

PMP® Certification Exam Quick Reference: ITTO Summary

	Process Name	Process Group	Process Description	Inputs	Tools & Techniques	Outputs
Risk	11.6 Implement Risk Responses	Executing	Implements risk response plans.	•Project Management Plan •Project Documents •OPAs	•Expert Judgement •Interpersonal & Team Skills •PMIS	•Change Requests •Project Documents Updates
	11.7 Monitor Risks	Monitoring & Controlling	Monitors risk responses, monitors for risks and continuously evaluates the effectiveness of risk plans.	•Project Mgmt Plan •Project Documents •Work Performance Data •Work Performance Reports	•Data Analysis •Audits •Meetings	•Work Perf. Information •Change Requests •Project Mgmt Plan Updates •Project Documents Updates •OPAs Updates
Procurement	12.1 Plan Procurement Management	Planning	Determines what will be procured and the procurement approach.	•Project Charter •Business Documents •Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Source Selection Analysis •Meetings	•Procurement Mgmt Plan •Procurement Strategy •Bid Documents •Procurement Statement of Work •Source Selection Criteria •Make-or-buy Decisions •Independent Cost Estimates •Change Requests •Project Documents Updates •OPAs Updates
	12.2 Conduct Procurements	Executing	Collects responses from sellers, selects the seller(s) and awards the contract.	•Project Management Plan •Project Documents •Procurement Documentation •Seller Proposals •EEFs •OPAs	•Expert Judgment •Advertising •Bidder Conferences •Data Analysis •Interpersonal & Team Skills	•Selected Sellers •Agreements •Change Requests •Project Mgmt Plan Updates •Project Documents Updates •OPAs Updates
	12.3 Control Procurements	Monitoring & Controlling	Monitors contract performance, manages procurement relationships and manages necessary changes to contracts.	•Project Mgmt Plan •Project Documents •Agreements •Procurement Documentation •Approved Change Requests •Work Performance Data •EEFs •OPAs	•Expert Judgement •Claims Administration •Data Analysis •Inspection •Audits	•Closed Procurements •Work Perf. Information •Procurement Documentation Updates •Change Requests •Project Mgmt Plan Updates •Project Documents Updates •OPAs Updates
Stakeholder	13.1 Identify Stakeholders	Initiating	Identifies and analyzes stakeholders to determine their influence and interest in the project.	•Project Charter •Business Documents •Project Management Plan •Project Documents •Agreements •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Data Representation •Meetings	•Stakeholder Register •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	13.2 Plan Stakeholder Engagement	Planning	Reviews results from stakeholder analysis and determines the most effective way to engage stakeholders.	•Project Charter •Project Mgmt Plan •Project Documents •Agreements •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analytics •Decision Making •Data Representation •Meetings	•Stakeholder Engagement Plan
	13.3 Manage Stakeholder Engagement	Executing	Manages engagements with stakeholders to ensure needs and expectations are addressed.	•Project Management Plan •Project Documents •EEFs •OPAs	•Expert Judgement •Communication Skills •Interpersonal & Team Skills •Ground Rules •Meetings	•Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	13.4 Monitor Stakeholder Engagement	Monitoring & Controlling	Monitors stakeholder relationships and recommends changes/adjustments when necessary.	•Project Mgmt Plan •Project Documents •Work Performance Data •EEFs •OPAs	•Data Analysis •Decision Making •Data Representation •Communication Skills •Interpersonal & Team Skills •Meetings	•Work Perf. Information •Change Requests •Project Mgmt Plan Updates •Project Documents Updates

EEFs: Enterprise Environmental Factors
OPAs: Organizational Process Assets
PMIS: Project Management Information System



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Integration	4.1 Develop Project Charter	Initiating	Creates the project charter which authorizes a project and gives authority to the PM.	•Business Documents •Agreements •EEFs •OPAs	•Expert Judgment •Data Gathering •Interpersonal & Team Skills •Meetings	•Project Charter •Assumption Log
	4.2 Develop Project Management Plan	Planning	Draws together all subsidiary plans into a complete project management plan.	•Project Charter •Outputs from Other Processes •EEFs •OPAs	•Expert Judgment •Data Gathering •Interpersonal & Team Skills •Meetings	•Project Mgmt Plan
	4.3 Direct & Manage Project Work	Executing	Executes the work defined in the project management plan.	•Project Mgmt Plan •Project Documents •Approved Change Requests •EEFs •OPAs	•Expert Judgment •PMIS •Meetings	•Deliverables •Work Performance Data •Issue Log •Change Requests •Project Mgmt Plan Updates •Project Documents Updates •OPAs Updates
	4.4 Manage Project Knowledge	Executing	Manages prior organizational knowledge and current project knowledge to produce or improve the project outcomes.	•Project Mgmt Plan •Project Documents •Deliverables •EEFs •OPAs	•Expert Judgment •Knowledge Management •Information Management •Interpersonal & Team Skills	•Lessons Learned Register •Project Mgmt Plan Updates •OPAs Updates
	4.5 Monitor & Control Project Work	Monitoring & Controlling	Monitors performance in order to meet the performance goals detailed in the Project Management Plan.	•Project Mgmt Plan •Project Documents •Work Perf. Information •Agreements •EEFs •OPAs	•Expert Judgment •Data Analysis •Decision Making •Meetings	•Work Performance Reports •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	4.6 Perform Integrated Change Control	Monitoring & Controlling	Reviews all change requests to determine if they should be approved or rejected.	•Project Mgmt Plan •Project Documents •Work Performance Reports •Change Requests •EEFs •OPAs	•Expert Judgment •Change Control Tools •Data Analysis •Decision Making •Meetings	•Approved Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	4.7 Close Project or Phase	Closing	Closes all project activity to formally complete the project or phase.	•Project Charter •Project Mgmt Plan •Project Documents •Accepted Deliverables •Business Documents •Agreements •Procurement Documentation •OPAs	•Expert Judgment •Data Analysis •Meetings	•Project Documents Updates •Final Product, service or result transition •Final Report •OPAs Updates
Scope	5.1 Plan Scope Management	Planning	Creates the Scope Management Plan.	•Project Charter •Project Mgmt Plan •EEFs •OPAs	•Expert Judgment •Data Analysis •Meetings	•Scope Mgmt Plan •Requirements Mgmt Plan
	5.2 Collect Requirements	Planning	Collects the requirements to meet the project objectives.	•Project Charter •Project Mgmt Plan •Project Documents •Business Documents •Agreements •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Decision Making •Data Representation •Interpersonal & Team Skills •Context Diagram •Prototypes	•Requirements Documentation •Requirements Traceability Matrix
	5.3 Define Scope	Planning	Evaluates the project requirements and creates a more precise Scope Statement.	•Project Charter •Project Management Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Analysis •Decision Making •Interpersonal & Team Skills •Product Analysis	•Project Scope Statement •Project Documents Updates
	5.4 Create WBS	Planning	Divides high-level requirements into smaller, more manageable work packages.	•Project Management Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Decomposition	•Scope Baseline •Project Documents Updates
	5.5 Validate Scope	Monitoring & Controlling	A formal scope review to accept the project deliverable.	•Project Mgmt Plan •Project Documents •Verified Deliverables •Work Performance Data	•Inspection •Decision Making	•Accepted Deliverables •Work Perf. Information •Change Requests •Project Documents Updates
	5.6 Control Scope	Monitoring & Controlling	Monitors the project scope and protects the scope baseline from unapproved change requests.	•Project Mgmt Plan •Project Documents •Work Performance Data •OPAs	•Data Analysis	•Work Perf. Information •Change Requests •Project Mgmt Plan Updates •Project Documents Updates

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OPAs: Organizational Process Assets

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Based on PMBoK® Guide, 6th Edition

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Schedule	6.1 Plan Schedule Management	Planning	Creates the Schedule Management Plan.	•Project Charter •Project Mgmt Plan •EEFs •OPAs	•Expert Judgment •Data Analysis •Meetings	• Schedule Mgmt Plan
	6.2 Define Activities	Planning	Breaks work packages into the schedule activities required to create the project deliverables.	•Project Mgmt Plan •EEFs •OPAs	•Expert Judgment •Decomposition •Rolling Wave Planning •Meetings	•Activity List •Activity Attributes •Milestone List •Change Requests •Project Mgmt Plan Updates
	6.3 Sequence Activities	Planning	Determines the relationships between activities in order to create a project network diagram.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Precedence Diagramming Method (PDM) •Dependency Determination and Integration •Leads and Lags •PMIS	•Project Schedule Network Diagrams •Project Documents Updates
	6.4 Estimate Activity Durations	Planning	Determines the resources (labor, materials and equipment) necessary to perform project activities.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Analogous Estimating •Parametric Estimating •Three-point Estimating •Bottom-up Estimating •Data Analysis •Decision Making •Meetings	•Duration Estimates •Basis of Estimates •Project Documents Updates
	6.5 Develop Schedule	Planning	Utilizes outputs from the other Time Management planning processes to create a project schedule and schedule baseline.	•Project Mgmt Plan •Project Documents •Agreements •EEFs •OPAs	•Schedule Network Analysis •Critical Path Method •Resource Optimization •Data Analysis •Leads and Lags •Schedule Compression •PMIS •Agile Release Planning	•Schedule Baseline •Project Schedule •Schedule Data •Project Calendars •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	6.6 Control Schedule	Monitoring & Controlling	Monitors the project schedule and protects the schedule baseline from unapproved change requests.	•Project Mgmt Plan •Project Documents •Work Performance Data •OPAs	•Data Analysis •Critical Path Method •PMIS •Resource Optimization •Leads and Lags •Schedule Compression	•Work Perf. Information •Schedule Forecasts •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
Cost	7.1 Plan Cost Management	Planning	Creates the Cost Management Plan.	•Project Charter •Project Mgmt Plan •EEFs •OPAs	•Expert Judgment •Data Analysis •Meetings	• Cost Mgmt Plan
	7.2 Estimate Costs	Planning	Estimates the costs to complete project activities.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Analogous Estimating •Parametric Estimating •Bottom-up Estimating •Three-point Estimates •Data Analysis •PMIS •Decision Making	•Cost Estimates •Basis of Estimates •Project Documents Updates
	7.3 Determine Budget	Planning	Combines the cost estimates with the project schedule to create a cost baseline.	•Project Mgmt Plan •Project Documents •Business Documents •Agreements •EEFs •OPAs	•Expert Judgment •Cost Aggregation •Data Analysis •Historical Information Review •Funding Limit Reconciliation •Financing	•Cost Baseline •Project Funding Requirements •Project Documents Updates
	7.4 Control Costs	Monitoring & Controlling	Monitors the project budget and protects the cost baseline from unapproved change requests.	•Project Mgmt Plan •Project Documents •Project Funding Requirements •Work Performance Data •OPAs	•Expert Judgment •Data Analysis •To-complete Perf Index (TCPI) •PMIS	•Work Perf. Information •Cost Forecasts •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
Quality	8.1 Plan Quality Management	Planning	Identifies quality requirements and standards for the project work and the project deliverables.	•Project Charter •Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Decision Making •Data Representation •Test & Inspection Planning •Meetings	•Quality Mgmt Plan •Quality Metrics •Project Mgmt Plan Updates •Project Documents Updates
	8.2 Manage Quality	Executing	Ensures the correct standards and procedures are used to achieve the required quality metrics.	•Project Management Plan •Project Documents •OPAs	•Data Gathering •Data Analysis •Decision Making •Data Representation •Audits •Design for X •Problem Solving •Quality Improvement Methods	•Quality Reports •Test & Evaluation Documents •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
	8.3 Control Quality	Monitoring & Controlling	Inspects project deliverables to determine if they meet the quality standards and recommends changes when necessary.	•Project Mgmt Plan •Project Documents •Approved Change Requests •Deliverables •Work Performance Data •EEFs •OPAs	•Data Gathering •Data Analysis •Inspection •Testing/Product Evaluations •Data Representation •Meetings	•Quality Control Measurements •Verified Deliverables •Work Perf. Information •Change Requests •Project Mgmt Plan Updates •Project Documents Updates

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PMIS: Project Management Information System

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Resource	9.1 Plan Resource Management	Planning	Creates the Resource Management Plan which documents project roles, responsibilities, structure and staffing.	•Project Charter •Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Representation •Organizational Theory •Meetings	•Resource Mgmt Plan •Team Charter •Project Document Updates
	9.2 Estimate Activity Resources	Planning	Determines the resources (labor, materials and equipment) necessary to perform project work.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Bottom-up Estimating •Analogous Estimating •Parametric Estimating •Data Analysis •PMIS •Meetings	•Resource Requirements •Basis of Estimates •Resource Breakdown Structure •Project Documents Updates
	9.3 Acquire Resources	Executing	Obtains the necessary resources to complete the project work.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Decision Making •Interpersonal & Team Skills •Pre-assignment •Virtual Teams	•Physical Res. Assignments •Project Team Assignments •Resource Calendars •Change Requests •Project Mgmt Plan Updates •Project Document Updates •EEFs Updates •OPAs Updates
	9.4 Develop Team	Executing	Works to develop team skills and a working environment that support positive team performance.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Colocation •Virtual Teams •Communication Technology •Interpersonal & Team Skills •Recognition and Rewards •Training •Individual & Team Assessments •Meetings	•Team Perf. Assessments •Change Requests •Project Mgmt Plan Updates •Project Documents Updates •EEFs Updates •OPAs Updates
	9.5 Manage Team	Executing	Tracks team performance and manages team changes to improve project performance.	•Project Mgmt Plan •Project Documents •Work Performance Reports •Team Performance Assessments •EEFs •OPAs	•Interpersonal & Team Skills •PMIS	•Change Requests •Project Mgmt Plan Updates •Project Documents Updates •EEFs Updates
	9.6 Control Resources	Monitoring & Controlling	Ensuring resources assigned to the project are available. Monitoring planned vs actual utilization.	•Project Management Plan •Project Documents •Work Performance Data •Agreements •OPAs	•Data Analysis •Problem Solving •Work Performance Data •Interpersonal & Team Skills •PMIS	•Work Performance Information •Change Requests •Project Mgmt Plan Updates •Project Document Updates
Communication	10.1 Plan Communications Management	Planning	Creates the Communication Management Plan.	•Project Charter •Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Communication Req. Analysis •Communication Technology •Communication Models •Communication Methods •Interpersonal & Team Skills •Data Representation •Meetings	•Communication Mgmt Plan •Project Mgmt Plan Updates •Project Documents Updates
	10.2 Manage Communications	Executing	Manages project communication in accordance with the Communication Management Plan.	•Project Mgmt Plan •Project Documents •Work Performance Reports •EEFs •OPAs	•Communication Technology •Communication Methods •Communication Skills •PMIS •Project Reporting •Interpersonal & Team Skills •Meetings	•Project Communications •Project Mgmt Plan Updates •Project Documents Updates •OPAs Updates
	10.3 Monitor Communications	Monitoring & Controlling	Monitors project communication to ensure that the information needs of stakeholders are met.	•Project Mgmt Plan •Project Documents •Work Performance Data •EEFs •OPAs	•Expert Judgment •PMIS •Data Representation •Interpersonal & Team Skills •Meetings	•Work Perf. Information •Change Requests •Project Mgmt Plan Updates •Project Documents Updates
Risk	11.1 Plan Risk Management	Planning	Creates the Risk Management Plan.	•Project Charter •Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Analysis •Meetings	• Risk Mgmt Plan
	11.2 Identify Risks	Planning	Identifies and documents the risks (positive & negative) that may influence the project.	•Project Management Plan •Project Documents •Agreements •Procurement Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Interpersonal & Team Skills •Prompt Lists •Meetings	•Risk Register •Risk Report •Project Documents Updates
	11.3 Perform Qualitative Risk Analysis	Planning	Assesses the probability and impact of each risk in order to prioritize them.	•Project Mgmt Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Data Analysis •Interpersonal & Team Skills •Risk Categorization •Risk Representation •Meetings	•Project Document Updates
	11.4 Perform Quantitative Risk Analysis	Planning	Assigns a numeric value to project risks.	•Project Management Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Interpersonal & Team Skills •Representations of Uncertainty •Data Analysis	•Project Document Updates
	11.5 Plan Risk Responses	Planning	Evaluates risk analysis results to determine how to best respond to each project risk.	•Project Management Plan •Project Documents •EEFs •OPAs	•Expert Judgment •Data Gathering •Interpersonal & Team Skills •Strategies for Threats •Strategies for Opportunities •Contingent Response Strategies •Strategies for Overall Project Risk •Data Analysis •Decision Making	•Change Requests •Project Mgmt Plan Updates •Project Document Updates