

ASQ Certified Supplier Quality Professional (CSQP)

Body of Knowledge

The topics in this Body of Knowledge include subtext explanations and the cognitive level at which the questions will be written. This information will provide useful guidance for both the Exam Development Committee and the candidate preparing to take the exam. The subtext is not intended to limit the subject matter or be all-inclusive of that material that will be covered in the exam. It is meant to clarify the type of content that will be included on the exam. The descriptor in parentheses at the end of each entry refers to the maximum cognitive level at which the topic will be tested. A complete description of cognitive levels is provided at the end of this document.

I. Supplier Strategy

(22 Questions)

- A. Supply Chain Vision/Mission (Apply)
Assist in the development and communication of the supply chain vision/mission statement.
- B. Supplier Lifecycle Management
 - 1. Supplier Selection (Create)
Develop the process for supplier selection and qualification including the identification of sub-tier suppliers, using tools such as SIPOC and decision analysis.
 - 2. Performance Monitoring (Create)
Develop the supplier performance monitoring system including; expected levels of performance, process reviews, performance evaluations, improvement plans, and exit strategies.
 - 3. Supplier Classification System (Create)
Define a supplier classification system, e.g. non-approved, approved, preferred, certified, partnership, and disqualified.
 - 4. Partnerships and Alliances (Analyze)
Identify and analyze strategies for developing customer-supplier partnerships and alliances.

CSQP BOK (Continued)

C. Supply Chain Cost Analysis

1. **Cost Reduction** (Analyze)
Identify and apply relevant inputs to prioritize cost reduction opportunities.
2. **Supply Chain Rationalization** (Analyze)
Interpret and analyze the optimization of a supply base to improve spending and leverage investments into supplier quality, or risk reduction.
3. **Make/Buy Decisions** (Analyze)
Provide input on make/buy decisions by using internal and external capability analysis. Apply tools such as, SWOT analysis and use historical performance to analyze requirements.

- D. **Supplier Agreements or Contracts** (Apply)
Review and provide input for developing terms and conditions that govern supplier relationships to ensure quality considerations are addressed.

- E. **Deployment of Strategy and Expectations** (Apply)
Communicate strategy internally, and communicate expectations to suppliers externally.

II. Risk Management (14 Questions)

A. Strategy

1. **System** (Create)
Develop a risk-based approach to manage the supply base, including business continuity and contingency planning.
2. **Product/Service** (Evaluate)
Develop and implement a risk mitigation plan to minimize, monitor, and/or control risks.
3. **Prevention Strategies** (Evaluate)
Identify and evaluate strategies and techniques such as supply chain mapping, avoidance, detection and mitigation used to prevent the introduction of counterfeit parts, materials, and services.

CSQP BOK (Continued)

B. Analysis and Mitigation

1. Analysis (Evaluate)
Identify, assess and prioritize risks to supplier quality using tools such as, decision analysis (DA), failure mode effects analysis (FMEA), fault tree analysis (FTA), and process auditing.
2. Mitigation Control
Develop and deploy controls such as inspection or test plan. Prioritize mitigation activities and sustain a risk mitigation plan appropriate to the risk of the product/service. (Create)
3. Mitigation Effectiveness (Create)
Verify the effectiveness of the control plan and improve if necessary, using continuous improvement methods such as plan-do-check-act (PDCA), lean and product auditing tools.

III. Supplier Selection and Part Qualification (30 Questions)

A. Product/Service Requirements Definition

1. Internal Design Reviews (Apply)
Identify and apply common elements of the design review process, including roles and responsibilities of the participants.
2. Identifying Requirements (Evaluate)
Identify and apply internal requirements (e.g. interrelated functional business units) for product or service in collaboration with stakeholders, including the requirements for supply chain and sub-tier suppliers.

B. Supplier Selection Planning

1. Supplier Comparison (Evaluate)
Evaluate existing supplier's capabilities, capacities, past quality, delivery, price, lead times, and responsiveness against identified requirements.
2. Potential Suppliers Evaluation (Evaluate)
Assess potential new suppliers against identified requirements using tools such as, self-assessments, audits and financial analysis. Verify third-party certification status and regulatory compliance and analyze and report on results of assessments to support the supplier selection process.

CSQP BOK (Continued)

- 3. Supplier Selection (Evaluate)**
Evaluate and select supplier based on analysis of assessment reports and existing supplier evaluations, using decision analysis tools and selection matrices.

C. Part, Process and Service Qualification

- 1. Technical Review (Evaluate)**
Interpret and evaluate technical specification requirements and characteristics such as, views, title blocks, dimensioning and tolerancing and GD&T symbols as they relate to product and process.
- 2. Supplier Relations (Evaluate)**
Collaborate with suppliers to define, interpret, and classify quality characteristics for the part/process/service.
- 3. Process and Service Qualification Planning (Analyze)**
Develop a part/process/service qualification plan with supplier and internal team, that includes calibration requirements, sample size, first article inspection, measurement system analysis (MSA), process flow diagram (PFD), failure mode and effects analysis (FMEA), control plans, critical to quality (CTQ), inspection planning, capability studies, material and performance testing, appearance approval and internal process validation.
- 4. Part Approval (Understand)**
Understand the production part approval process (PPAP) requirements and ensure suppliers understand the processes required to produce parts with consistent quality during an actual production run at production rates.
- 5. Validate Requirements (Evaluate)**
Collaborate with internal team to interpret the results of the executed qualification plan for the part/process/service.

IV. Supplier Performance Monitoring and Improvement (30 Questions)

A. Supplier Performance Monitoring

- 1. Supplier Metrics (Evaluate)**
Define, implement, and monitor supplier performance metrics such as, quality, delivery, cost and responsiveness.

CSQP BOK (Continued)

2. Supplier Performance (Analyze)
Analyze supplier performance data (e.g. warranty analysis/field returns, defect rates) and develop periodic reports (e.g. scorecard, dashboards).

3. Supplier Process Performance (Evaluate)
Apply lean principles and applications such as 5S, Kaizen, value stream mapping, single minute exchange of dies (SMED), kanban, muda, standardized work, takt time and error proofing to reduce waste and increase performance.

B. Assess Nonconforming Product/Process/Service (Evaluate)
Assess and evaluate nonconforming materials to determine whether a material review board (MRB) requires disposition. Conduct risk assessments to prevent future discrepancies.

C. Supplier Corrective and Preventive Action (CAPA)

1. Root Cause Analysis Tools and Methods (Evaluate)
Evaluate the root cause analysis of a problem using tools such as, cause and effect diagrams (CE), Pareto analysis, 5 Why's, fault tree analysis, design of experiments (DOE), brainstorming, check sheets, measurement system analysis (MSA), production records and review of process flow.

2. Collaboration with supplier (Evaluate)
Evaluate and implement corrective/ preventive action, and review its effectiveness and robustness with supplier. Understand the process of updating failure mode and effects analysis (FMEA) and process control plan, understand statistical process control (SPC), product and process design change.

V. Supplier Quality Management (30 Questions)

A. Supplier Quality Monitoring

1. Supplier Audit (Apply)
Describe and distinguish between the stages of a quality audit, from audit planning through conducting the audit. Understand and apply the various types of quality audits such as product, process, and management system.

2. Audit Reporting and Follow-up (Apply)
Apply process audit reporting and follow up, including verification of the effectiveness of corrective action.

CSQP BOK (Continued)

3. **Supplier Communication** (Evaluate)
Evaluate various communication techniques such as, periodic reviews, metric and performance indices, change management, notifications, recalls, change requests and business updates. Maintain active communication with suppliers to assess risk and take appropriate action.
4. **Supplier Development and Remediation** (Evaluate)
Identify and analyze present and future training needs and gaps, using quality methods and tools, such as Kaizen, and benchmarking. Use process improvement tools such as, DMAIC, cycle time reduction, defect rate and cost reduction. Evaluate supplier remediation to develop and manage improvement plans.
5. **Project Management Basics** (Apply)
Understand and apply various types of project reviews, such as phase-end, management, and retrospectives or post-project reviews to assess project performance and status, to review issues and risks, and discover and capture lessons learned from the project. Apply forecasts, resources, schedules, task and cost estimates to develop and monitor project plans.

B. Teams and Team Processes

1. **Team Development** (Apply)
Identify and describe the various types of teams and the classic stages of team development: forming, storming, norming, performing, and adjourning.
2. **Team Roles** (Understand)
Define and describe various team roles and responsibilities for leader, facilitator, coach, and individual member.
3. **Performance and Evaluation** (Understand)
Describe various techniques to evaluate training, including evaluation planning, feedback surveys, pre-training and post-training testing.

- C. **Compliance with Requirement and Supplier Categorization** (Evaluate)
Understand and evaluate compliance with regulations (e.g. RoHS, Governmental regulatory authorities), specifications, contracts, agreements and certification authority. Evaluate and categorize suppliers based on risk and performance.

CSQP BOK (Continued)

VI. Relationship Management (14 Questions)

- A. Supplier Onboarding (Apply)**
Understand and apply processes for orientation of suppliers such as, providing overview of company, vision, mission, guiding principles, overall requirements, expectations, and criticality of product, service, and delivery requirements.
- B. Communication**
- 1. Techniques and Mediation (Evaluate)**
Identify and apply communication techniques (oral, written, and presentation) specifically for internal stakeholders and suppliers to resolve issues. Apply different techniques when working in multi-cultural environments, and identify and describe the impact that culture and communications can have on quality.
- 2. Reporting Using Quality Tools (Analyze)**
Use appropriate technical and managerial reporting techniques, including the seven classic quality tools (Pareto charts, cause and effect diagrams, flowcharts, control charts, check sheets, scatter diagrams, and histograms) for effective presentation and reporting.
- C. Leadership and Collaboration (Evaluate)**
Understand and apply techniques for coaching suppliers through regular communications, influencing without authority, negotiation techniques and establish clear roles and responsibilities of internal stakeholders and suppliers.

VII. Business Governance, Ethics and Compliance (10 Questions)

- A. ASQ Code of Ethics (Apply)**
Determine appropriate behavior in situations requiring ethical decisions, including identifying conflicts of interest, recognizing and resolving ethical issues.
- B. Compliance (Apply)**
Understand issues of compliance and their applicable policies, laws and regulations (e.g., conflict of interest, confidentiality, bribery).

CSQP BOK (Continued)

C. Confidentiality

- 1. Organizational Policies (Apply)**
Apply organizational policies for executing appropriate agreements such as, non-disclosure, quality, and change notification agreements.

- 2. Intellectual Property (Apply)**
Apply procedures for protecting the intellectual property of an organization and its suppliers.

- 3. Illegal Activity (Apply)**
Understand and interpret policies for reporting observations and deviations that could be perceived as illegal activity.