信任。PMI 的道德和职业行为准则包括了关于远见和适用性、责任、尊重、公平和诚实的简短章节。

Describe the concept of a systems approach.

描述系统方法的概念。

ANSWER:

The term systems approach emerged in the 1950s to describe a holistic and analytical approach to solving
complex problems that includes using a systems philosophy, systems analysis, and systems management. A
systems philosophy is an overall model for thinking about things as systems.
Systems are sets of interacting components working within an environment to fulfill some purpose. For
example, the human body is a system composed of many subsystems, including the nervous system, the
skeletal system, the circulatory system, and the digestive system. Systems analysis is a problem-solving
approach that requires defining the scope of the system, dividing it into its components, and then identifying
and evaluating its problems, opportunities, constraints, and needs. Once this is completed, the systems analyst
then examines alternative solutions for improving the current situation, identifies an optimum,

or at least

satisfactory, solution or action plan; and examines that plan against the entire system. Systems management

addresses the business, technological, and organizational issues associated with creating, maintaining, and

modifying a system.

系统方法一词出现在 20 世纪 50 年代，用来描述解决复杂问题的整体和分析方法，包括使用系统哲学、系统分析和系统管理。系统哲学是把事物看作系统的整体模型。

系统是在一个环境中工作以实现某种目的的一组相互作用的组件。例如，人体是一个由许多子系统组成的系统，包括神经系统、骨骼系统、循环系统和消化系统。系统分析是一种解决问题的方法，需要定义系统的范围，将其划分为组件，然后识别和评估其问题、机会、约束和需求。一旦完成这项工作，系统分析员就会检查用于改善当前状况的替代解决方案，确定最佳或至少令人满意的解决方案或行动计划；并对照整个系统检查该计划。系统管理解决与创建、维护和修改系统相关的业务、技术和组织问题。

What are the four frames of organizations? Describe each frame.
组织的四个框架是什么？ 描述每个框架。

ANSWER:

The structural frame deals with how the organization is structured (usually depicted in an organizational chart) and focuses on different groups' roles and responsibilities in order to meet the goals and policies set by top management. This frame is very rational and focuses on coordination and control. For example, within the structural frame, a key IT issue is whether a company should centralize the IT personnel in one department or decentralize across several departments. The human resources (HR) frame focuses on producing harmony between the needs of the organization and the needs of the people. It recognizes that mismatches can occur between the needs of the organization and those of individuals and groups, and works to resolve any potential problems. For example, many projects might be more efficient for the organization if personnel worked 80 or more hours a week for several months. However, this work schedule would conflict with the personal lives and health of many employees. Important IT issues related to the human resources frame are the shortage of skilled IT workers within the organization and unrealistic schedules imposed on many projects.

Chapter 2 - The Project Management Information Technology Context

The political frame addresses organizational and personal politics. Politics in organizations take the form of competition among groups or individuals for power and leadership. The political frame emphasizes that organizations are coalitions composed of varied individuals and interest groups. Often, important decisions need to be made based on the allocation of scarce resources. Competition for resources makes conflict a central issue in organizations, and power improves the ability to obtain those resources. Project managers must

pay attention to politics and power if they are to be effective. It is important to know who opposes your projects as well as who supports them. Important IT issues related to the political frame are the differences in power between central functions to operating units or between

functional managers to project managers.

The symbolic frame focuses on symbols and meanings. In this frame, the most important aspect of any event in an organization is not what actually happened, but what it means. Was it a good sign that the CEO came to a kick-off meeting for a project, or was it a threat? The symbolic frame also relates to the company's culture.

How do people dress? How many hours do they work? How do they run meetings? Many IT projects are international and include stakeholders from various cultures. Understanding those cultures is also a crucial part of the symbolic frame.

结构框架涉及组织的结构（通常在组织结构图中描述），并侧重于不同团队的角色和职责，以实现最高管理层制定的目标和政策。这一框架非常合理，侧重于协调和控制。例如，在结构框架内，一个关键的 IT 问题是一个公司应该将 IT 人员集中在一个部门还是分散在多个部门。人力资源（HR）框架着眼于在组织的需求和人们的需求之间产生和谐。它认识到组织的需要与个人和团体的需要之间可能会出现不匹配，并努力解决任何潜在的问题。例如，如果工作人员连续几个月每周工作 80 小时或以上，许多项目可能对组织更有效率。然而，这种工作安排会与许多员工的个人生活和健康发生冲突。与人力资源框架相关的重要信息技术问题是组织内缺乏熟练的信息技术工人，许多项目的时间表不切实际。

政治框架涉及组织和个人政治。组织中的政治表现为团体或个人之间争夺权力和领导权的竞争。政治框架强调组织是由不同的个人和利益集团组成的联盟。通常，重要的决定需要根据稀缺资源的分配来作出。对资源的竞争使得冲突成为组织的中心问题，而权力提高了获得这些资源的能力。项目管理者要想取得成效，就必须重视政治和权力。知道谁反对你的项目以及谁支持你的项目是很重要的。与政治框架相关的重要 IT 问题是中央职能部门与运营单位之间或职能经理与项目经理之间的权力差异。

符号框架关注符号和意义，在这个框架中，组织中任何事件最重要的方面不是实际发生的事情，而是它的意义。首席执行官来参加一个项目的启动会议是一个好迹象，还是一种威胁？这个象征性的框架也与公司的文化有关。人们怎么穿衣服？他们工作多少小时？他们怎么开会议？许多 IT 项目是国际性的，包括来自不同文化的利益相关者。理解这些文化也是符号框架的关键部分。

Describe each of the three major types of organizational structure.

描述三种主要的组织结构类型。

ANSWER:

A functional organizational structure is the hierarchy most people think of when picturing an organizational chart. Functional managers or vice presidents in specialties such as engineering, manufacturing, IT, and human resources (HR) report to the chief executive officer (CEO). Their staffs have specialized skills in their respective disciplines. For example, most colleges and universities have very strong functional organizations.

Only faculty in the business department teach business courses; faculty in the history department teach history; faculty in the art department teach art, and so on.

A project organizational structure also is hierarchical, but instead of functional managers or vice presidents reporting to the CEO, program managers report to the CEO. Their staffs have a variety of skills needed to complete the projects within their programs. An organization that

uses this structure earns their revenue primarily from performing projects for other groups under contract. For example, many defense, architectural, engineering, and consulting companies use a project organizational structure. These companies often hire people specifically to work on particular projects. A matrix organizational structure represents the middle ground between functional and project structures. Personnel often report to both a functional manager and one or more project managers. For example, IT personnel at many companies often split their time between two or more projects, but they report to their manager in the IT department. Project managers in matrix organizations have staff from various functional areas working on their projects. Matrix organizational structures can be strong, weak, or balanced, based on the amount of control exerted by the project managers.

功能性组织结构是大多数人在绘制组织结构图时想到的层次结构。工程，制造，IT 和人力资源（HR）等专业的职能经理或副总裁向首席执行官（CEO）汇报。他们的员工在各自学科领域具有专门技能。例如，大多数学院和大学都有非常强大的职能组织。

只有商务系的老师教授商务课程；历史系教授历史；美术系的教师教授美术，等等。

项目组织结构也是分层的，但是项目经理不是向总经理报告职能经理或副总裁，而是向首席执行官报告。他们的员工具有完成其计划内的项目所需的各种技能。使用这种结构的组织主要通过为合同下的其他小组执行项目来赚取收入。例如，许多国防，建筑，工程和咨询公司都使用项目组织结构。这些公司经常雇用专门从事特定项目的人员。矩阵式组织结构代表功能结构和项目结构之间的中间立场。人员经常向职能经理和一个或多个项目经理报告。例如，许多公司的 IT 人员经常在两个或多个项目之间分配时间，但他们向 IT 部门的经理报告。矩阵组织中的项目经理拥有来自各个职能领域的人员来从事其项目。基于项目经理施加的控制量，矩阵组织结构可以是强，弱或平衡的。

Why is top management commitment crucial for project managers?
为什么最高管理层的承诺对项目经理至关重要？

ANSWER:
Project managers need adequate resources. The best way to kill a project is to withhold the required money, human resources, and visibility for the project. If project managers have top management commitment, they will also have adequate resources and not be distracted by events that do not affect their specific projects. Project managers often require approval for unique project needs in a timely manner. For example, on large IT projects, top management must understand that unexpected problems may result from the nature of the products being developed and the specific skills of the people on the project team. The team might need additional hardware and software halfway through the project for proper testing, or the project manager might need to offer special pay and benefits to attract and retain key project personnel. With top management commitment, project managers can meet these needs. Project managers must have cooperation from people in other parts of the organization. Because most IT projects cut across functional areas, top management must help project managers deal with the political issues that often arise. If certain functional managers are not responding to project managers' requests for necessary information, top management must step in to encourage functional managers to cooperate. Project managers often need someone

to mentor and coach them on leadership issues. Many IT project managers come from technical positions and are inexperienced as managers. Senior managers should take the time to pass on advice on how to be good leaders. They should encourage new project managers to take classes to develop leadership skills and allocate the time and funds for managers to do so.

项目经理需要足够的资源。杀死项目的最佳方法是保留项目所需的资金，人力资源和可见性。如果项目经理有最高管理者的承诺，他们也将有足够的资源并且不会因不影响其特定项目的事件而分心。项目经理通常需要及时批准独特的项目需求。例如，在大型 IT 项目中，高层管理人员必须了解，意外问题可能是由于所开发产品的性质以及项目团队人员的特定技能所导致的。团队可能需要在项目进行到一半时进行额外的硬件和软件以进行正确的测试，或者项目经理可能需要提供特殊的薪水和福利来吸引和留住关键的项目人员。凭借最高管理层的承诺，项目经理可以满足这些需求。项目经理必须获得组织其他部门人员的合作。由于大多数 IT 项目跨越职能领域，因此高层管理人员必须帮助项目经理应对经常出现的政治问题。如果某些职能经理没有响应项目经理对必要信息的要求，那么高层管理人员必须介入以鼓励职能经理进行合作。项目经理通常需要某人在领导力问题上进行辅导和指导。许多 IT 项目经理都来自技术职位，没有经验。高级管理人员应该花时间就如何成为优秀的领导者提出建议。他们应鼓励新的项目经理参加课程，以培养领导技能，并为经理分配时间和资金。

What is a systems development life cycle? What are some of the predictive models associated with the systems development life cycle?

什么是系统开发生命周期？ 与系统开发生命周期相关的一些预测模型是什么？

ANSWER:

A systems development life cycle (SDLC) is a framework for describing the phases of developing information systems. In addition to the waterfall model for the SDLC, other predictive life cycles include the spiral model, the prototyping model, and the Rapid Application Development (RAD) model. The project team spends a large portion of the project attempting to clarify the requirements of the entire system and then producing a design. Users are often unable to see any tangible results in terms of working software for an extended period. Below are brief descriptions of several predictive SDLC models: The waterfall life cycle model has well-defined, linear stages of systems development and support. This life cycle model assumes that requirements will remain stable after they are defined. The spiral life cycle model was developed based on refinements of the waterfall model as applied to large government software projects. It recognizes the fact that most software is developed using an iterative or spiral approach rather than a linear approach. The prototyping life cycle model is used for developing software prototypes to clarify user requirements for operational software. It requires heavy user involvement, and developers use a model to generate functional requirements and physical design specifications simultaneously. Developers can throw away or keep prototypes, depending on the project. The RAD life cycle model uses an approach in which developers work with an evolving prototype. This life cycle model also requires heavy user involvement and helps produce systems quickly without sacrificing quality. Developers use RAD tools such as CASE (computer-aided software engineering), JRP (joint requirements planning), and JAD

(joint application design) to facilitate rapid prototyping and code generation.

系统开发生命周期（SDLC）是一个框架，用于描述开发信息系统的各个阶段。除了用于 SDLC 的瀑布模型外，其他预测生命周期包括螺旋模型，原型模型和快速应用程序开发 （RAD）模型。项目团队在项目中花费了很大一部分，试图弄清整个系统的需求，然后进行设计。在长时间运行的软件方面，用户通常看不到任何实际结果。以下是几种预测性 SDLC 模型的简要说明：瀑布生命周期模型具有定义明确的线性阶段的系统开发和支持。该生命周期模型假设需求在定义后将保持稳定。螺旋生命周期模型是基于瀑布模型的改进而开发的，该模型适用于大型政府软件项目。它认识到大多数软件是使用迭代或螺旋方法而非线性方法开发的事实。原型生命周期模型用于开发软件原型，以阐明用户对操作软件的要求。它需要用户的大量参与，并且开发人员使用模型来同时生成功能需求和物理设计规范。开发人员可以根据项目放弃或保留原型。　RAD 生命周期模型使用一种方法，使开发人员可以使用不断发展的原型。此生命周期模型还需要大量用户参与，并有助于在不牺牲质量的前提下快速生产系统。开发人员使用 RAD 工具，例如 CASE（计算机辅助软件工程），JRP（联合需求计划）和 JAD（联合应用程序设计）来促进快速原型设计和代码生成。

Discuss four key issues project managers must address when working on global projects.
讨论项目经理在处理全球项目时必须解决的四个关键问题。

ANSWER:
Communications.
Because people work in different time zones, speak different languages, have different cultural backgrounds, and celebrate different holidays, it is important to address how people will communicate in an efficient and timely manner.
Trust. Trust is an important issue for all teams, especially when they are global teams. It is important to start building trust immediately by recognizing and respecting others' differences and the value they add to the project. Common work practices. It is important to align work processes and develop a modus operandi with which everyone agrees and is comfortable.
Tools. IT pays a vital role in globalization, especially in enhancing communications and work practices.
Many people use free tools such as Skype, Google Docs or social media to communicate. Many project management software tools include their own communications and collaboration features in an integrated package.

通讯。
由于人们在不同的时区工作，说不同的语言，具有不同的文化背景以及庆祝不同的假期，因此重要的是要解决人们将如何高效，及时地进行交流的问题。
相信。　信任对于所有团队来说都是重要的问题，尤其是当他们是全球团队时。　重要的是要通过认识并尊重他人的差异及其为项目增加的价值来立即建立信任。　常见的工作惯例。　重要的是要协调工作流程并制定一种大家都同意并且感到满意的作案手法。
工具。　IT 在全球化中，尤其是在加强沟通和工作实践方面，起着至关重要的作用。
许多人使用 Skype，Google 文档或社交媒体等免费工具进行交流。　许多项目管理软件工具在集成包中都包含其自己的通信和协作功能。

List and briefly describe the four project cost management processes.

列出并简要描述四个项目成本管理过程。

ANSWER:

The four processes for project cost management are as follows:

(1) Planning cost management involves determining the policies, procedures, and documentation that will be used for planning, executing, and controlling project cost. The main output of this process is a cost management plan.

(2) Estimating costs involves developing an approximation or estimate of the costs of the resources needed to complete a project. The main outputs of the cost estimating process are activity cost estimates, basis of estimates, and project document updates.

(3) Determining the budget involves allocating the overall cost estimate to individual work items to establish a baseline for measuring performance. The main outputs of the cost budgeting process are a cost baseline, project funding requirements, and project document updates.

(4) Controlling costs involves controlling changes to the project budget. The main outputs of the cost control process are work performance information, cost forecasts, change requests, project management plan updates, project documents updates, and organizational process assets updates.

项目成本管理的四个流程如下:

(1)计划成本管理包括确定用于计划、执行和控制项目成本的政策、程序和文件。这个过程的主要输出是一个成本管理计划。

(2)估算成本包括对完成一个项目所需资源的成本进行近似或估算。成本估算过程的主要输出是作业成本估算、估算基础和项目文档更新。

确定预算包括将总体成本估计分配到单个工作项,以建立度量性能的基线。成本预算过程的主要产出是成本基线、项目资金需求和项目文档更新。

(4)控制成本包括控制项目预算的变化。成本控制过程的主要输出是工作绩效信息、成本预测、变更请求、项目管理计划更新、项目文档更新和组织过程资产更新。

What are tangible and intangible costs? Distinguish between direct and indirect costs and give examples of each.

什么是有形成本和无形成本?区分直接成本和间接成本,并分别举例说明。

ANSWER:

Tangible and intangible costs and benefits are categories for determining how well anorganization can define the estimated costs and benefits for a project. Tangible costs or benefits are those costs or benefits that an organization can easily measure in dollars.

Conversely, intangible costs or benefits are costs or benefits that are difficult to measure in monetary terms. Intangible benefits for projects often include items like goodwill, prestige, and general statements of improved productivity that an organization cannot easily translate into

dollar amounts. Because intangible costs and benefits are difficult to quantify, they are often harder to justify.

Direct costs are costs that can be directly related to producing the products and services of the project. One can attribute direct costs directly to a certain project. Project managers should focus on direct costs, since they can control them. For example, direct costs include the salaries of people working full time on the project and the cost of hardware and software purchased specifically for the project. Indirect costs are costs that are not directly related to the products or services of the project, but are indirectly related to performing the project. For example, the cost of electricity, paper towels, and so on in a large building housing a thousand employees who work on many projects would be indirect costs. Indirect costs are allocated to projects, and project managers have very little control over them.

有形和无形成本和收益是用于确定组织可以如何定义项目的估计成本和收益的类别。有形成本或收益是组织可以轻松以美元计量的成本或收益。

相反，无形成本或收益是难以用货币计量的成本或收益。项目的无形收益通常包括诸如商誉，声望和提高生产率的一般性陈述，而组织无法轻易将其转化为美元。由于无形的成本和收益难以量化，因此通常更难证明其合理性。

直接成本是与生产项目产品和服务直接相关的成本。可以将直接成本直接归因于某个项目。项目经理应该关注直接成本，因为他们可以控制它们。例如，直接成本包括专职从事该项目的人员的工资以及专门为该项目购买的硬件和软件的成本。间接成本是与项目的产品或服务不直接相关但与执行项目间接相关的成本。例如，在一栋容纳一千名从事许多项目的员工的大型建筑物中的电费，纸巾等成本就是间接成本。间接成本分配给项目，项目经理对其几乎没有控制权。

What are the three basic types of cost estimating? Describe each type.
费用估算的三种基本类型是什么？ 描述每种类型。

ANSWER:
The three basic types of cost estimating are as follows:

(1) A rough order of magnitude (ROM) estimate provides an estimate of what a project will cost. This type of estimate is done very early in a project or even before a project is officially started. Project managers and top management use this estimate to help make project selection decisions. The timeframe for this type of estimate is often three or more years prior to project completion. A ROM estimate's accuracy is typically –50 percent to +100 percent, which means that the project's actual costs could be 50 percent below the ROM estimate or 100 percent above. For information technology project estimates, this accuracy range is often much wider.

(2) A budgetary estimate is used to allocate money into an organization's budget. Many organizations develop budgets at least two years into the future. Budgetary estimates are made one to two years prior to project completion. The accuracy of budgetary estimates is typically –10 percent to +25 percent, meaning the actual costs could be 10 percent less or 25 percent more than the budgetary estimate.

(3) A definitive estimate provides an accurate estimate of project costs. Definitive estimates

are used for making many purchasing decisions for which accurate estimates are required and for estimating final project costs. Definitive estimates are made one year or less prior to project completion. A definitive estimate should be the most accurate of the three types of estimates. The accuracy of this type of estimate is normally –5 percent to +10 percent, meaning the actual costs could be 5 percent less or 10 percent more than the definitive estimate.

成本估算的三种基本类型如下：

(1)一个粗略的数量级(ROM)估计提供了一个项目成本的估计。这种类型的评估是在项目的早期，甚至是在项目正式开始之前进行的。项目经理和最高管理人员使用这个估算来帮助制定项目选择决策。这类评估的时间框架通常是项目完成前三年或三年以上。一个 ROM 估计的准确性通常是- 50%到+ 100%，这意味着项目的实际成本可能比 ROM 估计低 50%或高 100%。对于信息技术项目估算，这个精度范围通常要大得多。

(2)概算用于将资金分配到一个组织的预算中。许多组织至少在未来两年内制定预算。概算是在项目完成前一至两年作出的。预算估计的准确性通常为- 10%到+ 25%，这意味着实际成本可能比预算估算少 10%或多 25%。

(3)最终估计是对项目成本的准确估计。最终估算用于做出许多需要准确估算的采购决策，以及估算最终项目成本。在项目完成前一年或更短时间内作出明确的估计。一个明确的估计应该是三种类型的估计中最准确的。这种估算的准确性通常在- 5%到+ 10%之间，这意味着实际成本可能比最终估算少 5%或多 10%。

Describe three tools used in developing a good cost estimate.

描述用于制定良好成本估算的三种工具。

ANSWER:

Several tools and techniques can be used to create a cost estimate. Three of such tools are as follows:

(1) Analogous estimates use the actual cost of a previous, similar project as the basis for estimating the cost of the current project. This technique requires a good deal of expert judgment and is generally less costly than other techniques, but it is also less accurate. Analogous estimates are most reliable when the previous projects are similar in fact, not just in appearance. In addition, the groups preparing cost estimates must have the needed expertise to determine whether certain parts of the project will be more or less expensive than analogous projects.

(2) Bottom-up estimates involve estimating the costs of individual work items or activities and summing them to get a project total. This approach is sometimes referred to as activity-based costing. The size of the individual work items and the experience of the estimators drive the accuracy of the estimates. Using smaller work items increases the accuracy of the cost estimate because the people assigned to do the work develop the cost estimate instead of someone unfamiliar with the work. The drawback with bottom-up estimates is that they are usually time-intensive and therefore expensive to develop.

(3)Three-point estimates involve estimating the most likely, optimistic, and pessimistic costs for items.

(4) Parametric estimating uses project characteristics (parameters) in a mathematical model

to estimate project costs. Parametric models are most reliable when the historical information used to create the model is accurate, the parameters are readily quantifiable, and the model is flexible in terms of the project's size.

可以使用几种工具和技术来进行成本估算。其中三种工具如下:

(1)类比估算使用以前类似项目的实际成本作为估算当前项目成本的基础。这种技术需要大量的专家判断，通常比其他技术成本更低，但也不太准确。如果以前的项目实际上是相似的，而不仅仅是外观相似，那么类似的估算是最可靠的。此外，编制费用概算的小组必须具有所需的专门知识，以确定项目的某些部分比类似项目的费用高还是低。

自底向上的估计包括对单个工作项或活动的成本进行估计，并将它们相加得到项目总数。这种方法有时被称为作业成本法。单个工作项的大小和评估人员的经验决定了评估的准确性。使用较小的工作项增加了成本估算的准确性，因为被指派做这项工作的人，而不是不熟悉这项工作的人来开发成本估算。自底向上估计的缺点是它们通常需要大量时间，因此开发成本很高。

(3)三点估算包括估算项目最有可能、最乐观和最悲观的成本。

(4)参数估算利用数学模型中的项目特征(参数)来估算项目成本。当用于创建模型的历史信息是准确的，参数是容易量化的，并且模型在项目规模方面是灵活的，参数模型是最可靠的。

Earned value management involves calculating three values for each activity or summary activity from a project's WBS. Describe each of these three values with examples.

挣值管理包括从项目的 WBS 中为每个活动或汇总活动计算三个值。用示例描述这三个值。

ANSWER:

(1) The planned value (PV) is the authorized budget assigned to scheduled work. Suppose that a project included a summary activity of purchasing and installing a new web server. Suppose further that, according to the plan, it would take one week and cost a total of $10,000 for the labor hours, hardware, and software. Therefore, the planned value (PV) for the activity that week is $10,000.

(2) The actual cost (AC) is the realized cost incurred for the work performed on an activity during a specific time period. For example, suppose that it actually took two weeks and cost $20,000 to purchase and install the new web server. Assume that $15,000 of these actual costs were incurred during Week 1 and $5,000 was incurred during Week 2. These amounts are the actual cost (AC) for the activity each week.

(3) The earned value (EV) is the measure of work performed expressed in terms of the budget authorized for that work. It cannot be greater than the authorized PV budget for a component as it is calculated as the sum of the PV of the completed work.

(1)计划值(PV)是分配给计划工作的授权预算。假设一个项目包含了购买和安装新 web 服务器的摘要活动。进一步假设，根据计划，它将花费一周时间，劳动时间、硬件和软件的总成本为 10,000 美元。因此，当周活动的计划值(PV)是$10,000。

(2)实际成本(AC)是指某一活动在特定时期内所进行的工作所发生的已实现的成本。例如，假设购买和安装新的 web 服务器实际上花了两周时间，成本为 20,000 美元。假设这些实际成本中有 15,000 美元发生在第一周，5,000 美元发生在第 2 周。这些金额是每周活动的实际成本(AC)。

(3)挣值(EV)是对已完成工作的度量，以该工作授权的预算表示。它不能大于一个组件的授权 PV 预算，因为它是作为已完成工作的 PV 的总和计算的。