

# ASQ CSSBB - Quiz Questions with Answers

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## 1. Organization-Wide Planning and Deployment

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### 1. Organization-Wide Planning and Deployment

1.

Which of the following does not belong in one of Porter's Five Forces?

**The business strategy**

Market demand

Commodity pricing

Market share of the competition

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*Correct answer: The business strategy*

*While the business strategy determines how a company will offer its products to customers and be competitive in the marketplace, by itself, it is not one of the Five Forces, which represent external forces which must be factored into the business strategy and its deployment. Market demand, commodity pricing, and competitor's market share are all external forces.*

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2.

Who became a national folk hero in Japan for their contribution to its economic advancement?

**W. Edwards Deming**

Arman Feigenbaum

Kaoru Ishikawa

Genichi Taguchi

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*Correct answer: W. Edwards Deming became a national folk hero in Japan through his assistance in helping post-WWII Japanese industry capture world market leadership in less than five years from its first efforts.*

*Feigenbaum, Ishikawa, and Taguchi each had notable achievements in the field of quality control. However, it was Deming who became the historically significant figure in first aiding Japan's industrial revolution.*

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3.

When should Lean Six Sigma be used for continuous improvement?

**Anywhere that variation and waste exist**

Only when top management approves the project

Only when there is a potential cost savings worth more than \$500,000

Only when there are sufficient resources to staff a project team to do the work

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*Correct answer: Anywhere that variation and waste exist*

*The other considerations, such as top management support, project staffing, and financial gain, are components of a project selection process, but by themselves do not govern the selection of a particular methodology.*

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4.

ISO quality standards are developed by which of the following?

**Specialized international agency**

United Nations (UN)

International Monetary Fund (IMF)

National Institute of Standards and Technology (NIST)

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*Correct answer: Specialized international agency*

*The agency is known as the International Organization for Standardization (ISO). The other agencies listed may have adopted ISO standards, but do not by themselves establish these standards.*

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5.

A 'Six Sigma' performing process relates to what level of precision?

**A defect level of 3.4 defects per million**

A defect level of 1.2 defects per million

A defect level of 6.8 defects per million

Achieving the highest level of perfection possible

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*Correct answer: A defect level of 3.4 defects per million*

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6.

Which statement is true about PEST?

**PEST focuses exclusively on external factors.**

One of the factors it looks at is the environment.

One of the factors it looks at is strategy.

PEST evaluates a combination of internal and external factors.

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*Correct answer: PEST focuses exclusively on external factors.*

*PEST stands for: Political, Economic, Social, and Technological. These are all external factors.*

*Environmental and strategic considerations are not PEST categories.*

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7.

Which quality approach helps managers at all levels monitor their results in their key areas?

**Balanced scorecard**

Reengineering

Benchmarking

Six sigma

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*Correct answer: Balanced scorecard*

*The balanced scorecard approach translates business strategy into performance measures that directly relate to the strategy, thereby serving as key metrics that matter.*

*Reengineering involves the restructuring of an entire organization and its processes. Benchmarking is an improvement process in which a company measures its performance against that of best-in-class companies to gain insight into how to improve its own performance. Six Sigma focuses on reducing variation.*

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8.

Which of the following is not generally used as a criteria in Hoshin Kanri planning:

**Regulators**

Customers

Suppliers

Employers

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*Correct answer: Regulators*

*Customers, suppliers, and employers are all generally used in Hoshin Kanri planning.*

*Regulators are not, for the basic reason that regulatory compliance is a standard assumption in strategy deployment.*

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9.

Who are considered to be the founding practitioners of Lean thinking?

**Eli Whitney and Henry Ford**

Kiichiro Toyoda

Shigeo Shingo

Taiichi Ohno

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*Correct answer: Eli Whitney and Henry Ford*

*Toyoda, Shingo, and Ohno all played important roles in furthering the practice of Lean in industry. However, they did not invent the original Lean practices.*

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10.

Project selection criteria must always be mindful of what major consideration?

**Business financial impact**

Gauging the performance and the health of an organization and its processes

What KPIs are relevant to the project scope

What resources may be required

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*Correct answer: Business financial impact*

*Project selection criteria must always be mindful of business financial impact. These may include return on investment, cost reduction, and an increase in the sales and profit. While project selection criteria vary according to organizational mission, their value must always be couched in monetary terms. Other, more tactical considerations, such as KPI (Key Performance Indicator) relevance, resource availability, and organizational health, are secondary to financial impact.*

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**11.**

Jeremy has been tasked to lead an effort to help his company understand how to increase its market share in the radio-controlled airplanes market. What is a likely tool from the choices below to help Jeremy in his strategic planning?

**SWOT analysis**

Force field analysis

Risk analysis

KPI flow down

*Correct answer: SWOT Analysis*

*The analysis of Strengths, Weaknesses, Opportunities, and Threats (SWOT) can be used to show how a company can leverage its strengths or improve weaknesses to take advantage of opportunities, while mitigating or eliminating threats. A force-field analysis is an internally-focused tool intended to help an organization understand how to reach an objective through the mapping of driving and restraining forces in an organization. A risk analysis identifies threats to achieving a company objective. This analysis might be a good followup to a SWOT analysis. A KPI (Key Performance Indicator) flow down helps a company understand specific actions and measurements so they can achieve a specified strategic objective. This tool would be a logical choice once Jeremy's company has implemented a strategy in the RC airplane market.*

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**12.**

A banker is evaluating a loan application for an automobile purchase of \$45,000. Based on the applicant's credit rating, he will offer a simple interest rate of 8.25% over 72 months. His application analysis indicates an 85% probability that the applicant will not default on the loan and will take the full 72 months to pay back the monies. What is the banker's expected profit?

**\$3,155.62**

\$3,712.50

\$2,317.33

\$2,669.12

*Correct answer: \$3,155.62*

*Expected profit = Profit \* Probability. In this case, the loan amount of \$45,000 multiplied by the simple interest amount of 8.25% gives an absolute profit of \$3,712.50. Multiplying this by the probability of 85% yields the answer. All other answers are incorrect.*

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13.

Which of the following is not a likely business weakness?

**The company practices Hoshin Kanri planning.**

The company is proud of its substantial number of metrics.

The company treats all customer orders equally.

The company has one of the largest product offerings in the industry.

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*Correct answer: The company practices Hoshin Kanri planning.*

*This is likely a strength, as Hoshin Kanri planning helps organize and control the planning and execution of the business strategy.*

*Too many metrics often confuse an organization as to the most important measures. All customer orders being treated equally often leads to an important customer experiencing late or missing orders, which may damage an organization's reputation. Having a large product portfolio is often an indication of an unfocused business strategy or poor product line management processes.*

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14.

Which technique is not a legacy of Kaoru Ishikawa?

**Kanban**

Quality circle

Cause and effect diagram

Quality first approach

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*Correct answer: Kanban*

*This technique was invented by Taiichi Ohno of the Toyota company.*

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15.

A fishbone is one form of the following:

**Cause and effect diagram**

Control circle

Statistical engineering

Quality loss function chart

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*Correct answer: Cause and effect diagram*

*Fishbone is a synonym of a cause and effect diagram. Control circles are small organizational study groups focused on a specific quality subject. Statistical engineering is the act of processing industrial data using statistics to understand trends and other parameters related to a process. A 'quality loss function' chart graphically displays the magnitude of quality loss across a process.*

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**16.**

Which of the following is not a Lean tool?

**Design of Experiment (DOE)**

Kaizen

Workplace organization

Value-stream mapping (VSM)

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*Correct answer: Design of Experiment (DOE)*

*Design of Experiment (DOE) is a Six Sigma methodology, whereas Kaizen, workplace organization, and value-stream mapping (VSM) are all distinctive tools used in Lean. DOE is a systematic, efficient method that enables scientists and engineers to study the relationship between multiple input variables (factors) and key output variables (responses). It is a structured approach for collecting data and making discoveries.*

*Kaizen is a Japanese term meaning "change for the better" or "continuous improvement." It is a Japanese business philosophy regarding the processes that continuously improve operations and involve all employees. Workplace organization is a workplace organization methodology to improve productivity, through eliminating waste, and quality, through reducing variation. Value-stream mapping (VSM) is a lean tool that employs a flowchart documenting every step in the process. Many lean practitioners see VSM as a fundamental tool to identify waste, reduce process cycle times, and implement process improvement.*

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17.

Which example is not a typical contingency planning category?

**Five-year business plan**

Computer network access

Supplier force majeure

Labor strike

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*Correct answer: Five-year business plan*

*This category might be affected by a crisis, but is not an operational or tactical issue that can be directly managed within a contingency plan.*

*Computer network access, supplier force majeure, and a labor strike are all good examples of issues that can be included in a contingency plan.*

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18.

What is the basic goal of Lean?

**To eliminate waste**

Teamwork

Cleaning

Reducing lead time

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*Correct answer: To eliminate waste*

*Lean can be applied to almost any activity, process, or system to identify and eliminate non-value added actions. Teamwork, cleaning, and reducing lead time are all specific means to reducing waste, but are not by themselves the basic goal of Lean.*

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19.

The Six Sigma philosophy is *best* described as:

**a problem-solving methodology based on facts and data**

a total quality control program

a methodology that ensures perfection in industry processes

a tactical approach to managing and acting on statistical analyses

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*Correct answer: a problem-solving methodology based on facts and data.*

*It is a philosophy of emphasizing defect prevention over defect detection, and to holistically reduce variation and waste, thereby providing a competitive advantage. It helps supplement a total quality control program. It does not ensure perfection, however, it does strive for perfection. Finally, there are many tactical and strategic approaches that may be used to provide a competitive advantage, and Six Sigma is not restricted to the use of statistical analysis as its only tool to accomplish this purpose.*

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20.

When beginning a Lean Six Sigma project, which methodology is best used first, and for what main reason?

**Lean – because the workplace needs to be made as efficient and effective as possible**

Six Sigma – because variation needs to be removed before one can reduce waste

Six Sigma – because one must first map out a process in order to understand how to improve it

Lean – because it can be accomplished quickly without a lot of top management support

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*Correct answer: Lean – because the workplace needs to be made as efficient and effective as possible*

*This process generates value stream maps to increase understanding of the process, and identify the inefficiencies and waste.*

*After these steps have been made and process variation is the remaining problem to be solved, Six Sigma work can be performed. To reverse this approach raises the risk that process variation improvement cannot be effectively implemented, should various wasteful actions be present in the process. Therefore, mapping out the process under a Six Sigma approach might well turn out to be a wasteful activity. Both Lean and Six Sigma work must be strongly supported by top management.*

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21.

From the choices below, identify the Lean Six Sigma project.

**Jennifer holds a Kaizen event over three days so the improvement team can digest output from analytical models of a new production process and design the equipment footprint to be constructed on the factory floor.**

Vijay conducts a 5S exercise with his warehousing management team to develop a new layout for incoming shipments.

Chef Quanzoo holds a Kaizen blitz over one day with his senior staff to upgrade the restaurant menu.

Douglas generates a value stream map of his company's aluminum can production process to increase this unit's takt time.

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*Correct answer: Jennifer holds a Kaizen event over three days so the improvement team can digest output from analytical models of a new production process and design the equipment footprint to be constructed on the factory floor.*

*Jennifer is merging a lean tool (Kaizen) within her DMADV (Define, Measure, Analyze, Design, and Verify) Six Sigma project to address DOE (Design of Experiments) output in the Analyze phase of her project within the Design phase of her project. Vijay's 5S project, Chef Quanzoo's menu project, and Douglas' VSM work are all solid Lean projects with no obvious inclusion of Six Sigma methodology.*

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22.

In strategic planning, which activity is not essential:

**Hold a middle management stakeholder meeting to develop critical-to-quality measures**

Develop a current state of understanding of the business environment

Envision ideal future state business outcomes

Develop the roadmap to the future state

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*Correct answer: Hold a middle management stakeholder meeting to develop critical-to-quality measures.*

*This is an important meeting. However, middle management is generally tasked with identifying critical-to-quality actions and measures subsequent to the development of the strategic plan.*

*The other choices, including developing a current state of understanding of the environment, envisioning ideal future state business outcomes, and developing the future state road-map, are all essential activities in strategic planning.*

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23.

What is the first step in understanding a business system?

**Understand how the goals and objectives of the enterprise are balancing conflicting forces**

Design the subprocesses

Convene a control circle to conduct a SWOT analysis

Review performance metrics on safety, cost, quality, and delivery

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*Correct answer: Understand how the goals and objectives of the enterprise are balancing conflicting forces*

*The business system must coordinate the often conflicting objectives between various functions. Understanding the current 'line of sight' from strategic to tactical to operational activities helps to understand how effectively strategy is being executed.*

*Designing subprocesses requires this level of understanding. SWOT analysis is a future state design activity and is subsequent to current state analysis. Reviewing performance metrics is a logical next step once the business strategy and its accompanying goals and objectives are understood.*

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24.

Choose the false statement about Six Sigma:

**Six Sigma focuses on defect detection.**

Six Sigma is a fact-based, data-driven methodology.

Six Sigma focuses on reducing the variation of output.

Six Sigma focuses on defect prevention.

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*Correct answer: Six Sigma focuses on defect detection is an incorrect statement.*

*Building quality into a process (e.g. defect prevention), is the essential activity that builds quality into a process. This requires using facts and data to understand why variation occurs and being able to prevent defects before they occur. Six Sigma is a truly fact-based, data-driven methodology which focuses on reducing variation in a preventative manner.*

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25.

What is the first modern quality approach?

**The control chart**

The cause and effect diagram

The quality control circle

The quality loss function

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*Correct answer: The control chart*

*This approach was invented by Walter Shewhart in the 1920's. Kaoru Ishikawa developed both the cause and effect diagram and quality control circle in the 1940's. The quality loss function is the invention of Genichi Taguchi, who developed this approach in the 1950s.*

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26.

Which of the following is not a Six Sigma tool?

**Kanban**

Statistical process control

Control chart

Process mapping

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*Correct answer: Kanban*

*This tool is a Lean method. Statistical process control, control chart, and process mapping are all within the Six Sigma methodology.*

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27.

What is the typical sequence of Hoshin Kanri planning?

**Objectives, Strategies, Tactics, Targets**

Strategies, Objectives, Targets, Tactics

Strategies, Objectives, Tactics, Targets

Objectives, Targets, Strategies, Tactics

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*Correct answer: Objectives, Strategies, Tactics, Targets*

*All other sequences provided are not valid.*

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28.

A 'Quality Control Circle' is best defined as:

**a small study group of employees focused on quality**

a control chart formatted as a radar screen

National Institute of Standards and Technology (NIST) titanium circumference rings

a statistical technique benchmarked to ISO standards

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*Correct answer: a small study group of employees focused on quality*

*Control circles were developed by Karoru Ishikawa as a means of promoting a bottom-up approach to solving quality challenges. This approach can be effectively used in any commercial situation.*

*Control charts do not apply to control circles. NIST benchmark calibration equipment has nothing to do with control circles. Statistical techniques might be used by control circles.*

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**29.**

Marty has just had his project charter approved. It entails a thorough reorganization of equipment and supplies on Line 1 of the Boise, ID factory, followed by a process upgrade to reduce defects in the quality of baseballs, which are a dedicated product on the line. What type of project is this?

**Lean Six Sigma project**

Lean project

Six Sigma project

Total productive maintenance project

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*Correct answer: Lean Six Sigma project*

*The project includes elements of waste reduction (Lean), as well as variation reduction (Six Sigma). The reorganization of Line 1 will undoubtedly include 5S (Sort, Straighten, Shine, Standardize, and Sustain), whereas the defect reduction activities will be DMAIC (Define, Measure, Analyze, Improve, and Control) methodology.*

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30.

What is the main focus of Six Sigma?

**Reduction of variation**

Driving out waste in the production process

Achieving six sigma in defect count

Improving work standardization and flow

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*Correct answer: Reduction of variation*

*Six Sigma's main focus is the relentless reduction of variation through process improvement. The end goal of this focus is determined by economics, technology, and voice of the customer. It doesn't end with achieving a defect count equivalent to six sigma variation (3.4 defects per million). Driving out waste in a process and improving work standardization and flow are Lean goals, which are compatible with Six Sigma objectives.*

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31.

The process of determining the best products to produce to increase market share and profitability is known as:

**Portfolio Analysis**

Hoshin Kanri

Feasibility Study

PEST

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*Correct answer: Portfolio Analysis*

*This process determines which products to produce in alignment with the business strategy, which always includes provisions on how to increase market share and profitability.*

*Hoshin Kanri translates business strategy into deployment actions across the entire business. A feasibility study investigates the viability of a proposed business action. PEST scans the external environment in four dimensions to increase business intelligence prior to planning initiatives.*

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32.

The invention of the control chart is credited to which quality guru?

**Walter Shewhart**

W. Edwards Deming

Joseph Juran

Philip Crosby

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*Correct answer: Walter Shewhart, the father of modern quality control, is widely recognized for standardizing the use of control charts for industrial quality use.*

*W. Edwards Deming, Joseph Juran, and Philip Crosby were each heralded as making important contributions to the field of quality control and continuous improvement. However, the concept of using control charting preceded them.*

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**33.**

Who was known as an influencer on quality control and helped the top managers in Japanese business correct serious quality problems?

**W. Edward Demming**

Walter A. Shewhart

Joseph M. Juran

Armand V. Feigenbaum

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*Correct answer: W. Edward Demming*

*Demming is widely acknowledged as the leading management thinker in the field of quality. Walter A. Shewhart is widely considered as the "father of modern quality control." Joseph M. Juran was highly influential in the area of quality management. Armand V. Feigenbaum is the creator of the Total Quality Control method.*

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**34.**

Raising quality awareness is encouraged by all the following actions, except:

**Implementing control charts**

Giving recognition to winning teams

Socializing results of quality improvement

Holding a zero-defects day

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*Correct answer: Implementing control charts*

*Using control charts is a necessary first step to understanding process trends, but any interpretive results must then be socialized across an organization, with recommendations on corrective actions if needed.*

*All the other actions listed are specifically designed to improve quality awareness.*

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35.

Which tool might be particularly helpful for developing a contingency plan?

**Develop an Ishikawa diagram**

Run a PEST analysis

Run a SWOT analysis

Run a risk analysis

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*Correct answer: Develop an Ishikawa diagram*

*Otherwise referred to as a cause and effect diagram, this step helps ensure that all external and internal factors are considered to understand what factor could influence a particular system.*

*PEST and SWOT analyses are generally useful for strategic planning purposes but could be adapted to assess individual factors once they are identified in the Ishikawa diagram. A risk analysis helps the business understand and quantify the impact of each identified factor, which is an essential second step in the contingency planning process.*

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36.

Automating quality, rather than relying on inspection, was strongly advocated by which quality guru?

**W. Edwards Deming**

Joseph Juran

Philip Crosby

Armand Feigenbaum

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*Correct answer: W. Edwards Deming*

*Deming developed a list of 14 points which emphasized the need for management to elevate the importance of quality systems in both culture and structure, including programming quality into production, rather than relying on inspection at the back end of the process.*

*Philip Crosby and Joseph Juran both created their own key points of quality improvement, which stressed leadership and organizational awareness and encouragement of quality initiatives. Armand Feigenbaum innovated quality cost management.*

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37.

Which of the following best describes Hoshin Kanri?

**It is a strategy deployment tool**

It is a tool for management

It is a planning and execution protocol

It is a tool for operations excellence improvement

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*Correct answer: It is a strategy deployment tool*

*Hoshin Kanri is a strategy deployment tool. Hoshin refers to the shining arrow. The word "kanri" means management. Hoshin Kanri provides tools for stating objectives for the organization and managing its implementation. It is not used exclusively by management, rather, it specifically requires every level of an organization to set goals and objectives. It is much more than simply protocol or operations excellence. It is a methodology for aligning actions to goals and establishing accountability across an organization.*

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38.

Choose the best example of a Lean initiative:

**Reducing the production cycle time of a chemical batch process**

Increasing the first-pass quality percentage of stamped metal parts

Improving the thrust factor of a rocket engine

Improving the design of an automotive gasket to be leak-free over 30 million cycles

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*Correct answer: Reducing the production cycle time of a chemical batch process*

*This activity reduces waste – excess time – in the process. All of the other initiatives focus on improving output or reducing variation, which are driven by Six Sigma methodology.*

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39.

SWOT evaluates the following:

**Both internal capabilities and external situations**

How strategy is deployed to gain market share and improve profitability

How to beat a competitor to the marketplace

The five-year business plan

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*Correct answer: Both internal capabilities and external situations*

*This analysis answers the basic question: "how can the organization leverage its strengths or improve its weaknesses to take advantage of the opportunity while mitigating or eliminating threats?"*

*It is a tool of strategy deployment, but is more tactically oriented. It may or may not focus on beating a competitor to the marketplace. As it is more tactically oriented, it may be an input to the five-year business plan, but it does not evaluate it.*

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40.

SWOT stands for:

**Strengths, Weaknesses, Opportunities, Threats**

Strengths, Weaknesses, Outcomes, Threats

Strengths, Weaknesses, Outcomes, Tactics

Strategies, Weaknesses, Outcomes, Tactics

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*Correct answer: Strengths, Weaknesses, Opportunities, Threats*

*SWOT is an effective business strategy planning tool which evaluates internal capabilities versus external situations.*

*Outcomes, tactics, and strategies are not internal capabilities or external situations.*

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**41.**

What are the main categories of the Ishikawa diagram?

**The 7 Ms and the effect**

The fish bones

The 7 Ys and the effect

The 5 Ss plus the outcome

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*Correct answer: The 7 Ms and the effect*

*These include: Mother Nature, Materials, Methods, Manpower, Measurement, Machines, Management.*

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42.

Why was Six Sigma combined with Lean to create Lean Six Sigma?

**The waste reduction goals of Lean and variation reduction goals of Six Sigma use tools that, when combined, can synergistically increase customer satisfaction and competitive advantage.**

Corporations discovered that merging Lean and Six Sigma initiatives was a more 'Lean' way of continuous improvement.

The merging was mandated by the International Organization of Standardization (ISO).

Various gurus of both methodologies held a summit in 2002 and determined it was the right thing to do.

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*Correct answer: The waste reduction goals of Lean and variation reduction goals of Six Sigma use tools that, when combined, can synergistically increase customer satisfaction and competitive advantage.*

*It may be true that combining Lean with Six Sigma on a single initiative may at times be cost effective, but this is not always the case. The ISO had nothing to do with the idea of combining Lean and Six Sigma. A guru summit was never held in 2002 for the specific purpose of combining Lean and Six Sigma.*

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43.

The Third Wave of the Industrial Revolution refers to what type of progress?

**The Digital Revolution**

Mass Production

Total Quality Control

Lean Production

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*Correct answer: The Digital Revolution*

*It is now synonymous with the so-called Third Wave of the Industrial Revolution. Beginning in the 1950's, semiconductor technologies and mainframe computing allowed for more efficient scientific processing of industrial data, enabling statistical quality control methodologies.*

*Mass production heralded the Second Industrial Revolution, which was a phase of rapid standardization and industrialization. Total Quality Control is a process by which entities review the quality of all factors involved in production. Lean production is associated with the Second Industrial Revolution.*

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**44.**

Sigma Black Belts typically are required to annually manage and produce the following combinations of projects and savings:

**4 projects saving \$500,000 – \$5,000,000**

4 projects saving \$50,000 – \$500,000

2 projects saving \$1,000,000 – \$5,000,000

As many projects as can be handled, producing at least \$1,000,000 in savings

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*Correct answer: 4 projects saving \$500,000 – \$5,000,000.*

*The investment to train and support Six Sigma Black Belts is a cost that companies typically want a significant return on up to fifty times their investment per year. This can be in the following forms of hard savings: cost take out, working capital reduction, and revenue growth. Through experience, it has been found that a Black Belt is most productive when managing 4 projects per year. In addition, if a Black Belt is managing a project that is likely to save less than \$200,000/yr, then it is generally not worth using a Black Belt as the lead resource. Instead, a Six Sigma Green Belt may be tasked with this work.*

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45.

If you are a petrochemical company, which of the following is likely to be an opportunity for your business?

**An influx of new workers, including skilled foreign emigrants, moving in from other regions**

Carbon dioxide emission regulations impact on business costs

The Exxon Valdez oil spill just happened

Multiple earthquakes occurred in Oklahoma due to excessive hydro-fracking

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*Correct answer: An influx of new workers, including skilled foreign emigrants, moving in from other regions*

*New, talented workers eager to find jobs add to the employment base of a company and can bring new expertise at better value than a company currently employs.*

*Carbon dioxide regulations are likely to add to environmental control costs. The Exxon Valdez spill notably heightened public angst towards the petrochemical sector and resulted in many new regulatory actions. Increased earthquake activity attributed to hydro-fracking will undoubtedly lead to heavier regulation of oil drilling in many oil fields worldwide.*

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**46.**

Place the following consideration into the PEST category that most directly applies.

A bond proposal to fund expansion and improvements to the existing light rail system. Oddly, the communities that would stand the most to gain from the improvements are firmly opposed to the proposal due to the increase in taxes.

**Economic**

Social

Technological

Political

*Correct answer: Economic*

*The first consideration in this bond proposal is how it will be funded, which is nearly always through public taxation. Since taxation is an economic consideration, this is the consideration that most directly applies. There might be subsequent considerations after the bond measure is approved by the public, which include:*

- Social: the direct benefits/impacts on certain demographic sectors who will use or be impacted by the rail system*
  - Technological: the impact and benefits on the infrastructure of the city*
  - Political: possible political discussions as to how revenue from the system should be allocated to various state and local organizations, such as schools and universities*
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**47.**

Reviewing all measurements below, which one does not meet Six Sigma's quality performance standard?

**2.5-sigma shift in the mean**

3.4 defects per million opportunities

1.2 sigma shift in the mean

5.4 defects per million opportunities

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*Correct answer: 2.5-sigma shift in the mean*

*Six Sigma corresponds to 3.4 defects per million opportunities, or 1.5-sigma shift (or less) in the mean.*

*Having low defects, or a small sigma shift, implies that a process is in good control. In Six Sigma, anything in excess of 3.4 defects per million opportunities, or less than or equal to 1.5-sigma shift, meets the definition of quality performance. A 2.5-sigma shift suggests that a process could be improved significantly through better control methods.*

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48.

Which choice below is **not** consistent with Six Sigma philosophy?

**Six Sigma projects begin with project charters, which identify a solution as a hypothesis**

Six Sigma uses a structured, problem-solving approach to support a desired improvement.

Six Sigma utilizes the science of statistics as a tool for analysis and decision-making.

Six Sigma projects are approved and assessed through a structured, leadership-led organization that supports business strategy.

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*Correct answer: Six Sigma projects begin with project charters, which identify a solution as a hypothesis*

*This is the opposite of how a Six Sigma project should actually begin, which is with a hypothesis that must be proven or disproved through rigorous analysis and testing. Sadly, many project charters are poorly written to include a solution.*

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**49.**

What is the most important initial activity after launching a Six Sigma project?

**Mapping and understanding the process to be improved**

Envisioning the future state

Developing an improvement roadmap

Determining the accuracy of planned measurements

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*Correct answer: Mapping and understanding the process to be improved*

*This initial step solidifies understanding of the current state and highlights stakeholders, inputs, transforms, and outputs. The other goals take place subsequent to, and are often guided by, a deeper understanding that evolves during the mapping exercise.*

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50.

Ensuring the appropriate measurement system is in place to *comprehensively* monitor a system is most closely associated with:

**Unintended Consequences Management**

Hoshin Kanri

Contingency Planning

Risk Analysis

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*Correct answer: Unintended Consequences Management*

*To avoid unintended consequences in the improvement of a system, it is important to put a measurement system in place to ensure that the system is producing the correct outcomes.*

*Hoshin Kanri's purpose is ensuring good execution of the business strategy. Contingency planning is a useful practice in identifying crisis situations that are disruptive to business execution. This is good input for unintended consequence management, but does not by itself generate a measurement system. Risk analysis is a useful practice that is an input into contingency planning.*

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## 2. Organizational Process Management and Measures

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### 2. Organizational Process Management and Measures

51.

Which APQC benchmarking type evaluates a company's IT performance compared to its peer companies?

**Functional**

Generic

Internal

Process

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*Correct answer: Functional*

*This type of benchmarking compares the performance of a specific business function with that of its peer companies.*

*Generic could be applied, but it is not the best choice. Internal does not apply in external benchmarking cases. Process would not apply, as the entire IT function is being benchmarked.*

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**52.**

What category does the metric, 'on-time, in-full delivery' belong to in the Balanced Scorecard system?

**Customer**

Financial

Internal

Living and growth

---

*Correct answer: Customer*

*This metric is directly associated with increasing or decreasing customer satisfaction and is normally tracked by customers.*

*Financial, Internal, and Living and Growth categories pertain to different measurements.*

---

53.

Paul has just been instructed by his Vice President to benchmark operations with their main competitor. "You did a great job on the last one," he remarks. "Let's use the same code of conduct rules again. I don't want to go to jail." What is the Vice President likely referring to?

**A comprehensive clause on issues of legality to avoid any actions that could be construed as illegal**

A clause that allows for one-sided benchmarking

A mutual indemnification clause for price fixing

A vague description of commercial use restrictions of any technology shared

---

*Correct answer: A comprehensive clause on issues of legality to avoid any actions that could be construed as illegal*

*Having a clear understanding of what is required of each company during the benchmarking work is essential in avoiding even the perception of illegal behavior. One-sided benchmarking that does not provide mutual benefits, any clause such as price fixing indemnification that implies illegal behavior, or contract language vagueness intended to give too much latitude to one company's subsequent marketing actions, are all derailleurs to an effective benchmarking exercise.*

---

54.

"Breakthrough" in the context of benchmarking can be defined as:

**acting on benchmarking to effect significant improvement**

setting goals significantly above the standard 10 percent year over year

identifying the next generation technology

converting the mindset of an organization to learning mode

---

*Correct answer: acting on benchmarking to effect significant improvement.*

*Benchmarking makes organizations aware of what's possible and, as such, brings down mental barriers to what can be achieved.*

*All other choices do not apply.*

---

55.

Which of the following is true of qualitative project benefits?

**They should be identified in the project proposal as enablers to financial benefits**

They should be ranked by estimated financial benefit

They should be de-emphasized in the project proposal

They should be assigned a surrogate financial measure

---

*Correct answer: They should be identified in the project proposal as enablers to financial benefits*

*Some benefits are financially intangible, yet are key to the ultimate project success. An example would be change management wins that enable the adoption of a new technology that brings measurable financial benefits. Qualitative benefits cannot be financially estimated, nor should they be de-emphasized as a project benefit.*

---

**56.**

An absentee rate is an example from what category of the Balanced Scorecard system?

**Learning and growth**

Financial

Customer

Internal business processes

---

*Correct answer: Learning and growth*

*This category includes the capabilities and skills of an organization and how it is focused and channeled to support internal business processes and create customer value.*

---



57.

Jason is leading his business team through a process benchmarking exercise with two benchmarking partners. What should Jason's team be careful to document during this exercise?

**The cultures of the two benchmarking partners**

The organizational size of the two benchmarking partners

The company age of the two benchmarking partners

The market capitalization of the two benchmarking partners

---

*Correct answer: The cultures of the two benchmarking partners*

*Cultures can vary widely between companies, making direct transferability of processes very difficult. Size, age, and market capitalization are minor factors in determining whether or not a process can be transferred between companies.*

---

58.

Which example is not a customer loyalty metric?

**On time, in full percentage**

Net promoter score

Customer referral rate

Customer abandonment rate

---

*Correct answer: On time, in full percentage*

*This is an extremely valuable metric, but is an operational measurement that is a causal or diagnostic metric for customer loyalty metrics.*

*Net promoter score, customer referral rate, and customer abandonment rate all directly measure customer satisfaction and loyalty.*

---

59.

Which selection is least likely to be considered a soft dollar savings by management?

**Employee training efficiency improvement**

Downtime improvement

Employee turnover reduction

Pollution reduction

---

*Correct answer: Employee training efficiency improvement*

*This cost can be directly related to the hard financial investment made in upgrading employee skills for which there is a prior baseline of spending.*

*Downtime improvement, employee turnover reduction, and pollution reduction are often considered cost avoidance measures versus cost reductions. Downtime improvement adds capacity to a system. However, there is no information provided on whether there exists a demand for this capacity. Employee turnover is generally considered to add costs to an organization due to loss of efficiency and requirements for training new employees. However, the costs here can be difficult to define due to specific circumstances. Pollution reduction avoids costs of remediation and health care, and it improves the overall quality of the environment. These are all cost avoidances and are therefore soft dollar savings.*

---

60.

Choose the best example of a *leading* indicator metric:

**Direct Labor Costs**

Net Monthly Sales

Earnings Before Interest and Taxes (EBIT)

Return On Assets (ROA)

---

*Correct answer: Direct Labor Costs*

*This metric is a leading indicator of EBIT.*

*Net Monthly Sales, Earnings Before Interest and Taxes (EBIT), and Return On Assets (ROA) are all lagging metrics.*

---

61.

Harold has itemized the savings on his global sourcing of an acetone project. All savings resulted from contract negotiations to reach a new price level, effective at the start of the new calendar year. The company had already budgeted for existing pricing in the coming year. What type of savings is Harold delivering to his company?

**Hard savings**

Cost avoidance

Preventive cost

Appraisal cost

---

*Correct answer: Hard savings*

*In this circumstance, as the company had already allocated monies based on existing pricing, Harold's project allows for repurposing the difference between the new and existing contract pricing. Soft dollar savings are cost avoidance savings.*

*The savings would have been cost avoidance if the company had not allocated monies for its global acetone purchases. Preventive costs are those where monies are spent on mitigating perceived risks. Appraisal cost is an example of a preventive cost.*

---

62.

What is a likely derailer to conducting a successful benchmarking exercise?

**Trade secrets**

Incompatible metrics

Staff doesn't have time to do the work

Company has unique processes that can't be benchmarked

---

*Correct answer: Trade secrets*

*Trade secrets are fiercely protected and even the slightest risk of a breach of confidentiality will derail a benchmarking effort.*

*Incompatible metrics can be standardized. Benchmarking is often outsourced work due to the lack of time and/or expertise within the company. Unique processes are benchmark-able based on their standardized performance.*

---

**63.**

Choose the item below that is not a typical stakeholder in a manufacturing improvement project.

**The corporate Six Sigma Champion**

People who might have to change their behavior to support the proposed change

Managers who have critical resources that are needed to make the project successful

Managers who have the power to derail the project

---

*Correct answer: The corporate Six Sigma Champion*

*The corporate Six Sigma Champion is typically not involved as a stakeholder in manufacturing. The Champion oversees the corporate Six Sigma program in general and is unlikely to be affected by a change within manufacturing. Personnel who need to change their behavior, manage critical project resources, or who could derail the project are all typical stakeholders.*

---

**64.**

What choice below is not an appropriate use of benchmarking?

**Create a template of activity to transfer between companies.**

Help teams strive toward excellence.

Allow visibility into what is possible.

Provide the ability to establish intermediate stretch goals.

---

*Correct answer: Create a template of activity to transfer between companies.*

*Copying practices from one company to another is fraught with difficulties due to the myriad of differences between companies. Striving toward excellence, creating visibility into the possible, and helping establish stretch goals are all appropriate uses of benchmarking.*

---



**65.**

A company's cost of capital is 12%. Assuming that the company wants to ensure that \$1,000,000 is available in five years for a capital project, what is the amount that must be invested right now?

**\$567,427**

\$442,998

\$897,456

\$550,112

*Correct answer: \$567,427*

*To determine the present value, the calculation is as follows:*

*Future Value (FV) = \$1,000,000*

*Annual interest rate (i) = 12%*

*Present Value (PV) =  $F * 1/(1 + i)^n$  where  $n$  = number of periods*

*Solving this equation using the information provided yields the following:*

*$PV = \$1,000,000 * 1/(1 + 0.12)^5 = \$567,427$  (with cents rounded up to the nearest dollar).*

---

66.

What is a drawback to cost-benefit analysis (CBA)?

**Indirect benefits are often difficult to calculate**

Organizational bandwidth to calculate CBA is large

Customer tastes change too quickly for CBA to be useful

Finance is often highly skeptical of CBA output

---

*Correct answer: Indirect benefits are often difficult to calculate*

*Quantifying indirect benefits can take time and lots of leadership alignment to work, so projects that hinge primarily on these costs are often not approved. Six Sigma Black Belts are expected to routinely calculate cost-benefit analysis (CBA), so bandwidth is normally not an issue. CBA can include forecasted demand changes as a cost. Finally, as finance is an important stakeholder in project results, it is expected that the Black Belt will work to align their financial estimates with finance managers.*

---

67.

Which stakeholder category requires the project team to develop "protect and defend" measures?

**Low influence/high importance**

High influence/high importance

High influence/low importance

Low influence/low importance

---

*Correct answer: Low influence/high importance*

*Stakeholders who have low influence but high importance within an organization are potentially strong players in the project. The project team should seek to have their level of influence increased.*

*High-influence/high-importance players should be collaborated with. High-influence/low-importance players should have their level of interest positively involved, as they could become project saboteurs. Low-influence/low-importance players should only be monitored.*

---

68.

Which of the following types of costs is not a standard Cost of Quality (CoQ) category?

Design costs

Appraisal costs

External failure costs

Prevention costs

---

*Correct answer: Design costs*

*Cost of Quality (CoQ) categories include appraisal, prevention, internal failure, and external failure costs.*

- **Appraisal:** Measurement and inspection activities during operations to determine conformance to quality requirements.
- **Prevention:** Activities planned and designed before operations to guarantee good quality and prevent bad quality products or services.
- **Internal Failure:** Expenses incurred to remedy defects discovered before the delivery of a product or service.
- **External Failure:** Expenses incurred to remedy defects discovered by customers after the customer receives the product or service.

*Design costs are not necessary prevention costs and include costs outside of CoQ categories.*

---

69.

Economic value added is an example of which Balanced Scorecard category?

**Financial**

Customer

Internal business performance

Learning and growth

---

*Correct answer: Financial*

*Economic value added is a measure of a company's financial performance based on the residual wealth calculated by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis.*

*All other choices are incorrect.*

---

70.

A business makes \$10,000 in revenue for Product A in July. The COGS of Product A that was sold was \$7,000. What is the percent profit margin?

30%

15%

40%

23.5%

*Correct answer: 30%*

*Percent profit margin is calculated as follows: (Sales of Product–Cost of Product)/Sales of Product multiplied by 100. Plugging in the numbers from the example, the calculation is written as:  $(\$10,000 - \$7,000)/\$10,000 * 100 = 30\%$ .*

---

71.

Choose the criteria that does not apply when defining KPIs:

**KPIs should be output-driven.**

KPIs should be quantitative, goal-based, strategy-based, and time-bounded.

KPIs should reflect KBDs.

KPIs should reflect CSFs.

---

*Correct answer: KPIs should be output-driven.*

*This is exactly the opposite of the intended use of KPIs: they should be outcome-driven in order to help the organization measure progress in achieving its strategic plans. Output-driven metrics, or metrics existing merely for themselves, have no place in an organization.*

*KPIs should be quantitative, goal-based, strategy-based, and time-bounded. They should reflect key business drivers (KBDs) as well as critical success factors (CSFs).*

---

72.

A quality professional recommends to his leadership team that the business should require 100% first pass, first quality, in order to remain competitive in the marketplace. The finance manager disagrees with this proposal. Ultimately, the quality goal is set at 85%. Choose the best reason why the team arrived at this number.

**Appraisal and prevention costs offset failure costs with rising quality.**

The marketplace can tolerate 85% quality.

The CpK of the process doesn't allow for higher than 85% quality.

Finance always gets their way.

---

*Correct answer: Appraisal and prevention costs offset failure costs with rising quality.*

*In this case, Finance likely displayed all the costs of quality to the team and was able to convince them that these costs were minimized at the 85% first pass, first quality level.*

*It is highly unlikely that any marketplace would tolerate an 85% quality level. Since it was the Finance manager objecting to the proposal and not manufacturing, it is unlikely that process capabilities, otherwise known as CpK, are poor. Finance, as any stakeholder, cannot unilaterally make decisions in cross-functional venues.*

---



73.

Which of the following is likely to be considered as false savings?

**Annualized reduction in FTE hours due to the simplification of a transaction procedure**

Renegotiation of a raw materials sales contract that reduces the unit purchase price by 10%

Restructuring of an organization leading to a reduction of 1,500 employees

Deciding to purchase a less expensive piece of process equipment to replace a more expensive factory floor unit

---

*Correct answer: Annualized reduction in FTE hours due to the simplification of a transaction procedure*

*Making generalizations regarding FTE hour savings is risky because unused employee bandwidth is normally quickly filled with other duties by management. However, replacing equipment with a more economical choice would be considered a legitimate cost avoidance. Hard savings would be attributed to a reduction in the cost of a raw material or in the reduction of fixed costs due to staff downsizing.*

---

**74.**

An absentee rate is an example from what category of the Balanced Scorecard system?

**Learning and growth**

Financial

Customer

Internal business processes

---

*Correct answer: Learning and growth*

*This category includes the capabilities and skills of an organization and how it is focused and channeled to support internal business processes and create customer value.*

---

75.

Which key value is essential to calculating Net Present Value?

**Cost of capital**

Cost of goods sold

Cost of raw materials

Operating income

---

*Correct answer: Cost of capital*

*NPV takes time into account to improve the accuracy of cash/capital project evaluations. Present value monies are discounted at an appropriate percentage rate, which is the cost of capital.*

*All other selections do not apply in this calculation and are therefore incorrect.*

---

76.

What is an example of an individual who most likely does not meet the definition of a stakeholder in a bourbon distillery business?

**The owner's high school children**

The federal government

The master distiller

Customers

---

*Correct answer: The owner's high school children*

*Tague (2005) defines a stakeholder as "anyone with an interest or right in an issue, or anyone who can affect or be affected by an action or change. Stakeholders may be individuals, groups, internal or external to the organization. In the present case, alcohol is tightly regulated by the ATF, a part of the federal government, and an example of an organization that is a stakeholder. The master distiller is an internal stakeholder. Customers are external stakeholders. The owner's high school children, who may not drink alcohol as they are underage, are likely not stakeholders in this situation.*

---

77.

Which of the following is a false statement about benchmarking?

**Benchmarking is a great means to copy another organization's way of doing things.**

There is no single best practice.

Benchmarking is an essential aspect of the strategic planning process.

There are as many benchmarking methodologies as there are organizations.

---

*Correct answer: Benchmarking is a great means to copy another organization's way of doing things.*

*Copied processes rarely succeed, due to myriad reasons pertaining to cost, culture, resources, etc.*

*All other statements are regarded as true.*

---

78.

What is the concern with lagging metrics?

**They are not predictive of business trends.**

They can't be used within a performance dashboard.

They don't create a line of sight to organizational strategies.

They are inappropriate measures of the company's value proposition.

---

*Correct answer: They are not predictive of business trends. Lagging metrics measure past performance and can't generally be used where causal diagnostics are needed to predict future trends.*

*They are abundantly used within performance dashboards, since they do, in fact, create a good line of sight on how strategy is performing, and find good use in measuring the company's value proposition.*

---

79.

Mary is writing her project charter and needs to understand how the proposed work both affects and is influenced by her organization and external customers. What should be her first step?

**Conduct a stakeholder analysis**

Develop a RACI

Develop a force-field analysis

Use nominal group technique

---

*Correct answer: Conduct a stakeholder analysis*

*This analysis identifies all individuals who either impact a project or is impacted by a project.*

*A RACI (Responsible, Accountable, Consult, Inform) analysis helps an organization execute a process. A force-field analysis identifies factors (or forces) that aid or hinder an organization in reaching an objective. The nominal group technique is a team tool that helps prioritize a list of items.*

---

80.

A SMART KPI is:

**Specific, Measurable, Achievable, Relevant, Time-bounded**

Strategic, Manageable, Appropriate, Reliable, Translatable

Specific, Measurable, Appropriate, Relevant, Time-based

Specific, Mutually exclusive, Achievable, Relevant, Time-bounded

---

*Correct answer: Specific, Measurable, Achievable, Relevant, Time-bounded*

*All other choices are incorrect.*

---



81.

What is the most notable drawback to employing ROI as a financial calculation?

**It ignores the time value of money.**

It only provides a rough estimate of an organization's ability to generate income from its resources.

It can't be used in measuring actual payoff.

It's very difficult to come up with the right costing values as they can change frequently.

---

*Correct answer: It ignores the time value of money.*

*ROI tends to be more useful in evaluating short-term payoff potential. As in any calculation, the result is only as good as the accuracy of the input.*

*As such, it is not limited to rough estimation or inaccurate costing values. It is most definitely used to measure actual payoff.*

---

82.

As production quality improves, which Cost of Quality increases?

**Appraisal costs**

Failure costs

Avoidance costs

Anticipation costs

---

*Correct answer: Appraisal*

*The costs of inspection must increase in order to improve quality percentages.*

*Failure costs will consequently decrease. Avoidance and anticipation costs are not costs of quality.*

---

83.

Jensen, a senior vice president, would like to understand if his IT department is operating its agile practices correctly. What type of benchmarking study is he contemplating?

**Best practices benchmarking**

Competitive benchmarking

Internal benchmarking

Process benchmarking

*Correct answer: Best practices benchmarking*

*Jensen is concerned about sub-optimized processes within IT and needs comparative information relative to other practices to understand where and how to improve his department. Benchmarking his current state with best practices performed in other parts of his company, as well as other companies, highlights effective practices that leaders in similar industries are using and, if all other comparative factors are equal, the adoption of the same by Jensen's company would likely produce an improvement in how IT is practicing agile.*

*Competitive benchmarking would merely identify current practices in peer-competitor companies. Internal benchmarking would only identify how other functions are using agile methods. Process benchmarking would only compare process performance with other companies and would not be useful in this situation.*

---

84.

What is not a typical rationale for using Cost-Benefit Analysis (CBA)?

**Leadership has chosen the wrong projects.**

Many of the easier projects have been done.

It's important to maximize the benefits.

All costs must be evaluated.

---

*Correct answer: Leadership has chosen the wrong projects.*

*CBA is used during the project selection process to give visibility to leadership which projects are likely to bring the highest benefits to the company, relative to the cost of each project.*

*In most companies, most of the easiest projects have been identified and completed. Using CBA after the fact is certainly a waste of effort. CBA shows how benefits can be maximized after analyzing all associated costs.*

---

85.

Which one of the following company practices does not lead to customer loyalty?

**Maintain frequent sales promotions.**

Maintain a competent technical support staff.

Maintain a customer delivery service percentage of 95%.

Provide a superior quality product.

---

*Correct answer: Maintain frequent sales promotions.*

*Customers who expect sales promotions to occur on a frequent basis will adopt a 'wait and see' posture before placing another order during the next promotion event. Should no further promotion event be forthcoming, the customer will abandon the relationship in favor of another cost-advantaged purchase.*

*Having competent technical support staff, maintaining a customer delivery service percentage of 95%, and providing a superior quality product are all practices that generate customer loyalty.*

---

86.

Stephanie, a company vice president, would like to improve the visibility, communication, and execution of the business strategy for her organization. Which choice would be the best tool to accomplish this task?

**Objectives and Key Results (OKRs)**

KPIs

KBIs

Balanced scorecard readouts

---

*Correct answer: Objectives and Key Results (OKRs)*

*OKRs help teams align around common objectives derived from the business strategy and track progress toward achieving them through the identification of specific actions, known as key results. KPIs, KBIs, and balanced scorecard readouts might be useful in helping management and the organization understand performance, but these tools do not define specific actions that need to be undertaken to execute a business strategy successfully.*

---

87.

Which of the following is least likely to be a customer loyalty metric?

**Customer product return percentage**

Customer referrals

Share of wallet

Customer retention rate

---

*Correct answer: Customer product return percentage*

*The customer product return percentage metric only determines purchases returned to the store. There is no further information on the reason or if this was a determining factor for customer loyalty.*

*Referrals, share of wallet, and retention rate all directly measure customer loyalty.*

---

88.

Joseph is estimating the profit margin percentage on the new cross-country ski design his company has produced. He notes that the new model will replace the older model, which last year enjoyed \$5.7 million in net sales from 15,700 units sold and a total net profit of \$2.56 million. The new model is expected to win \$6 million dollars in additional market share due to its advanced design features. Assuming the per unit COGS for the new model remains the same as the old model, what is the expected net profit from sales of the new product?

**\$5.25 million**

\$6.25 million

\$4.25 million

\$5.75 million

*Correct answer: \$5.25 million*

*Using the calculation for profit margin percentage, we know that:*

$$\% \text{ profit margin} = (\text{net profit}/\text{net sales})(100)$$

*In the previous year, the company made a net profit of \$2.56 million from \$5.7 million in net sales. Hence:*

$$\% \text{ profit margin} = (\$2.56 \text{ million}/\$5.7 \text{ million})(100) = 45\%$$

*Knowing that the company anticipates making \$5.7 million + \$6 million or \$11.7 million in sales from the new product, we can now calculate the expected net profit, knowing that the cost basis of the new product is the same as the old product:*

$$45\% = (\text{net profit}/\$11.7 \text{ million})(100).$$

$$\text{Net profit} = \$5.25 \text{ million}$$


---



**89.**

What ratio must a CBA analysis be generally greater than to gain leadership interest?

1

0.5

5

0.88

---

*Correct answer: 1*

*This implies that the benefits exceed the cost.*

*Values less than 1 indicate that the project's benefits are not worth the cost of effort. Organizations may set their own attractiveness hurdle for the CBA ratio that is greater than one, but these numbers are unique values.*

---

**90.**

Carl, a finance manager, is performing an annual update on the Ames Plant manufacturing facility's cost of goods sold. He has the following financial data from the facility from the previous financial year:

- **Revenue:** \$55,000,000
- **Net profit:** \$15,500,000
- **Raw material spend:** \$20,000,000
- **Labor spend:** \$5,000,000
- **Average inventory value:** \$750,000

What is the Ames Plant cost of goods sold (COGS) for the previous year?

**\$25,750,000**

\$35,000,000

\$25,000,000

\$40,750,000

---

*Correct answer: \$25,750,000*

*Cost of goods sold (COGS) is the sum of raw material, labor, and inventory costs.*

*\$20,000,000 (Raws) + \$5,000,000 (Labor) + \$750,000 (Inventory) = \$25,750,000*

---

91.

The project team should not spend a lot of resources on this stakeholder:

**Low impact/low cooperation**

Low impact/high cooperation

High impact/low cooperation

High impact/high cooperation

---

*Correct answer: Low impact/low cooperation*

*These stakeholders are marginal to project success and should be monitored only.*

*Low impact/high cooperation players should be increasingly involved in project discussions. Team dependency on high impact/low cooperation players should be increasingly lessened. High impact/high cooperation players should be collaborated with in a mutually beneficial manner.*

---

92.

What is the simplest test applied to a savings number to decide whether it is hard or soft savings?

**It has a measurable impact on the bottom line.**

It has a CBA ratio greater than 1.

It is an appraisal cost.

It is a process efficiency improvement.

---

*Correct answer: It has a measurable impact on the bottom line.*

*Simply put, hard dollar savings must affect the profit and loss statement, or balance sheet, of the company.*

*The CBA ratio does not apply in this situation. Appraisal cost is one type of cost of quality. Process efficiency improvement does not encompass all possible costs to constitute a test.*

---

93.

Working capital improvement is what kind of savings?

Hard

Efficiency

Soft

False

---

*Correct answer: Hard*

*Working capital savings impact the balance sheet, and are therefore hard savings.*

*Soft savings don't impact the bottom line. Efficiency savings are cost avoidance.  
False savings are a gross overestimation of savings.*

---

94.

What is not a typical rationale for using Cost-Benefit Analysis (CBA)?

**Leadership has chosen the wrong projects.**

Many of the easier projects have been done.

It's important to maximize the benefits.

All costs must be evaluated.

---

*Correct answer: Leadership has chosen the wrong projects.*

*CBA is used during the project selection process to give visibility to leadership which projects are likely to bring the highest benefits to the company, relative to the cost of each project.*

*In most companies, most of the easiest projects have been identified and completed. Using CBA after the fact is certainly a waste of effort. CBA shows how benefits can be maximized after analyzing all associated costs.*

---

95.

Jason is looking at a draft performance dashboard intended to monitor a new production process. He notices that every metric on the dashboard is a post-production quality measurement. What measurements are missing?

**Leading indicator metrics**

Financials

Customer feedback metrics

KPIs

---

*Correct answer: Leading indicator metrics*

*These should include factors known to impact product quality or output. Since the dashboard's purpose is to monitor the production process, other metrics, such as business financials, customer metrics, and Key Performance Indicators (KPIs), are not needed.*

---

# 3. Team Management

---

96.

Josh is assembling project information for his monthly leadership communication. What information below should not be included in his meeting notes?

**Team meeting notes**

Recent accomplishments

Financial wins

Problems and concerns

---

*Correct answer: Team meeting notes*

*Leadership communications should be brief and hit key points. Recent accomplishments, financial wins, and problems/concerns are all acceptable content in such communication.*

---



**97.**

The team sponsor is putting pressure on the project team to capture savings as quickly as possible, and the sooner the better. What is the most critical issue that the sponsor is jeopardizing?

**In the rush to capture savings, the team may miss key root causes.**

In the rush to capture savings, conflict may erupt within the team.

In the rush to capture savings, the team may digress too far from its objectives.

In the rush to capture savings, the team may not seek out dissenting views.

---

*Correct answer: In the rush to capture savings, the team may miss key root causes.*

*All the events listed are valid, including team conflict, losing sight of objectives, and failing to develop a well-rounded approach. The most critical issue is missing key root causes, which could lead the team to make faulty, and possibly disastrous, conclusions.*

---

98.

Requiring pre-work for a meeting is a means to accomplish what primary goal?

**Use meeting time efficiently**

Move the project along at a more rapid pace

Counteract team procrastination

Reinforce team norms

---

*Correct answer: Use meeting time efficiently*

*Having team members begin the meeting in a well-informed position advances the discussion significantly. Efficient meetings keep a project at a planned pace, but will not likely accelerate a project. Team procrastination is a deviation from a team norm that must be dealt with through coaching. This practice is likely to be a team norm, but that is not its primary goal.*

---

**99.**

Which type of team is usually cross-functional and sensitive to organizational changes?

**Process improvement teams**

Informal team

Formal team

Virtual team

---

*Correct answer: Process improvement teams*

*These cross-functional teams have representation from various groups, making them more vulnerable to organizational change. An informal team does not have a charter and will have a more fluid membership depending on their needs. A formal team is usually contained within an organization. Virtual teams are made up of people in different locations who provide discrete skill competency requirements. This type of team is more robust to change, as there are normally multiple personnel who have similar skill-sets.*

---

**100.**

What is the right form to provide team recognition?

**Recognition should be tailored to the individual's preferences.**

Mention the recognition in a team meeting.

Mention the recognition in a company newsletter.

Hold a certificate ceremony.

---

*Correct answer: Recognition should be tailored to the individual's preferences.*

*Some individuals may not appreciate public recognition and actually be demotivated by such an experience.*

*Therefore, all other forms of recognition could be legitimate, depending on the individual's preference.*

---