

# **CERTIFIED QUALITY AUDITOR BODY OF KNOWLEDGE**

The topics in this new BOK include additional detail in the form of subtext explanations and cognitive level. These details will be used by the Exam Development Committee as guidelines for writing test questions, and are designed to help candidates prepare for the exam by identifying specific content within each topic that may be tested. The subtext is not intended to limit the subject-matter or be all-inclusive of what might be covered in an exam, but is intended to clarify how the topics relate to a Quality Auditor's role. The descriptor in parentheses at the end of each entry refers to the maximum cognitive level at which the topic will be tested. A more comprehensive description of cognitive levels is provided at the end of this document.

## **FORMAT CHANGE FOR CQA EXAM**

Examinations based on the 2004 BOK will contain a number of case studies. Each case study will include a brief scenario outlining critical details about an audit situation. In addition, each case study will be supported by related audit documents. Approximately 15-20% (25-30 questions) of the test will be devoted to these case studies. Although the questions related to these cases will use the same four-choice answer format as the rest of the test, the use of scenario details and sample documents will allow the candidates to apply their critical thinking skills in evaluating realistic situations and accompanying documents, communiqués, etc. Additional time will be needed to process all elements of the case studies, and, therefore, the length of examination time will be increased from four hours to five hours.

### **I. AUDITING FUNDAMENTALS (30 QUESTIONS)**

#### **A. Basic terms and concepts**

Define and differentiate basic quality- and audit-related terms, such as quality, quality assurance, quality control, evidence, finding, observation, noncompliance, and nonconformance. (Apply)

[NOTE: The application of these audit terms during the performance of an audit is covered in greater detail in II. B.]

#### **B. Purpose of audits**

Describe and examine how audits are used to assess organizational effectiveness, system efficiency, process effectiveness, business performance, risk management, and conformance to requirements. (Analyze)

#### **C. Types of quality audits**

Define and differentiate various audit types, such as product, process, system, management, compliance, first-party, second-party, third-party, internal, external, desk, department, and function. (Analyze)

#### **D. Audit criteria**

Define and distinguish between various audit criteria, such as standards, contracts, specifications, policies, and quality awards. (Analyze)

#### **E. Roles and responsibilities of audit participants**

Define and describe the functions and responsibilities of various audit participants, including audit team members, lead auditor, client, auditee, etc. (Apply)

#### **F. Ethical, legal, and professional Issues**

##### **1. Audit credibility**

Identify and apply ethical factors that influence audit credibility, such as auditor independence, objectivity, and qualifications. (Apply)

##### **2. Liability issues**

Identify potential legal and financial ramifications of improper auditor actions, such as carelessness and negligence, in various situations, and anticipate the effect that certain audit results can have on an auditee's liability. (Apply)

##### **3. Professional conduct and responsibilities**

Define and apply the concepts of due diligence and due care, with respect to confidentiality, conflict of interest, the discovery of illegal activities or unsafe conditions. (Apply)

## **II. AUDIT PROCESS (60 QUESTIONS)**

### **A. Audit preparation and planning**

#### **1. Elements of the audit planning process**

Identify and implement steps in audit preparation and planning, such as verifying audit authority, determining the purpose, scope, type, requirements to audit against, and identifying the resources necessary, including the size and number of audit teams. (Evaluate)

#### **2. Auditor selection**

Identify and examine various auditor selection criteria, such as education, experience, industry background, and subject-matter expertise. (Analyze)

#### **3. Audit-related documentation**

Identify the sources of pre-audit information and examine audit-related documentation, such as reference materials and prior audits. (Analyze)

#### **4. Logistics**

Identify and organize various audit-related logistics, such as travel, security considerations, and escorts. (Analyze)

#### **5. Auditing tools**

Select, prepare, and use checklists, log sheets, sampling plans, and procedural guidelines in various audit situations. (Create)

[NOTE: Checklists as working papers are covered in II. B. 3]

**6. Auditing strategies**

Identify and use various tactical methods for conducting an audit, such as forward and backward tracing and discovery. (Apply)

**B. Audit performance**

**1. Opening meeting**

Describe its purpose, scope, and elements and conduct an opening meeting. (Apply)

**2. Data collection and analysis**

Select and apply various data collection methods, such as interviewing people, observing work activities, taking physical measurements, and examining paper and electronic documents; perform analysis. (Create)

**3. Working papers**

Identify types of working papers, such as checklists, auditor notes, and attendance rosters, and determine their importance in providing evidence for an audit trail. (Evaluate) [NOTE: Checklists as auditing tools are covered in II. A. 5.]

**4. Objective evidence**

Identify and differentiate various characteristics of objective evidence, such as observed, measured, verified, and documented. (Analyze)  
[NOTE: The definition of evidence is covered in I. A.]

**5. Observations**

Evaluate the significance of observations in terms of positive, negative, chronic, isolated, and systemic. (Evaluate)  
[NOTE: The definition of observation is covered in I. A.]

**6. Nonconformances**

Classify nonconformances in terms of significance, severity, frequency, and level of risk. (Evaluate)  
[NOTE: The definition of nonconformance is covered in I. A.]

**7. Audit process management**

Define and apply elements of managing an audit, including coordinating team activities, reallocating resources, adjusting audit plan, and communicating with the auditee. (Analyze)

**8. Exit meeting**

Describe its purpose, scope, and elements, and conduct an exit meeting, including determining post-audit activities and who is responsible for performing them. (Apply)

**C. Audit reporting**

**1. Basic steps**

Define, plan, and implement the steps in generating an audit report, including reviewing and finalizing results, organizing and summarizing details, obtaining necessary approvals, and distributing the report. (Create)

**2. Effective audit reports**

Identify what makes an audit report effective, and develop and evaluate various components, such as executive summaries, prioritized data, graphic presentation, and the impact of conclusions. (Create)

**3. Records retention**

Identify and apply record retention requirements, such as type of documents, length of time, and storage considerations, for various audits. (Apply)

**D. Audit follow-up and closure**

**1. Elements of the corrective and preventive action processes**

Identify and apply the elements of these processes, including problem identification, assignment of responsibility, root cause analysis, and recurrence prevention. (Apply)

**2. Review of corrective action plan**

Use various criteria to evaluate the acceptability of corrective action plans, and identify and apply strategies for negotiating changes to unacceptable plans. (Evaluate)

**3. Verification of corrective action**

Use various methods to verify and evaluate the adequacy of corrective actions taken, such as re-examining procedures, observing revised processes, and conducting follow-up audits. (Evaluate)

**4. Follow up on ineffective corrective action**

Identify and develop strategies to use when corrective actions are not implemented or are not effective, such as communicating to the next level of management, re-issuing the corrective action, and re-auditing. (Create)

**5. Audit closure**

Identify and apply various elements of, and criteria for, audit closure. (Evaluate)

**III. AUDITOR COMPETENCIES (23 QUESTIONS)**

**A. Auditor characteristics**

Identify characteristics that make auditors effective, such as interpersonal skills, problem-solving skills, close attention to detail, cultural sensitivity, ability to work independently and in a group or on a team. (Apply)

**B. Resource management**

Identify and apply techniques for scheduling people, events, logistics, and audit-related activities. (Apply)

**C. Conflict resolution**

Identify typical conflict situations (disagreements, auditee delaying tactics, and interruptions) and determine the techniques for resolving them, such as negotiation and cool-down periods. (Analyze)

#### **D. Communication techniques**

Select and use written and oral communication techniques in various applications, such as technical reports, active listening, empathy, and paraphrasing. (Analyze)

#### **E. Interviewing techniques**

Define and apply appropriate interviewing techniques (e.g., when to use open-ended and closed question types, determining the significance of pauses and their length, and when and how to prompt a response), based on various factors, such as when supervisors are present, when interviewing a group of workers, and when using a translator. (Apply)

#### **F. Team membership, leadership, and facilitation**

Define and use various techniques to support team-building efforts and to help maintain group focus, both as a participant and as a team leader. Recognize and apply the classic stages of team development (forming, storming, norming, and performing). Identify various team member roles and apply coaching, guidance, and other facilitation techniques necessary to effective team functioning. (Analyze)

#### **G. Presentation techniques**

Define and apply various tools and techniques such as graphs, charts, diagrams, and multimedia aids for written and oral presentations made at opening, closing, and other meetings. (Apply)

#### **H. Verification and validation**

Define, distinguish between, and apply various methods of verifying and validating processes. (Analyze)

### **IV. AUDIT PROGRAM AND BUSINESS APPLICATIONS (15 QUESTIONS)**

#### **A. Audit program management**

Explain the elements of audit program management, such as the development of policies and procedures, strategic alignment, resource management, the evaluation of program effectiveness, and auditor training. (Apply)

#### **B. Business applications**

##### **1. Change control**

Identify the principles of change control systems and configuration management as used in various hardware, software, product, process, and service applications. (Understand)

##### **2. Risk management**

Identify risk management concepts and strategies, such as identifying risk tradeoffs, and mitigation. (Understand)

##### **3. Interrelationships between business processes**

Understand major business processes (sales, marketing, engineering, etc.) and their interrelationships. (Understand)

4. Senior management and the audit function  
Identify and explain management's role in creating and supporting the audit function. (Understand)
5. Common elements of audits  
Recognize the elements that quality audits have in common with other types of audits, such as environmental, safety, and financial. (Understand)
6. Auditing as a management tool  
Apply audits in support of various business objectives, such as continuous improvement, supplier management, customer satisfaction, and best practices. (Analyze)
7. Emerging roles of the auditor  
Recognize new roles and responsibilities for auditors, including their role as process consultants and business analysts. (Understand)

## V. QUALITY TOOLS AND TECHNIQUES (22 QUESTIONS)

### A. Fundamental quality control tools

Identify, interpret, and apply Pareto charts, cause and effect diagrams, flowcharts, control charts, check sheets, scatter diagrams, and histograms. (Analyze)

### B. Quality improvement tools

Identify, interpret, and apply problem-solving tools, such as root cause analysis, the six sigma model (DMAIC), lean tools, Plan-Do-Check-Act (PDCA), and corrective and preventive action (CAPA) methods. (Apply)

### C. Descriptive statistics

Identify, interpret, and use various measures of central tendency (mean, median, and mode), and dispersion, such as standard deviation and frequency distribution. (Apply)

### D. Sampling methods

Identify, interpret, and use various sampling methods, such as acceptance, random, and stratified, and define related concepts (e.g., consumer and producer risk, and confidence level). (Apply)

### E. Process capability

Identify and interpret various process capability indices, such as  $C_p$  and  $C_{pk}$ . (Understand)

### F. Qualitative and quantitative analysis

Describe and distinguish between qualitative and quantitative analyses, and attributes and variables data. (Analyze)

### G. Cost of quality

Identify the basic cost of quality (COQ) principles, and describe the four COQ categories: prevention, appraisal, internal failure, and external failure. (Understand)

## **SIX LEVELS OF COGNITION BASED ON BLOOM'S TAXONOMY (REVISED)**

In addition to **content** specifics, the subtext detail also indicates the intended **complexity level** of the test questions for that topic. These levels are based on the Revised "Levels of Cognition" (from Bloom's Taxonomy, 2001) and are presented below in rank order, from least complex to most complex.

### **REMEMBER**

(Also commonly referred to as recognition, recall, or rote knowledge.) Be able to remember or recognize terminology, definitions, facts, ideas, materials, patterns, sequences, methodologies, principles, etc.

### **UNDERSTAND**

Be able to read and understand descriptions, communications, reports, tables, diagrams, directions, regulations, etc.

### **APPLY**

Be able to apply ideas, procedures, methods, formulas, principles, theories, etc., in job-related situations.

### **ANALYZE**

Be able to break down information into its constituent parts and recognize the parts' relationship to one another and how they are organized; identify sublevel factors or salient data from a complex scenario.

### **EVALUATE**

Be able to make judgments regarding the value of proposed ideas, solutions, methodologies, etc., by using appropriate criteria or standards to estimate accuracy, effectiveness, economic benefits, etc.

### **CREATE**

Be able to put parts or elements together in such a way as to show a pattern or structure not clearly there before; able to identify which data or information from a complex set is appropriate to examine further or from which supported conclusions can be drawn.