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ASQ CMQ-OE

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QUESTION NO: 1

The following, chart was developed by a team to conduct a SWOT analysis.



The S-O quadrant indicates the area where

A. barriers need to be overcome in order lo pursue opportunities

B. business factors can result in a loss of competitive advantage

C. the company can develop a competitive advantage

D. the company can use its strengths to reduce the impact or" external threats

ANSWER: C

Explanation:

The company can develop a competitive advantage is correct because the S-O portion of a SWOT matrix connects internal strengths with external opportunities. This is the most favorable strategic position: the organization has distinctive capabilities, resources, knowledge, processes, brand assets, or other strengths that it can deliberately apply to an attractive condition in its environment. The resulting strategy is commonly described as using strengths to exploit, capture, or capitalize on opportunities.

For example, an organization with an established reputation for reliable service and a highly capable workforce may use those strengths to enter a growing customer segment. Similarly, strong process capability or proprietary expertise can be used to introduce an offering that meets an emerging market need more effectively than competitors. In each case, the strategic value comes from matching what the organization does particularly well with a condition that offers potential growth, differentiation, or improved customer value. That alignment can create or reinforce competitive advantage because it is based on capabilities the organization already possesses and can deploy purposefully. ASQ describes SWOT as a tool for identifying strengths, weaknesses, opportunities, and threats to support strategic planning and decision-making. See ASQ's SWOT Analysis resource and ASQ's Strategic Planning resource.

QUESTION NO: 2

Which of the following phrases is used in describing the theory of constraints?

A. Empowered employees

B. Root cause analysis

C. Systems as chains

D. Statistical process control

ANSWER: C

Explanation:

Systems as chains is the phrase used to describe the theory of constraints because TOC views an organization, process, or value stream as an interconnected chain of dependent activities. The output of the entire chain is governed by its limiting link—the constraint. Just as increasing the strength of links that are not the weakest does not increase the chain's overall strength, improving process steps that are not the current constraint will not necessarily increase total system throughput. This systems perspective directs managers to identify the constraint, obtain the most value from it, align other activities to support it, increase its capability when appropriate, and then reassess the system because the constraint may shift. The chain metaphor is therefore fundamental to TOC's focus on flow, throughput, and organization-wide performance rather than isolated local efficiencies. The Theory of Constraints International Certification Organization describes TOC as a systems-management philosophy focused on identifying and managing constraints: TOCICO—Theory of Constraints. A concise overview of the five focusing steps and the constraint-based improvement cycle is also provided by Lean Production—Theory of Constraints.

QUESTION NO: 3

A leader derives her or his leadership role from:

A. Her or his experience and training

B. Acceptance of her or his direction by the followers

C. Top management

D. Acceptance by the external customers and the public

ANSWER: B

Explanation:

Acceptance of her or his direction by the followers is correct because leadership is fundamentally a relationship of influence in which people willingly recognize, support, and act on an individual's direction toward a shared purpose. A formal position, technical experience, training, or an appointment may provide authority, expertise, and opportunities to lead, but they do not by themselves establish leadership. Leadership becomes real when followers accept the leader's influence and commit to the work, goals, and direction being proposed. This distinction is especially important in quality and organizational excellence: leaders build alignment by communicating purpose, creating trust, engaging people, and enabling them to contribute to improvement. ASQ describes leadership as creating unity of purpose and direction for the organization, while quality-management guidance emphasizes that leaders engage people and establish conditions in which organizational objectives can be achieved. These principles depend on followers' understanding and acceptance, rather than merely on the leader's title or credentials. In practice, acceptance is earned through credible behavior, competence, clear communication, and consistent support for the team's mission and values. See ASQ's overview of leadership and the ISO explanation of the quality management principles.

QUESTION NO: 4

A company needs to upgrade its inspection process which has not been changed in several years. The first action the quality manager should take is to

A company needs to upgrade its inspection process which has not been changed in several years. The first action the quality manager should take is to

A. hire a consultant to develop an appropriate problem-solving technique

B. train a team on benchmarking and have the team conduct a benchmarking assessment

C. automate the process using the latest technology being developed in academia and in other industries

D. conduct a process analysis using resources from within the company

ANSWER: D

Explanation:

conduct a process analysis using resources from within the company is the appropriate first action because improvement should begin with understanding the current state of the process before selecting or implementing a solution. A process analysis establishes how inspection work is actually performed, including inputs, activities, decision points, outputs, responsibilities, measures, delays, rework, and sources of variation. It also identifies the process's customers and requirements, allowing the manager to distinguish genuine performance gaps from assumptions about what needs upgrading.

Employees who perform, support, and receive the outputs of inspection have essential knowledge of current methods, constraints, historical issues, and practical improvement opportunities. Their participation provides reliable baseline information and builds ownership of subsequent changes. The quality manager can use tools such as process maps, flowcharts, data collection, and review of inspection results to define the problem and prioritize improvements based on evidence. This follows the quality-management principle of making decisions using analyzed information and evaluating processes before acting on improvement ideas. ASQ describes process analysis as examining process steps and relationships to understand and improve performance; see ASQ Process Analysis. ISO's quality-management guidance likewise emphasizes understanding organizational processes and using performance evaluation as a basis for improvement; see ISO 9001 Quality Management.

QUESTION NO: 5

Rank in order, from first to last, the following steps for creating a house of quality diagram.

1. Conduct an evaluation of competing products

2. Identify technical requirements

3. Identify customer requirements

4. Relate customer requirements to technical requirements

5. Determine which technical requirements to employ

A. 1, 2, 5, 3, 4

B. 2, 3, 5, 1, 4

C. 3, 1, 2, 4, 5

D. 3, 2, 4, 1, 5

ANSWER: C

Explanation:

The correct sequence is **3, 1, 2, 4, 5**. A house of quality begins by identifying customer requirements—the "voice of the customer"—because these needs define the outcomes that the product or service must deliver. Once those requirements are known, evaluating competing products provides a customer-focused benchmark. The team can see how well current alternatives satisfy the identified needs and use that information to establish priorities and improvement opportunities.

The next step is to identify technical requirements: the measurable engineering, process, or service characteristics that the organization can control. The house of quality then maps the relationships between each customer requirement and the relevant technical requirements. This relationship matrix translates customer language into actionable technical direction and reveals which technical characteristics have the greatest effect on customer value. Finally, the organization determines which technical requirements to employ by considering the relationship results, customer priorities, competitive information, feasibility, and tradeoffs. This ordering reflects quality function deployment's purpose of systematically converting customer needs into prioritized design requirements. See ASQ's overview of quality function deployment and the House of Quality process for further background.

QUESTION NO: 6

Effective actions taken to improve products and service provided by a sports clothing manufacturer to the distributors of their athletic products could include:

I. Conducting a survey of all end users

II. Collecting and analyzing data on what type and quality of the manufacturer ’s products appear to be in demand based on shipments in the past twelve months.

III. Identifying patterns of sales by product, by geographic location, and by size of distributor.

IV. Mutually identifying targets of opportunity beneficial to both manufacturer and distributors, setting improvement objectives, and planning the improvements

A. I and IV only

B. II and III only

C. I, II, III, and IV

D. II, III, and IV only

E. Conducting a survey of all end users
II. Collecting and analyzing data on what type and quality of the manufacturer ’s products appear to be in demand based on shipments in the past twelve months.
III. Identifying patterns of sales by product, by geographic location, and by size of distributor.
IV. Mutually identifying targets of opportunity beneficial to both manufacturer and distributors, setting improvement objectives, and planning the improvements

ANSWER: D

Explanation:

II, III, and IV only is correct because it applies a fact-based, customer-focused improvement approach to the manufacturer’s direct customer relationship with its distributors. Collecting and analyzing shipment data provides evidence about product demand and the quality characteristics valued in the distribution channel. This information supports decisions based on actual market performance rather than assumptions.

Identifying sales patterns by product, region, and distributor size further segments the data into actionable knowledge. The manufacturer can recognize meaningful differences among distribution channels, prioritize improvement resources, and tailor inventory, product, and service support to the needs of particular distributor groups.

Mutually identifying opportunities with distributors, establishing objectives, and planning improvements turns analysis into a managed improvement effort. It reflects the quality-management practices of customer focus, collaborative supplier/customer relationships, measurable objectives, and continual improvement. Because distributors receive the manufacturer’s products and services directly, joint planning with them ensures that improvement priorities address their operational and business needs while also supporting the manufacturer’s results. ASQ describes the CMQ/OE role as leading and facilitating process improvement and customer-focused quality efforts; see ASQ’s CMQ/OE certification overview. The customer-focus and continual-improvement principles are also consistent with ISO’s description of ISO 9001 quality management at ISO 9001—Quality management.

QUESTION NO: 7

An analysis of a company’s strengths, weakness, opportunities and threats (SWOT) is designed to be used to

A. identify decisions that affect the entire organization

B. define complex projects that are not well scoped

C. optimize internal processes

D. plan strategic initiatives

ANSWER: D

Explanation:

SWOT analysis is designed to support **plan strategic initiatives**. It is a structured strategic-planning technique that brings together an organization's internal strengths and weaknesses with external opportunities and threats. This combined view helps leaders understand the organization's current strategic position and identify initiatives that use distinctive capabilities, address important gaps, capitalize on changes in the marketplace, and manage external risks. The purpose is not merely to compile a list of observations; it is to convert an assessment of the business environment into priorities, objectives, and action plans that align with the organization's mission and longer-term direction.

For a manager of quality and organizational excellence, SWOT is particularly useful during strategic planning, deployment of organizational goals, and review of changing stakeholder or market conditions. For example, leadership can use the results to select improvement investments, establish strategic quality objectives, or decide where organizational resources will have the greatest strategic impact. ASQ identifies SWOT as a strategic-planning tool, and the U.S. Small Business Administration similarly describes it as an assessment that supports planning and decision-making. See ASQ Strategic Planning and the U.S. Small Business Administration guide to market research and competitive analysis.

QUESTION NO: 8

Which of these circumstances might reasonably prompt a reevaluation of an organization's policies and strategic objectives?
I. The retirement of the CEO

II. A merger with another company

III. Divestiture of a major division

IV. Obsolescence of a major technology

A. I, II, III, and IV

B. II, III, and IV only

C. I, II, and IV only

D. II and III only

ANSWER: A

Explanation:

I, II, III, and IV is correct because each circumstance can materially alter the organization's context, capabilities, risks, stakeholders, or competitive position—conditions that leadership should consider when reviewing policy and strategic direction. The retirement of a chief executive can introduce a new leadership philosophy, governance approach, risk appetite, and set of strategic priorities. A merger can change the organization's markets, culture, resource base, operating model, and stakeholder obligations. Divesting a major division may significantly change the organization's scope, financial profile, core competencies, customer portfolio, and strategic priorities. Obsolescence of a major technology can affect product viability, process capability, investment needs, competitive advantage, and the organization's ability to meet customer and market requirements.

Strategic planning is not a one-time activity; it requires periodic reassessment when significant internal or external changes occur. ASQ describes strategic planning as the process by which an organization establishes direction and determines how to allocate resources to pursue that direction. Major organizational, leadership, portfolio, and technological changes are therefore reasonable triggers for reevaluating policies and objectives. ISO guidance likewise emphasizes understanding the organization's context and monitoring changes that can affect its quality management system and intended results. See ASQ's strategic planning resource and ISO 9001:2015 overview.

QUESTION NO: 9

Quality managers use a variety of techniques to motivate their teams. One motivational theory is

A. negotiation theory

B. expectancy theory

C. theory of change

D. conflict resolution

ANSWER: B

Explanation:

Expectancy theory is a recognized work-motivation theory associated with Victor Vroom and is directly applicable to a quality manager's responsibility for leading and motivating people. Its central premise is that motivation increases when employees see a credible connection between their effort and successful performance, between performance and an outcome, and between that outcome and something they personally value. In a quality setting, a manager can apply expectancy theory by clarifying quality objectives and performance expectations, ensuring employees have the training, authority, tools, and resources needed to achieve them, and linking demonstrated performance to meaningful recognition or rewards. This approach is especially useful when implementing improvement work because it makes the individual contribution to team and organizational results visible and achievable. The CMQ/OE body of knowledge includes leadership, motivation, team development, and organizational dynamics as essential managerial competencies. Expectancy theory provides a practical framework for aligning those competencies with employee effort and quality-performance goals. For an overview of the CMQ/OE certification scope, see ASQ's Certified Manager of Quality/Organizational Excellence page. A clear discussion of expectancy theory and its effort–performance–outcome logic is available from OpenStax Organizational Behavior.

QUESTION NO: 10

A risk register for a strategic initiative should normally include which of the following?

A. A description of the risk and its potential consequences.

B. An assessment of likelihood and impact.

C. An assigned risk owner.

D. Planned response actions and review status.

E. The organization's complete annual operating budget.

ANSWER: A B C D

Explanation:

A description of the risk and its potential consequences, **an assessment of likelihood and impact**, **an assigned risk owner**, and **planned response actions and review status** are correct. A risk register is a working management tool that records identified risks, evaluates their significance, assigns accountability, and tracks actions intended to treat or monitor them.

Risk information should be updated as circumstances, assumptions, and controls change. The register is not a substitute for the organization's financial budget, although risk responses may require resources that must be considered in planning. See ISO 31000 risk management guidance.

QUESTION NO: 11

Which of the following training methods requires the greatest amount of monitoring in order to control variation?

A. Computer-based training

B. On-the-job training

C. Classroom lecture

D. Simulator training

ANSWER: B

Explanation:

On-the-job training requires the greatest amount of monitoring to control variation because learning occurs in the live work environment and is strongly influenced by local conditions. The content, sequence, pace, demonstrations, coaching, feedback, and practice opportunities can differ according to the person providing instruction, the equipment or materials available, production demands, and the specific work encountered during the training period. Without active oversight, two employees assigned the same role may receive materially different instruction and demonstrate different levels of competence.

A quality-focused organization should therefore define the required job competencies, use standardized work instructions and training checklists, qualify trainers, observe performance, document completion, and verify that the trainee can perform the work consistently. Monitoring must also detect drift from the approved method and ensure that lessons learned or process changes are incorporated into the training. This reflects the quality-management emphasis on ensuring competence and evaluating the effectiveness of actions taken to acquire competence. ISO's guidance on competence management and people development supports managing training as a controlled process, while ASQ identifies training as a core quality resource. See ISO 10015:2019—Guidelines for competence management and people development and ASQ Training resources.

QUESTION NO: 12

Rank in older, from firs! to last, the following steps to crediting a new service organization.

1. Implement new tactics at the front line

2. Clarify the service strategy

3. Evaluate the present level of service quality

4. Educate the organisation

A. 2, 1, 3, 4

B. 2, 4, 1, 3

C. 3, 2, 4, 1

D. 3, 4, 1, 2

ANSWER: C

Explanation:

3, 2, 4, 1 is the appropriate sequence because establishing or transforming a service organization should begin with an accurate assessment of current service quality. This baseline identifies customers' experiences, current performance gaps, process capabilities, and the priorities that the service strategy must address. A strategy can then be clarified using evidence rather than assumptions, aligning service objectives with customer needs and organizational goals.

Once the strategy is defined, the organization must be educated so leaders, managers, and frontline personnel understand the desired service model, their responsibilities, and the practices needed to support it. Education creates the capability and shared commitment required for consistent execution. New tactics should then be implemented at the front line, where customers experience the service directly. This ordering reflects the quality-management discipline of assessing the current state, planning improvements, preparing people to execute the plan, and deploying operational changes. ASQ describes strategic planning as a structured process for setting direction and deploying organizational objectives, while customer-satisfaction measurement supplies essential information about current customer perceptions and improvement needs. See ASQ's strategic planning resource and ASQ's customer satisfaction resource.

QUESTION NO: 13

A project sponsor can contribute to project success by which of the following actions?

A. Removing organizational barriers beyond the team's authority

B. Securing needed resources

C. Reinforcing the project's strategic purpose

D. Directing the team's daily task assignments

ANSWER: A B C

Explanation:

Removing organizational barriers beyond the team's authority, **securing needed resources**, and **reinforcing the project's strategic purpose** are key sponsor responsibilities. The sponsor champions the project, supports its alignment with organizational priorities, and helps resolve issues that the project manager or team cannot address independently.

The sponsor should not replace the project manager in directing daily project work. Clear separation of sponsor and project-manager roles supports sound governance and accountability. See the Project Management Institute's discussion of the project sponsor role and responsibilities.

QUESTION NO: 14

Which of the following steps should a company lake to improve its customer satisfaction levels?

A. Increase sales or marketing visits to customers

B. Establish a process improvement team in manufacturing

C. Collect data to determine which areas need attention

D. Design policies to improve customer satisfaction

ANSWER: C D

Explanation:

“Collect data to determine which areas need attention” is correct because improving customer satisfaction begins with understanding customers’ perceptions, requirements, and pain points rather than relying on internal assumptions. Structured feedback mechanisms—such as surveys, interviews, complaint analysis, service data, and customer-retention measures—provide evidence about the experiences that most need improvement. This information enables leaders to identify priorities, establish meaningful improvement objectives, and evaluate whether changes improve customer perceptions over time.

“Design policies to improve customer satisfaction” is also correct because customer focus must be embedded in the organization’s management system and everyday operations. Customer-oriented policies establish the expectations, responsibilities, resources, and consistent practices needed to translate feedback into dependable product and service delivery. They support a systematic approach in which customer information informs planning, process management, corrective action, and continual improvement. ISO 9001 specifically requires organizations to monitor customers’ perceptions of the degree to which their needs and expectations have been fulfilled. ASQ likewise identifies customer satisfaction as a measure of how well products and services meet or surpass customer expectations. See ISO 9001:2015 and ASQ’s customer satisfaction resource.

QUESTION NO: 15

In order to manage the needs of multiple customers, the management group should first:

A. Develop custom-tailored, independent systems to meet the needs of each customer

B. Develop and perform a needs assessment for each customer

C. Develop standardized processes that will treat all customers the same

D. Develop cost-effective processes that meet the needs of the majority of customers

ANSWER: B

Explanation:

“Develop and perform a needs assessment for each customer” is correct because customer focus begins by identifying, understanding, and evaluating customer requirements before designing the processes, services, resource allocations, or delivery methods intended to fulfill them. A needs assessment gives management factual information about each customer’s stated requirements, implicit expectations, priorities, constraints, and measures of satisfaction. It also enables the organization to distinguish common needs that may be served through shared processes from distinctive needs that require variation, segmentation, or tailored service levels.

This assessment-based approach supports sound quality management because decisions are made using customer data rather than assumptions about what customers value. Management can then translate the findings into measurable requirements, establish priorities, deploy appropriate processes, and monitor whether those needs continue to be met as customer circumstances change. This is consistent with the customer-focus principle in quality management, which emphasizes understanding current and future customer needs and striving to exceed expectations. ASQ’s customer-satisfaction resources likewise emphasize gathering and using customer feedback to understand requirements and improve organizational performance. See ISO’s overview of ISO 9001 quality management and ASQ’s customer satisfaction resource.

QUESTION NO: 16

A control chart can be described as a:

A. Run chart with control limits

B. Chart showing in-control processes only

C. Histogram

D. Pareto chart

ANSWER: A

Explanation:

A control chart can accurately be described as a **Run chart with control limits**. Like a run chart, it plots process data in chronological order, making it possible to see how a process behaves over time. What makes it a control chart is the addition of a center line representing the process average or target and statistically derived upper and lower control limits. These limits represent the expected range of variation when only common causes are affecting a stable process.

Control charts are a foundational statistical process control tool because they help managers and process owners evaluate whether observed variation is routine or whether a signal indicates a potential special cause that merits investigation. This supports evidence-based decisions: action can be directed at unusual process behavior rather than taken in response to every normal fluctuation. Control charts may be used with variable or attribute data, provided the chart type and limits are appropriate for the data and sampling method.

ASQ describes control charts as graphs used to study how a process changes over time and identifies their role in distinguishing common-cause from special-cause variation. See ASQ’s Control Chart resource and the NIST Engineering Statistics Handbook overview of control charts.

QUESTION NO: 17

Which of the following elements describes the combination of the severity and probability of occurrence of harm?

A. Failure mode

B. Hazard

C. Risk

D. Detection

ANSWER: C

Explanation:

Risk is the correct term because it expresses both the potential seriousness of harm and the likelihood that the harm will occur. This is a foundational concept in quality management, safety management, and risk-based thinking: an outcome with severe potential consequences can require attention even when it is relatively unlikely, while a more frequent outcome may also warrant action because of its accumulated effect. Evaluating risk therefore requires consideration of these two dimensions together, allowing leaders to prioritize controls, allocate resources, and decide whether the residual level of exposure is acceptable. ISO's risk-management vocabulary defines risk as the "effect of uncertainty on objectives," while ISO 31000 guidance explains that risk analysis considers consequences and likelihood. In safety-oriented applications, this is commonly articulated specifically as the combination of the probability of occurrence of harm and the severity of that harm. This framing supports consistent, evidence-based decisions about prevention, mitigation, monitoring, and contingency planning across an organization. See ISO 31000 risk management and the ISO Guide 73 risk-management vocabulary.

QUESTION NO: 18

A well-liked and highly regarded member of the inspection staff is reluctant to formally reject products and write failure reports, for fear of alienating coworkers. To motivate the inspector to change this behavior, the quality manager must address the inspector's hierarchical needs at what level?

A. Physiological

B. Safety

C. Social

D. Ego

ANSWER: C

Explanation:

Social is correct because the inspector's reluctance arises from concern about acceptance, belonging, and continued positive relationships with coworkers. In Maslow's hierarchy of needs, social needs include affiliation, friendship, group membership, and the sense of being accepted by others. The inspector is not primarily expressing a concern about physical comfort or personal security; the stated barrier is the possible loss of peer approval after documenting nonconforming product and issuing failure reports.

An effective quality manager should therefore reinforce that objective inspection and accurate reporting are valued team behaviors, not personal attacks on production colleagues. The manager can clarify shared responsibility for product quality, support respectful cross-functional communication, and recognize the inspector's contribution to protecting customers and the organization. This approach helps preserve the individual's sense of belonging while making clear that conformity decisions must be based on requirements and evidence. Motivation concepts, including needs-based approaches, are relevant to the leadership and people-management knowledge expected of quality managers. ASQ identifies leadership and organizational excellence as core CMQ/OE subject areas; see ASQ's CMQ/OE certification information. A concise overview of Maslow's hierarchy, including belongingness needs, is available from Encyclopaedia Britannica.

QUESTION NO: 19

The concept of self-control by a production worker includes:

I. Knowing what the organizational goals are, what the job objective is, and the standard for performance.

II. Knowing what the actual performance is.

III. Notifying supervision whenever a nonconformance occurs.

IV. Having the means for changing the performance when it does not conform to the goals, objectives, and standard.

A. III only

B. I, II, and III only

C. I and II only

D. I, II, and IV only

E. Knowing what the organizational goals are, what the job objective is, and the standard for performance.
II. Knowing what the actual performance is.
III. Notifying supervision whenever a nonconformance occurs.
IV. Having the means for changing the performance when it does not conform to the goals, objectives, and standard.

ANSWER: D

Explanation:

I, II, and IV only is correct because self-control in quality management means that the person performing the work can manage the process against defined requirements. The worker must first know the intended result: the relevant organizational goals, the job objective, and the applicable performance standard. This supplies the basis for deciding whether the work is acceptable.

Self-control also requires knowing actual performance through observation, measurement, inspection, or process feedback. A standard without information about current results does not enable effective control. Finally, the worker needs the authority, capability, tools, or established method to adjust the process when actual performance differs from the required standard. Together, these elements form a closed control loop: establish the target, measure actual results, and take corrective action to restore conformance.

This interpretation is consistent with Juran's quality-control approach, which emphasizes evaluating actual performance against quality goals and acting on the difference. It also aligns with the CMQ/OE body of knowledge's focus on process management, measurement, and corrective action. See Juran's overview of quality management principles and ASQ CMQ/OE exam preparation resources.

QUESTION NO: 20

When Cp and Cpk valuers of a process are equal, the process average will be

A. equal to target

B. equal to the midpoint of the specification

C. not equal to target

D. not equal to the midpoint of the specification

ANSWER: B

Explanation:

equal to the midpoint of the specification is correct because the comparison between Cp and Cpk indicates whether a stable process is centered within its two-sided specification limits. Cp represents the process's potential capability based on total specification width relative to process spread: $Cp = (USL - LSL)/(6\sigma)$. Cpk accounts for both spread and the location of the process mean by using the smaller of the mean-to-upper-limit and mean-to-lower-limit capability values: $Cpk = \min[(USL - \mu)/(3\sigma), (\mu - LSL)/(3\sigma)]$. For Cpk to equal Cp, the process mean μ must be equally distant from the upper and lower specification limits. Therefore, $\mu = (USL + LSL)/2$, which is precisely the midpoint of the specification interval. This conclusion

assumes the usual bilateral specification limits and the standard definitions of Cp and Cpk used in process-capability analysis. A target value may or may not coincide with that midpoint; equality of Cp and Cpk specifically establishes centering relative to the specification limits. ASQ's capability-analysis resources describe Cp as potential capability and Cpk as capability adjusted for process centering; see ASQ Process Capability Analysis. The formulas and interpretation are also summarized by NIST/SEMATECH e-Handbook.

QUESTION NO: 21

The best way to reduce variation in products from a supplier is to

A. perform 100% incoming inspection

B. develop a training plan that will improve incoming inspection results

C. audit the supplier regularly and follow up on corrective action plans

D. help the supplier develop quality control processes

ANSWER: D

Explanation:

help the supplier develop quality control processes is the best answer because variation is reduced most effectively at its source: the supplier's process. Supplier development is a collaborative, prevention-oriented approach in which the customer and supplier use data to understand process capability, identify significant sources of variation, standardize work, establish effective controls, and verify that corrective and preventive improvements are sustained. This approach moves beyond merely determining whether individual delivered lots conform to requirements; it improves the consistency and predictability of the process that produces those lots.

Effective quality-control processes can include clearly defined specifications and acceptance criteria, measurement-system validation, process monitoring with appropriate control charts, error-proofing, documented reaction plans for out-of-control conditions, and ongoing capability improvement. Developing these controls jointly also improves communication about critical-to-quality characteristics and enables the supplier to take ownership of stable performance. ASQ describes supplier quality management as encompassing the processes used to ensure suppliers provide products and services that meet organizational requirements, while its continuous-improvement resources emphasize systematic, data-based improvement of processes. Those principles support working directly with the supplier to build capable, controlled production processes rather than relying primarily on downstream detection.

References: ASQ, Supplier Quality; ASQ, Continuous Improvement.

QUESTION NO: 22

Which of the following factors should be prioritized when assessing a supplier ' s risk to internal production processes?

A. Supplier ' s location relative to the company ' s headquarters

B. The supplier ' s history of on-time delivery and quality performance

C. The cost of the supplier ' s products compared to competitors

D. The supplier ' s level of compliance with industry standards and regulations

ANSWER: B

Explanation:

The supplier's history of on-time delivery and quality performance should be prioritized because it provides direct, objective evidence of the likelihood that the supplier will disrupt internal production. Production depends on inputs arriving when needed and meeting specified requirements. A pattern of late deliveries can create material shortages, schedule changes, idle capacity, expedited freight, and missed customer commitments. Similarly, a pattern of nonconforming supplied products or services can lead to incoming inspection failures, line stoppages, sorting, rework, scrap, and corrective-action activity.

Supplier performance data also supports a risk-based approach because it reflects demonstrated capability over time rather than relying solely on a one-time assessment. Useful measures include on-time delivery rate, lead-time consistency, incoming defect or rejection rates, responsiveness to corrective actions, and trends in performance. These measures help an organization determine the extent of supplier controls, monitoring, development, or contingency planning needed to protect process continuity and product quality.

ISO 9001 requires organizations to evaluate and monitor external providers using criteria that include their performance and their effect on the organization's ability to consistently meet requirements. ASQ's supplier-quality guidance likewise emphasizes supplier performance measures as a foundation for supplier management and improvement. See ISO 9001:2015 overview and ASQ Supplier Quality resources.

QUESTION NO: 23

Computer House Call Company has been in business for 15 years and was once considered a leader in the home computer diagnostic and repair industry. The company has relied on its highly trained and experienced technicians to maintain its reputation, however, the new quality manager has analyzed technician reports for the past three years and the analysis indicates a steady increase in the number of issues found during post-diagnostic analysis. During the same timeframe, accounting has reported an increase in requests for refunds or discounts from customers complaining about continued computer problems and inadequate computer performance. To resolve these issues, the quality manager proposes using a process improvement methodology. In an effort to gain management approval for a process improvement methodology, the quality manager should collect and present data on which of the following.

A. Hours of technician training

B. The number of customers served

C. Total manufacturing costs

D. Total cost of quality

ANSWER: D

Explanation:

Total cost of quality is the most appropriate information to present because it translates the operational evidence of defective or ineffective service into business terms that senior management can use for investment and prioritization decisions. Cost of quality includes the costs incurred to achieve conformance, such as prevention and appraisal activities, as well as the costs caused by poor quality, including internal and external failures. In this situation, repeat problems discovered after diagnostics and customer requests for refunds or discounts are tangible indicators of failure costs. Measuring those costs can quantify the financial impact of the current process and establish a baseline against which improvement results can be evaluated.

A cost-of-quality analysis also supports a sound improvement proposal by connecting process performance, customer dissatisfaction, and profitability. The quality manager can use the data to show where poor-quality costs occur, estimate the economic opportunity from reducing recurrence and rework, and justify resources for root-cause analysis, standard work, training, error prevention, or other process improvements. This framing makes clear that improvement is not merely a technical initiative; it is a means of reducing avoidable costs while improving customer outcomes. ASQ describes cost of quality as a way to measure the financial impact of quality-related activities and failures: ASQ Cost of Quality. Additional quality-management context is available from ASQ Quality Management System.

QUESTION NO: 24 - (SIMULATION)

Simulation training is becoming a more common tool in the workplace because:

ANSWER: See the explanation for the answer

Explanation:

Answer: Simulation training is becoming more common because it lets employees practice realistic job situations in a controlled, repeatable, low-risk environment.

It enables trainees to make mistakes, receive feedback, and repeat the activity without endangering people, equipment, customers, or production operations. This is especially valuable when actual on-the-job practice would be costly, disruptive, unsafe, or difficult to arrange.

QUESTION NO: 25

Which of the following factors should be considered in the interpretation of a histogram?

A. Shape

B. Stratification

C. Control limits

D. Correlation coefficient

ANSWER: A

Explanation:

Shape is a primary factor in interpreting a histogram because the bars visually summarize the distribution of measured data across intervals. A quality manager examines the overall pattern to determine whether the process output appears approximately symmetric, skewed in one direction, bimodal, truncated, or irregular. These visual characteristics can reveal meaningful information about process behavior, such as the presence of more than one underlying source of variation, a measurement or data-collection issue, or a process that is operating near a boundary.

Interpreting shape is not merely a matter of describing the graph; it helps guide further investigation. For example, an unexpectedly long tail may indicate occasional extreme values, while two distinct peaks can suggest that data from different machines, shifts, suppliers, or product families have been combined. The American Society for Quality identifies the shape of the data distribution as a key feature to evaluate when using a histogram, along with its central tendency, variation, and unusual observations. Accordingly, considering shape is essential to using a histogram as a practical tool for understanding process performance and variation. See ASQ's Histogram resource and NIST's histogram guidance.

QUESTION NO: 26

Which of the following are appropriate methods for obtaining information about customer requirements?

A. Conducting customer interviews.

B. Analyzing complaints and service requests.

C. Observing customers as they use a product or service.

D. Reviewing applicable customer contracts and specifications.

E. Reviewing the organization's quarterly earnings results.

ANSWER: A B C D

Explanation:

Conducting customer interviews, **analyzing complaints and service requests**, **observing customers as they use a product or service**, and **reviewing applicable customer contracts and specifications** are correct. Each method can provide useful information about expressed needs, actual use conditions, dissatisfaction, and requirements that must be incorporated into products, services, and processes.

Customer requirements should be gathered from multiple sources because customers may not always state all needs directly, particularly needs related to usability, reliability, timeliness, or ease of service. Financial results can indicate organizational performance but do not, by themselves, define customer requirements. See ASQ's voice of the customer resources.

QUESTION NO: 27

Rank in order, from first to last, the following steps in the supplier certification process.

1. Monitor performance

2. Develop criteria and process

3. Report results and award certification

4. Evaluate suppliers

A. 2, 4, 3, 1

B. 1, 3, 4

C. 4, 2, 1, 3

D. 4, 1, 2, 3

ANSWER: A

Explanation:

2, 4, 3, 1 is the proper order because a supplier-certification program must first establish the standards and method by which suppliers will be assessed. Developing the criteria and process defines the applicable requirements, evaluation methods, decision rules, responsibilities, and records needed for a consistent certification decision. Suppliers can then be evaluated against those established requirements using appropriate evidence, such as quality-system information, capability assessments, audits, delivery history, and performance data. After the evaluation is completed, the organization reports the results and awards certification to suppliers that meet the defined criteria. This formalizes the decision and communicates the supplier's approval or certification status. Monitoring performance follows certification because certification must remain supported by continuing evidence that the supplier continues to meet organizational requirements. Ongoing monitoring commonly uses measures such as defect rates, delivery performance, responsiveness, corrective-action effectiveness, and periodic reassessment. This sequence reflects the quality-management principle of controlling externally provided products and services through defined criteria, evaluation, approval, and continued performance oversight. ASQ's CMQ/OE certification scope includes supplier and supply-chain management responsibilities; see ASQ Certified Manager of Quality/Organizational Excellence. ISO's quality-management guidance likewise emphasizes control of externally provided processes, products, and services: ISO 9001:2015.

QUESTION NO: 28

A spirited disagreement has developed between two department heads at a staff meeting. As facilitator of the meeting, the quality manager should

A. adjourn the meeting early

B. acknowledge that a conflict exists and propose a joint problem-solving technique

C. ask the conflicting parties to leave the meeting and come to resolution

D. ask the conflicting parties to remain silent while the rest of the group discusses the issues

ANSWER: B

Explanation:

The quality manager should **acknowledge that a conflict exists and propose a joint problem-solving technique**. Effective facilitation does not require eliminating disagreement; it requires guiding participants so that differing views can be expressed constructively and converted into a decision process. Acknowledging the conflict makes the issue visible without assigning blame, helps establish a respectful tone, and keeps the meeting focused on the organizational problem rather than personal positions. A joint problem-solving approach then invites the department heads to clarify the issue, identify common interests, examine relevant facts, generate alternatives, and agree on actions or next steps. This is consistent with

collaborative conflict management, which seeks a mutually acceptable solution while preserving working relationships. In a quality-management setting, constructive resolution is especially important because cross-functional disagreements often reveal process interfaces, competing requirements, or risks that need to be addressed through data-based analysis. The facilitator should maintain psychological safety, set ground rules for respectful participation, and use a structured method to move the discussion toward shared understanding and action. ASQ identifies conflict resolution and facilitation as important management and leadership competencies; see ASQ Certified Manager of Quality/Organizational Excellence. Practical collaborative conflict-resolution guidance is also available from the Harvard Program on Negotiation.

QUESTION NO: 29

Which of the following factors should be considered in the interpretation of a histogram?

A. Shape

B. Stratification

C. Control limits

D. Correction coefficient

ANSWER: A

Explanation:

Shape is correct because a histogram is interpreted primarily by examining the distribution's visual pattern. The shape can indicate whether the data are approximately symmetric or skewed, whether there is one peak or multiple peaks, whether gaps or unusual clusters exist, and whether extreme observations may be present. These visible features help a quality manager understand process behavior and generate useful questions about possible sources of variation. For example, a strongly skewed distribution may suggest a process constraint or a non-normal data pattern, while two distinct peaks can indicate that data from different process conditions, machines, materials, shifts, or populations have been combined. Histogram interpretation also commonly considers the distribution's center and spread, but shape is the listed factor that directly describes the essential visual evidence provided by the chart. ASQ identifies histograms as a basic quality tool for displaying the distribution of data and assessing its pattern. The ASQ Histogram resource describes using a histogram to understand variation and distribution. The NIST Engineering Statistics Handbook likewise explains that histograms reveal distributional features such as location, spread, skewness, and unusual structure.

QUESTION NO: 30

To create a successful process improvement program, team members should be:

A. asked to contribute equally to the team's goals

B. advised that they will be accountable for any adverse outcomes

C. given the necessary authority to achieve results

D. from the same department or functional area

ANSWER: C

Explanation:

Team members should be given the necessary authority to achieve results. A process-improvement team is expected to analyze work, identify root causes, develop solutions, and implement or sponsor changes that improve performance. Those responsibilities require an appropriate level of empowerment: access to relevant information and resources, the ability to make decisions within defined boundaries, and a clear path to obtain approvals for changes beyond those boundaries. Without this authority, teams can identify worthwhile improvements but may be unable to remove barriers, revise procedures, coordinate across functions, or put validated solutions into practice.

This principle aligns with organizational-excellence practices in which leadership establishes a supportive environment, delegates suitable decision-making authority, and enables people to act on improvement opportunities. Effective empowerment is not unlimited autonomy; rather, it pairs defined roles, accountability, resources, and authority that are proportionate to the team's assigned objectives. Providing that authority helps convert improvement ideas into sustained process results and reinforces ownership of the improvement effort. ASQ's quality-management resources emphasize employee involvement and empowered teams as important elements of continuous improvement. See ASQ: Continuous Improvement and ASQ: Teams.

QUESTION NO: 31

Which of the following is an example of one-on-one instruction?

A. Self-directed

B. Classroom

C. On-the-job

D. Facilitation

ANSWER: C

Explanation:

On-the-job is an example of one-on-one instruction because it commonly involves an experienced employee, supervisor, or qualified trainer directly coaching an individual while that person performs the actual work. The instruction occurs in the employee's normal work setting and is tied to the specific equipment, processes, methods, safety requirements, and quality expectations of the role. This direct observation-and-practice approach enables the trainer to demonstrate a task, watch the learner perform it, provide immediate feedback, correct errors, and verify competence before the employee works independently. In a quality-management environment, this is especially valuable for process-specific activities such as conducting inspections, completing records, following work instructions, operating measurement equipment, or applying standard operating procedures. The U.S. Bureau of Labor Statistics describes on-the-job training as training provided while workers perform their job duties, often under the direction of a supervisor or experienced worker. The U.S. Office of Personnel Management also recognizes coaching as a developmental method that uses an individualized working relationship to build knowledge and skills. These characteristics make on-the-job instruction a clear one-to-one instructional method. See U.S. Bureau of Labor Statistics: training definitions and U.S. Office of Personnel Management: leadership development resources.

QUESTION NO: 32

Which of the following activities describes the team leader ' s role in a team-based organisation?

A. Negotiate additional organizational resources

B. Reinforcing behavioral changes by rewarding active team members

C. Ensuring that the team ' s decisions and plans are communicated outside the team

D. Providing training to team members

ANSWER: C

Explanation:

Ensuring that the team ' s decisions and plans are communicated outside the team is a central team-leader responsibility in a team-based organization. A team does not operate independently of the larger organization: its work must remain visible to sponsors, management, adjacent functions, customers, and other stakeholders affected by its outputs. The leader serves as an essential communication link, making sure that agreed actions, priorities, progress, needs, and results are conveyed beyond the team in a timely and understandable way. This outward-facing role also helps align the team's work with organizational objectives and enables stakeholders to provide needed direction, support, or coordination. Effective team

leadership therefore includes representing the team and maintaining communication channels across organizational boundaries, while still allowing members to participate actively in decisions and execution. ASQ's team-management body of knowledge includes communication, stakeholder interaction, and team leadership among the capabilities needed to support team performance. See the ASQ Certified Manager of Quality/Organizational Excellence certification overview and ASQ's Teams resource page for related quality-management and team concepts.

QUESTION NO: 33

In order for metrics to be useful in measuring quality projects and initiatives, the metrics must be

A. derived from a large population

B. presented in a way that allows actions to be taken

C. able to qualify all aspects of a process

D. used to establish acceptability limits for a product

ANSWER: B

Explanation:

Metrics are useful for quality projects and initiatives when they are presented in a way that allows actions to be taken. Measurement is not an end in itself: its management value comes from converting data into information that helps leaders and teams decide what to sustain, investigate, prioritize, correct, or improve. Actionable metrics make performance visible against a meaningful target, baseline, trend, or requirement, so that an owner can recognize a gap and respond appropriately. For example, a metric showing a rising corrective-action backlog, a missed project milestone, or deterioration in first-pass yield should support a clear decision about where to focus resources and what follow-up is needed.

This emphasis aligns with organizational-performance measurement practices: measures should support fact-based decision making and drive improvement. Effective dashboards and scorecards therefore communicate results clearly enough for the intended audience to identify needed action, monitor whether the action worked, and maintain accountability for outcomes. A metric may be statistically sound and still provide limited management value if it does not lead to an understandable decision or improvement response. ASQ describes performance measurement as a means of evaluating and improving organizational processes and results; see ASQ's performance measurement resource. Related guidance on selecting measures that support decisions and performance improvement is available from the Baldrige Performance Excellence Program.

QUESTION NO: 34

Effective succession planning practices include which of the following?

A. Identifying positions that are critical to organizational continuity.

B. Assessing potential successors against required competencies.

C. Providing development opportunities for potential successors.

D. Periodically reviewing succession plans as organizational needs change.

E. Guaranteeing promotion to every employee included in a succession pool.

ANSWER: A B C D

Explanation:

Identifying positions that are critical to organizational continuity, **assessing potential successors against required competencies**, **providing development opportunities for potential successors**, and **periodically reviewing succession plans as organizational needs change** are correct. Succession planning is a systematic process for maintaining leadership and technical capability in positions that are important to strategic and operational success.

Potential successors should receive development based on the capabilities required for future roles, not on an implied guarantee of promotion. Plans should also be reviewed because strategy, organization design, workforce availability, and role requirements can change. See the SHRM employee development toolkit.

QUESTION NO: 35

In any work environment, which of the following statements is true about human conflict?

A. It is normal and unavoidable.

B. It is eliminated by everyone having common goals.

C. It is an indication of a weak quality system.

D. It should be avoided to promote effective teamwork.

ANSWER: A

Explanation:

“It is normal and unavoidable.” is correct because conflict naturally occurs whenever people with different experiences, roles, priorities, perceptions, and communication styles work together. In an organizational-excellence context, the management issue is not whether conflict can be completely prevented, but whether it is recognized and handled constructively. A manager should create conditions in which people can raise differing views respectfully, examine the interests and facts behind those views, and work toward solutions aligned with organizational objectives. Constructively managed conflict can surface process weaknesses, reveal risks, improve decisions, encourage innovation, and clarify expectations. This is particularly relevant to quality management because continual improvement depends on candid identification and discussion of problems rather than suppressing disagreement. ASQ’s leadership and organizational-excellence resources emphasize the importance of communication, collaboration, and effective problem solving in managing organizational performance. The U.S. Office of Personnel Management likewise describes conflict management as a core competency involving constructive handling of disagreements and differences. See ASQ Leadership resources and OPM competency definitions.

QUESTION NO: 36

Which of the following actions indicates that an interviewer is using active listening techniques?

A. Capturing the respondent ' s tone by taking notes during the interview

B. Maintaining eye contact

C. Repeating the respondent ' s answers to confirm them

D. Helping the respondent find the right words

ANSWER: B C

Explanation:

Maintaining eye contact is an observable attending behavior that communicates attention, interest, and presence during an interview. Appropriate eye contact helps establish rapport and signals that the interviewer is engaged with both the respondent and the message being communicated. It should be natural and culturally appropriate rather than sustained in a way that causes discomfort, but it remains a common component of active listening.

Repeating the respondent’s answers to confirm them is also an active-listening technique when done by paraphrasing or summarizing the respondent’s meaning. Restating the key point and seeking confirmation lets the interviewer verify understanding before recording, interpreting, or acting on the information. This practice is particularly valuable in quality-management interviews, audits, and fact-finding because it improves accuracy, reduces misunderstandings, and gives the respondent an opportunity to clarify or expand on a response. ASQ’s quality-management body of knowledge emphasizes communication and interpersonal skills, while active-listening guidance commonly identifies attending behaviors and

reflection/paraphrasing as core practices. See ASQ Certified Manager of Quality/Organizational Excellence and Mind Tools: Active Listening.

QUESTION NO: 37

Which of the following communication skills is most important for a virtual team to have to avoid making incorrect assumptions?

A. Report writing

B. Computer usage

C. Active listening

D. Text messaging abbreviations

ANSWER: C

Explanation:

Active listening is the most important skill because it requires team members to concentrate on the message, check their understanding, and respond in a way that confirms shared meaning. In a virtual environment, participants have fewer contextual signals than they may have during in-person interactions. Differences in location, communication technology, culture, work schedules, and message format can make an untested interpretation especially risky. Active listening addresses that risk by encouraging people to ask focused clarifying questions, paraphrase key points, verify expectations, and confirm decisions, responsibilities, and deadlines before acting.

For a manager of quality or organizational excellence, this behavior supports reliable communication processes and reduces variation caused by ambiguous requirements or misunderstood handoffs. It also helps create psychological safety: team members are more likely to surface uncertainty early rather than silently proceed based on an assumption. ASQ describes teams as groups that work toward common goals and emphasizes the need for effective collaboration and communication in team performance. Active listening turns communication from merely transmitting information into a closed-loop process of mutual understanding, which is particularly important when the team works virtually. See ASQ's Teams resource and Mind Tools' overview of active listening.

QUESTION NO: 38

Effective management review of a quality management system should include which of the following?

A. Progress toward quality objectives

B. Customer feedback and performance trends

C. The status of actions from previous management reviews

D. Individual employee salary histories

ANSWER: A B C

Explanation:

Progress toward quality objectives, **customer feedback and performance trends**, and **the status of actions from previous management reviews** are appropriate inputs to management review. These items allow top management to determine whether the management system is achieving intended results, whether performance is improving, and whether prior decisions have been effectively completed.

Management review is a leadership activity for evaluating the continuing suitability, adequacy, effectiveness, and alignment of the quality management system. It is not limited to reviewing individual employee performance. ISO 9001 identifies management review inputs that include customer satisfaction and feedback, process performance, quality objectives, audit results, nonconformities, corrective actions, and follow-up actions from previous reviews. See ISO 9001:2015.

QUESTION NO: 39

Effective hoshin planning and deployment are supported by which of the following practices?

A. Using catchball to refine objectives and actions.

B. Linking initiatives to available resources.

C. Establishing measurable annual objectives.

D. Conducting periodic reviews of progress and changing conditions.

E. Restricting strategic objectives to senior management until implementation is complete.

ANSWER: A B C D

Explanation:

Using catchball to refine objectives and actions, **linking initiatives to available resources**, **establishing measurable annual objectives**, and **conducting periodic reviews of progress and changing conditions** are correct. Hoshin planning translates strategic priorities into coordinated objectives and action plans throughout the organization. Catchball promotes two-way communication so that objectives, capabilities, responsibilities, and needed resources can be discussed before commitments are finalized.

Deployment also requires measurable objectives, appropriate resources, and regular review. These practices allow management to identify barriers, make adjustments, and maintain alignment as organizational conditions change. See ASQ's Hoshin Kanri resource.

QUESTION NO: 40

Which of the following methods will help a company measure levels of customer-perceived quality?

A. Analyze field failure reports

B. Review capability tests that indicate failure-free production

C. Monitor the number of warranty claims

D. Conduct focus group studies

ANSWER: D

Explanation:

Conduct focus group studies is the appropriate method because customer-perceived quality is defined by customers' judgments about whether a product or service meets their needs, expectations, and intended use. Focus groups provide a structured voice-of-the-customer approach: a trained moderator can ask participants about their experiences, perceptions of features and service, unmet needs, terminology, priorities, and the attributes they associate with quality. This qualitative feedback enables an organization to understand how customers interpret quality, including issues that may not be visible in internal operational measures.

For quality-management purposes, focus-group findings can help identify critical-to-customer requirements, clarify drivers of satisfaction or dissatisfaction, and develop hypotheses or survey questions for broader measurement. The results can then inform product, service, process, and communication improvements. ASQ describes the voice of the customer as the process of gathering customer expectations, preferences, and aversions, which aligns directly with using facilitated customer discussions to assess perceived quality. Customer-experience research also recognizes focus groups as a useful qualitative technique for exploring customer attitudes and experiences. See ASQ's Voice of the Customer resource and Qualtrics' overview of customer focus groups.

QUESTION NO: 41

Because of increasing internal costs, upper management has decided to outsource some components. To ensure that component production by suppliers will meet the company ' s specifications, the quality manager should do which of the following first?

A. Conduct source inspections of the components

B. Coordinate with the purchasing department to track total cost of parts

C. Survey the suppliers ' quality systems

D. Institute a dock-to-stock program

ANSWER: C

Explanation:

Survey the suppliers ' quality systems is the appropriate first action because outsourcing transfers production activity to an external provider but does not transfer the organization's responsibility for ensuring that specified requirements are met. A supplier quality-system survey provides an early, prevention-oriented assessment of whether a prospective supplier has the controls needed to produce conforming components consistently. The review should establish confidence that relevant processes are defined and controlled, personnel are competent, inspection and test activities are adequate, nonconformities are addressed effectively, records provide objective evidence, and changes are managed.

This assessment also gives the quality manager a factual basis for selecting, approving, and setting the appropriate level of ongoing control for each supplier. The scope and rigor of subsequent controls can then be matched to the supplier's demonstrated capability, the component's risk, and the organization's requirements. This reflects supplier-quality-management practice: qualify and monitor suppliers based on their ability to meet quality, delivery, and other applicable requirements, rather than relying primarily on downstream detection. ASQ describes supplier quality management as the process of managing supplier quality through selection, assessment, and improvement activities. ISO 9001 likewise requires organizations to determine and apply controls to externally provided processes, products, and services. See ASQ Supplier Quality Management and ISO 9001:2015.

QUESTION NO: 42

A quality council can support organization-wide improvement by which of the following actions?

A. Prioritizing improvement opportunities.

B. Reviewing progress against improvement objectives.

C. Removing barriers that exceed a team's authority.

D. Ensuring improvement work supports strategic priorities.

E. Conducting all routine product inspections.

ANSWER: A B C D

Explanation:

Prioritizing improvement opportunities, **reviewing progress against improvement objectives**, **removing barriers that exceed a team's authority**, and **ensuring improvement work supports strategic priorities** are correct. A quality council provides leadership-level governance for significant improvement work. It helps ensure that improvement resources are applied to important organizational needs and that teams receive timely direction and support.

Routine inspection and direct supervision of all employees are operating responsibilities, not normal responsibilities of a quality council. The council should focus on alignment, priorities, resources, and management review of results. See ASQ's quality management system resources.

QUESTION NO: 43

Which of the following are examples of prevention costs in a cost-of-quality system?

A. Quality planning

B. Supplier quality evaluations

C. Training employees in error-prevention methods

D. Warranty repairs performed after product delivery

ANSWER: A B C

Explanation:

Quality planning, **supplier quality evaluations**, and **training employees in error-prevention methods** are prevention costs because they are incurred to avoid defects, failures, and nonconforming outputs. Prevention activities improve the capability of the management system and processes before problems occur.

Warranty repairs are external failure costs because the nonconformity is discovered after delivery to the customer. Cost-of-quality analysis commonly classifies costs as prevention, appraisal, internal failure, and external failure. See ASQ's Cost of Quality resource.

QUESTION NO: 44

Which of the following practices support organizational learning following completion of a major improvement project?

A. Documenting lessons learned

B. Sharing successful methods with other process owners

C. Updating standard work when the new method is proven effective

D. Restricting project results to the original team

ANSWER: A B C

Explanation:

Documenting lessons learned, **sharing successful methods with other process owners**, and **updating standard work when the new method is proven effective** support organizational learning. These practices preserve knowledge, encourage replication of effective approaches, and embed successful changes into routine operations.

Restricting project results to the original team limits the organization's ability to benefit from experience and may allow similar problems to recur elsewhere. Organizational learning is strengthened when knowledge is captured, evaluated, shared, and incorporated into systems and processes. See ASQ's resources on continuous improvement and knowledge management.

QUESTION NO: 45

To resolve inherent conflicts that arise from multiple customer requirements, an organization should use

A. quality function deployment

B. total quality management

C. six sigma methodology

D. design of experiments

ANSWER: A

Explanation:

Quality function deployment is the appropriate method because it provides a disciplined way to translate the voice of the customer into prioritized technical, service, and process requirements. Customer requirements can compete with one another—for example, customers may want greater performance, more features, faster delivery, and lower cost at the same time. QFD makes these trade-offs visible rather than leaving them to informal judgment.

Its central tool, often called the House of Quality, links customer “whats” with the organization’s “hows.” A cross-functional team assigns importance ratings to customer needs, evaluates relationships between needs and technical characteristics, and identifies positive or negative correlations among proposed technical responses. This structure helps the organization recognize where satisfying one requirement may impair another and decide which requirements should receive priority based on customer value and strategic objectives. The resulting priorities can then be deployed through product, service, process, and operational planning. ASQ describes QFD as a planning tool used to translate customer requirements into appropriate technical requirements at each stage of development. See ASQ’s Quality Function Deployment resource and its Certified Manager of Quality/Organizational Excellence certification page.

QUESTION NO: 46

In order to communicate effectively, managers must understand which of the following aspects of their audience?

A. The audience ' s culture may be different from their own.

B. The audience ' s culture is separate and subordinate to the corporate culture.

C. The audience is responsible for being engaged in the communication exchange.

D. An audience of workers will receive the information more willingly than an audience of managers.

ANSWER: A

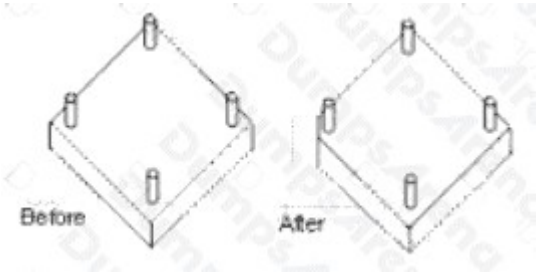
Explanation:

The audience ' s culture may be different from their own. is correct because culture affects the way people create, interpret, and respond to messages. A manager’s own assumptions about appropriate language, directness, hierarchy, decision-making, feedback, timing, and nonverbal behavior may not be shared by the people receiving the message. Understanding that the audience can hold different cultural norms helps the manager select clear language, provide relevant context, choose suitable communication channels, and confirm mutual understanding rather than assuming that a message was interpreted as intended.

This awareness is particularly important in organizational settings, where national, regional, professional, departmental, and generational cultures can all shape expectations. Effective communication therefore requires audience analysis and adaptation: the manager considers the receiver’s perspective and adjusts the message while maintaining its purpose and accuracy. This supports inclusion, reduces avoidable misunderstanding, and makes it more likely that the audience can act appropriately on the information communicated. The U.S. Centers for Disease Control and Prevention describes culture as influencing communication and emphasizes the importance of cultural competence in communication practices. See the CDC guidance on cultural competence and the American Psychological Association’s culture and diversity resources.

QUESTION NO: 47

A manufacturer purchases a square part for use in an assembly. The part contains four pins equally spaced from the center, and one of the four pins is shorter than the other three. The quality manager received data indicating that the parts are being oriented incorrectly by the automated assembly machine. A multifunctional team investigates the problem and recommends making a 45° cut on the corner of the part near the shortest pin, as shown in the drawing below.



This modification reduces the number of assembly errors significantly. The process used to correct the assembly problem is known as:

A. Quality function deployment (QFD)

B. Kaizen

C. Single-minute exchange of die (SMED)

D. Mistake-proofing

ANSWER: D

Explanation:

Mistake-proofing is correct because the 45° corner cut changes the part's physical design to make its intended orientation readily distinguishable to the automated assembly equipment. This is an example of poka-yoke: applying a feature, method, or device that prevents an error from occurring, or makes an error immediately apparent before it can create a defect. In this case, the square shape had allowed multiple apparent orientations, while the added asymmetric corner feature provides an unambiguous orientation cue. The improvement therefore builds quality into the assembly process rather than depending on later inspection, sorting, or correction of incorrectly oriented parts.

Effective mistake-proofing addresses a known failure mode at its source. The reported failure mode is incorrect orientation, and the design modification directly controls that condition by providing a reliable physical reference for the machine. Because the feature substantially reduces assembly errors, it demonstrates the prevention-focused intent of poka-yoke: reducing the opportunity for an incorrect action to result in a nonconforming assembly. This approach supports quality-management practice by emphasizing prevention, process capability, and defect avoidance. ASQ describes poka-yoke as mistake-proofing techniques that prevent errors or make them immediately detectable; see ASQ's poka-yoke resource. Additional lean manufacturing context is available from the Lean Enterprise Institute's poka-yoke definition.

QUESTION NO: 48

What is the first step a process owner must take in order to create a written process?

A. Define the current process

B. Provide quality training to all process workers

C. Identify the problems in the current process

D. Allocate resources for a cross-functional improvement team

ANSWER: A

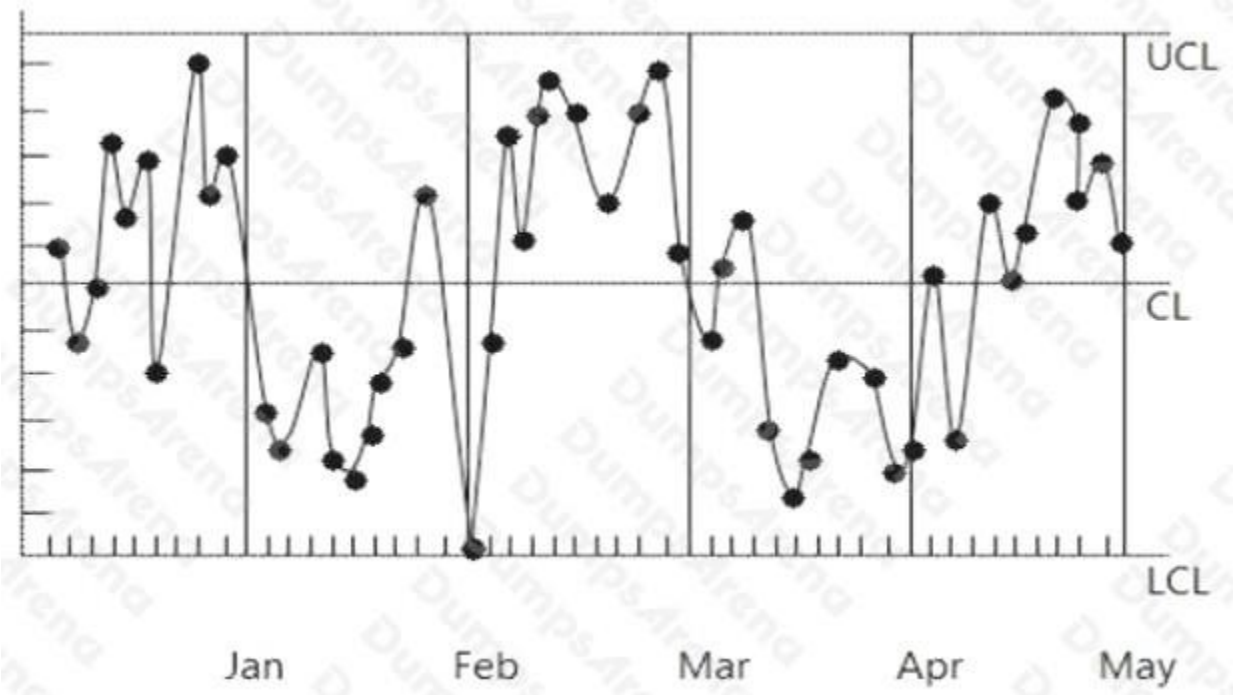
Explanation:

Defining the current process is the essential first step because a useful written process must accurately represent how work is presently initiated, performed, controlled, handed off, and completed. The process owner should establish the process purpose, boundaries, inputs, outputs, customers, suppliers, roles, activities, decision points, and applicable measures. Capturing this current-state understanding—often through a flowchart, process map, SIPOC, or similar visual description—creates a common factual baseline for everyone involved.

Once the current process is defined, the owner can document standard methods, clarify responsibilities, identify controls and records, and use the baseline to evaluate improvement opportunities. This sequence is consistent with the Plan-Do-Check-Act approach: planning begins by understanding the existing condition and the process to be managed or improved. A documented process is most effective when it reflects a deliberate process-management view rather than assumptions about how work should occur. ASQ describes PDCA as a structured cycle for planning and improving processes at ASQ's PDCA Cycle resource. ISO 9001 likewise emphasizes determining, managing, and documenting organizational processes within a process-based quality management system; see the standard overview at ISO 9001:2015.

QUESTION NO: 49

The following chart was created from data collected over the past 5 months.



The pattern in this chart is an example of what kind of trend?

A. Stable

B. Erratic

C. Cyclical

D. Natural

ANSWER: B

Explanation:

Erratic is the correct description because the plotted results fluctuate irregularly over time without a sustained directional movement or a repeating seasonal pattern. In trend interpretation, an erratic pattern is characterized by uneven, unpredictable variation: values rise and fall from one period to the next, but the sequence does not form a consistent upward or downward slope and does not recur at regular intervals. The chart therefore communicates instability or random-looking movement rather than a recognizable time-based cycle.

For a manager of quality, recognizing this visual pattern is important because a run chart or control-chart display should be interpreted in terms of the behavior of the process over time. An erratic pattern signals that the observed results do not exhibit a clear trend that can be projected from the available monthly data. Further investigation may be appropriate to understand the sources of the observed variation and to determine whether the process is behaving predictably. ASQ describes control charts as tools for studying process variation over time and distinguishing meaningful process signals from routine variation. See ASQ: Control Chart and NIST/SEMATECH e-Handbook: Control Charts.

QUESTION NO: 50

Many executives believe now believe that decisions should be made by those people with the best information to make decisions, regardless of their level in the organization. More decentralization might be needed under one or more of the following conditions:

A. The environment is complex or uncertain

B. Lower level managers are capable and experienced at making decisions

C. Decisions are relatively minor

D. None of these

ANSWER: A B C

Explanation:

More decentralization is appropriate when the environment is complex or uncertain because local managers and employees are often closer to customers, operations, emerging issues, and changing conditions. Placing decision authority nearer to the point of action improves the speed and relevance of responses when senior leaders cannot practically possess all current, detailed information. This supports the principle that decisions should be made by individuals with the best available knowledge of the situation.

Decentralization is also effective when lower level managers are capable and experienced at making decisions. Competence, sound judgment, and familiarity with organizational objectives allow managers at lower levels to exercise delegated authority responsibly while maintaining alignment with broader strategy. Appropriate training, clear decision boundaries, and performance feedback reinforce this capability.

When decisions are relatively minor, decentralization avoids unnecessary escalation and administrative delay. Routine or limited-impact decisions can be made efficiently by those directly responsible for the work, allowing senior management to focus on strategic, high-impact, or organization-wide matters. These conditions reflect the management principle that authority should be delegated to the lowest level able to make an informed and accountable decision. See OpenStax: Organizing for Decision Making and ASQ: Management and Leadership.

QUESTION NO: 51

Considering the maturity factor, the task and relationship behaviors comprise four leadership styles. These styles are: High task; low relationship, High task; High relationship, High relationship; Low task, Low relationship; Low task. Leadership style where specific instructions and close supervision of performance are indicated is:

A. High task; low relationship

B. High task; High relationship

C. High relationship; Low task

D. Low relationship; Low task

ANSWER: A

Explanation:

High task; low relationship is the correct leadership style when followers need specific instructions and close supervision of performance. In the Situational Leadership model, this is commonly termed the *directing* or *telling* style. The leader defines roles, establishes what must be done, specifies how and when work is to be performed, and closely monitors execution. Communication is primarily one-way because the immediate leadership need is clarity, structure, and active direction rather than shared decision-making or relationship-focused support.

This approach is appropriate when an individual or team has limited competence, confidence, experience, or readiness for a particular task. The leader's high task behavior reduces uncertainty by providing explicit performance expectations, priorities, procedures, and feedback. Low relationship behavior does not mean that the leader is uncaring; rather, it means the leader

places comparatively less emphasis on socioemotional support and collaborative discussion while the person develops the capability to perform the work. As competence and commitment change, the leader can adapt toward more coaching, supporting, or delegating behavior. ASQ's leadership resources emphasize that effective leaders adapt their approach to the needs and development of those they lead. See ASQ Leadership resources and Blanchard Situational Leadership overview.

QUESTION NO: 52

When preparing a communication plan for a major organizational change, managers should consider which of the following?

A. The stakeholder groups affected by the change

B. The information each group needs

C. Channels for receiving questions and feedback

D. A requirement that all communication be delayed until implementation is complete

ANSWER: A B C

Explanation:

The stakeholder groups affected by the change, **the information each group needs**, and **channels for receiving questions and feedback** are all important elements of an effective communication plan. Change communication should be tailored to affected audiences and should provide opportunities for two-way exchange so leaders can identify concerns, misunderstandings, and implementation barriers.

Communication should not be limited to a single announcement after implementation. Effective change management uses timely, repeated, and consistent communication before, during, and after the transition. See ASQ's change management resource.

QUESTION NO: 53

In order for a supplier certification program to be successful for all parties, the first step in the process should be to

A. perform an audit of the supplier ' s quality system to identify potential problems

B. educate management and the supplier about what is required to complete the certificate process

C. identify key players for the certification team and define their roles and responsibilities

D. identify opportunities for expediting the certification process by reviewing historical inspection data

ANSWER: B

Explanation:

Educating management and the supplier about what is required to complete the certificate process is the essential first step because supplier certification depends on informed commitment and shared expectations. Before assessment activities, team assignments, or performance-data reviews can be meaningful, both organizations need a common understanding of the certification purpose, qualification criteria, evidence requirements, responsibilities, timeline, communication methods, and the consequences of certification status. Management's understanding is particularly important because it establishes the authority, resources, and cross-functional support needed to operate the program consistently. The supplier also must understand the applicable quality-system, process-control, corrective-action, and performance expectations so it can prepare appropriately and participate as a partner rather than treating certification as a one-time inspection. This early alignment supports a transparent, mutually beneficial supplier relationship and helps ensure that subsequent certification decisions are objective, repeatable, and based on agreed requirements. ASQ describes supplier quality management as a structured approach to managing supplier performance and relationships; certification expectations must therefore be communicated before evaluation and ongoing management activities begin. ISO 9001 likewise requires organizations to determine and apply controls to externally provided processes, products, and services. See ASQ Supplier Quality Management and ISO 9001:2015.

QUESTION NO: 54

An effective way for a customer to prepare to negotiate with a current supplier is by

A. identifying critical performance issues

B. implementing statistical process control

C. reviewing warranty claims

D. writing a sample contract

ANSWER: A

Explanation:

Identifying critical performance issues is the most effective preparation because it gives the customer objective, relevant evidence on which to base the negotiation. Before discussing changes with an existing supplier, the customer should understand which aspects of delivered performance most affect organizational needs and customer requirements, such as recurring nonconformities, late deliveries, inadequate responsiveness, capability concerns, or failures to meet agreed quality measures. Defining the issues in measurable terms—using performance history, trends, requirements, and the operational or financial impact—helps establish clear negotiation priorities and supports specific requests for corrective action, improvement commitments, service levels, or revised terms.

This approach also keeps the discussion focused on the supplier relationship and on mutually understood expectations rather than on general impressions. Supplier-management practice treats ongoing monitoring, measurement, and review of supplier performance as essential inputs to supplier development and performance improvement. The resulting facts allow a customer to set a focused agenda, distinguish critical concerns from minor ones, and negotiate from a well-supported position. ASQ describes supplier quality management as encompassing the processes used to manage and improve supplier performance; see ASQ's Supplier Quality Management resource. Guidance on using performance measurement to support decisions is also available from ISO 9001:2015, particularly its emphasis on monitoring, measurement, analysis, and evaluation.

QUESTION NO: 55

Which of the following steps must be taken to create a successful on-the-job training program?

A. Selling performance objectives

B. Developing lesson plans

C. Identifying appropriate training facilities

D. Pre-testing the participants

ANSWER: B C D

Explanation:

Developing lesson plans, **identifying appropriate training facilities**, and **pre-testing the participants** are essential planning activities for a successful on-the-job training program. Lesson plans translate required job competencies into organized training objectives, sequenced content, practice activities, trainer guidance, and methods for confirming that learning occurred. This structure promotes consistent delivery when training is provided by different supervisors or trainers.

Appropriate training facilities are necessary because on-the-job learning must occur in an environment where the required tools, equipment, work conditions, safety controls, and access to knowledgeable support are available. The training setting should enable the learner to practice the actual work safely and without compromising product, service, or operational requirements.

Pre-testing participants establishes their current knowledge and skill level before instruction begins. That information helps the trainer tailor the depth, pace, examples, and practice needed to close real competency gaps. It also provides a meaningful baseline for evaluating improvement after training. Together, these actions support a planned, job-relevant,

measurable learning process rather than relying solely on informal observation or unstructured coaching. ASQ emphasizes competence development and training as part of an effective quality-management system; see ASQ Training Resources and the competence requirements in ISO 9001:2015.

QUESTION NO: 56

Which of the following is not a type of organizational structure?

A. Strategic

B. Process

C. Collateral

D. Matrix

ANSWER: A

Explanation:

Strategic is correct because it describes the level and direction of organizational management, decision-making, and planning rather than a formal method for arranging reporting relationships, authority, work, and coordination. Strategy establishes such matters as organizational purpose, competitive priorities, objectives, and the allocation of resources. An organization may use strategic planning regardless of whether its formal design is process-based, matrix-based, or another structural form.

In quality and organizational-excellence practice, structure concerns the mechanisms used to organize people and work so that responsibilities, accountability, information flow, and cross-functional coordination are clear. Strategy and structure are related: a chosen strategy should influence and be supported by the organization's structure, capabilities, and operating systems. However, they remain distinct management concepts. The ASQ CMQ/OE body of knowledge includes strategic planning and organizational structures as separate knowledge areas, reinforcing that "strategic" is not itself a structural type. See the ASQ Certified Manager of Quality/Organizational Excellence certification overview and the OpenStax discussion of organization design for the distinction between organizational design and strategic direction.

QUESTION NO: 57

Which of the following sets of factors is most important for establishing a supply base that delivers a competitive advantage?

A. Quality, cost, and delivery

B. Quality, price, and capacity

C. Quantity, cost, and availability

D. Quantity, price, and delivery

ANSWER: A

Explanation:

Quality, cost, and delivery is the most important set of factors because these are the core supplier-performance dimensions that determine whether a supply base can strengthen an organization's market position. Quality ensures that purchased materials, components, and services consistently meet requirements, protecting the reliability of the organization's own products and its customers' experience. Cost addresses the supplier's total economic impact, supporting profitable operations and enabling the organization to compete effectively without sacrificing required performance. Delivery concerns dependable timing and responsiveness, which are essential for maintaining production flow, controlling inventory, meeting customer commitments, and adapting to changes in demand.

Together, these dimensions support a balanced supplier-selection and supplier-management approach. A supplier that performs reliably in quality, cost, and delivery contributes to lower total cost, reduced operational disruption, and stronger customer satisfaction—outcomes that can become a sustainable competitive advantage. ASQ's supply-chain quality

resources emphasize managing supplier quality as an integral part of organizational performance, while NIST describes supply-chain management as coordinating activities and relationships needed to provide products and services effectively. See ASQ Supply Chain Management and NIST Supply Chain Resources.

QUESTION NO: 58

Today, many organizations have reduced the number of managerial positions through restructuring while increasing the spans of control. The optimum span of control is increasingly determined by issues such as:

A. Amount of employees training and experience

B. Strength of organization's culture

C. Available resources

D. Complexity of hierarchy

ANSWER: A B C

Explanation:

An optimum span of control is contingent on the level of direction, coordination, communication, and problem solving that a manager must provide. **Amount of employees training and experience** is a key consideration because capable, experienced employees can perform work more independently and require less frequent supervisory intervention. This can support a broader span while maintaining effective control and performance.

Strength of organization's culture also matters. A strong culture provides shared expectations, common values, and established norms for decision-making and behavior. These informal coordination mechanisms reduce reliance on direct managerial oversight, making wider spans more workable in flatter organizations.

Available resources affect the manager's ability to lead a larger group. Resources can include information systems, standardized processes, administrative support, communication tools, and sufficient time for coaching and performance management. When these supports are available, a manager can monitor work, communicate priorities, and resolve issues across more direct reports. These situational factors align with organizational-design principles relevant to the leadership and organizational management knowledge areas tested in the CMQ/OE body of knowledge. See the ASQ CMQ/OE Body of Knowledge and OpenStax's discussion of organizational design considerations.

QUESTION NO: 59

Management's goal is to continually improve customer service and satisfaction. Their actions include the following. Which of these actions is least likely to help achieve the goal?

A. Provide for positive reinforcement to employees who are trying to satisfy customers.

B. Encourage and support cooperation and conformance to quality standards amongst internal customers.

C. Establish an employee suggestion box system.

D. Ensure that employees have the training, information, and physical things they need to do their jobs well.

ANSWER: C

Explanation:

Establish an employee suggestion box system is the action least likely, by itself, to produce continual improvement in customer service and satisfaction. A suggestion system can be a useful channel for employee participation, but it is primarily a passive mechanism for collecting ideas. Its contribution depends on whether employees submit relevant suggestions, whether management evaluates them promptly, whether worthwhile ideas are implemented, and whether results are communicated back to employees. Without those supporting practices, a suggestion box does not directly establish customer requirements, improve service processes, build employee capability, or assure consistent service delivery.

Customer-focused quality management requires a more deliberate, systematic approach: understanding customer needs, translating those needs into operational requirements, monitoring performance, and acting on feedback and results. ASQ describes customer focus as understanding current and future customer needs and striving to exceed customer expectations. A suggestion box may support engagement within such a system, but it is not in itself a reliable or direct driver of improved customer satisfaction. This makes it the least likely action to achieve management's stated goal on its own. See ASQ's customer satisfaction resources and the ISO overview of ISO 9001 quality management principles.

QUESTION NO: 60

In the development of a consumer appliance product survey which of the following data would likely aid the process? I. An analysis of customer complaints received

II. Satisfaction data from a customer focus group

III. Number of product defects detected prior to shipmentsIV. Warranty registration data

A. I only

B. I, II, III, and IV

C. I and II only

D. I, II, and IV only

ANSWER: D

Explanation:

I, II, and IV only is correct because these sources directly support the design and administration of a consumer-facing product survey. Analysis of customer complaints identifies recurring customer problems, unmet needs, and product attributes that should be addressed in survey questions. For example, repeated complaints about reliability, ease of use, or service responsiveness can be translated into specific questions that measure the customer experience with those attributes.

Satisfaction data obtained through a customer focus group provides qualitative voice-of-the-customer input. It helps the survey team understand the language consumers use, the features they value, and the issues they consider important. This information improves question relevance, clarity, and content validity. Warranty registration data can provide useful customer-contact and product-ownership information, helping define the survey population and enabling the organization to reach actual purchasers or users of particular appliance models.

Together, these inputs help ensure that the survey is focused on meaningful customer requirements, reaches an appropriate respondent base, and produces actionable feedback. ASQ describes voice-of-the-customer work as gathering customer needs and expectations through methods that include surveys, interviews, and focus groups. See ASQ: Voice of the Customer and ASQ: Customer Satisfaction.

QUESTION NO: 61

Which of the following statements characterizes a customer-driven organization?

A. Front-line associates are empowered to resolve customer problems.

B. All departments use the same procedures to document customer complaints.

C. The customer service policy requires management to respond to customer complaints within 48 hours of receipt.

D. Customer surveys are conducted before any changes are made to services or products.

ANSWER: A

Explanation:

Front-line associates are empowered to resolve customer problems. A customer-driven organization designs its work, authority, and processes around understanding and satisfying customer needs at the point where customers interact with the organization. Empowering front-line personnel enables timely service recovery, reduces unnecessary escalation, and gives employees the authority to make appropriate decisions that protect the customer experience. This approach also helps the organization learn directly from customer issues and use that information to improve products, services, and processes.

Customer focus in quality management is more than collecting feedback or establishing response-time requirements. It requires organizational systems that create value for customers and build engagement, including responsive customer support and effective handling of customer concerns. The Baldrige Excellence Framework identifies listening to customers, managing customer relationships, and using customer information to improve performance as central customer-focused practices. ASQ likewise describes customer satisfaction as depending on an organization's ability to understand requirements and consistently meet them. Empowering the employees closest to the customer is a practical and widely used means of achieving that responsiveness. See NIST Baldrige Customer Focus and ASQ Customer Satisfaction.