Total quality management

1. What is the difference between Juran’s definition of Strategic Quality Management and Madu and Kuei’s definition of Strategic Total Quality Management? Juran (1988) defined SQM as a “ systematic approach for setting and meeting quality goals throughout the company…with upper management participation in managing for quality to an unprecedented degree. ” Madu and Kueis (1993) use the term strategic total quality management, which they define as an extension of TQM that “ views quality as the driving force to the survivability and competitiveness of a firm. 2. What is the difference between validity and reliability? Validity is the degree to which the method used to collect the data actually measures what it is intended to measure. Reliability is the consistency of the method. 3. Describe each of the seven tools of management and how management can benefit from using them? Affinity diagram: are similar in function to cause and effect diagrams in that they are designed to help in the organization of ideas and facts relating to a broad concept into categories.

A business can benefit from this because ideas generated in a brainstorming session or a focus group provide more information for planning purposes when they are organized into categories using an affinity diagram. Tree diagram: allows managers to plan the actions necessary to implement the ideas and objectives shown on the affinity diagram. Matrix diagram: enables planners to graphically depict relationships between concepts. Interrelationship digraph: graphically depicts casual relationships among the categories from an affinity program.

Prioritization matrix: allows the comparison of both quantitative and qualitative data in the same analysis. Activity network diagram: is both a

project planning and project control tool. As a project planning tool, it requires that the entire project be broken down into its component activities, that the duration of each activity be forecast, and that the precedence relationship among the activities be defined. 4. What are work instructions? Discuss the role of work instructions.

Work instructions are nothing more than written instructions on how to perform a particular job or function. They contain the basics of how the work associated with an operation is to be performed, and how the performance of that job will be measured. 5. Define experimental design. Discuss the importance of experimental design as a tool. Experimental design is a formal plan that details the specifics for conducting an experiment, such as which responses, factors, levels, blocks, treatments, and tools are to be used.

Designed experiments are important tools for optimizing processes, identifying interactions among process variables, and reducing variation in processes. 6. Discuss the three general types of error that can occur in problem solving. Give examples. Type I: involves solving a problem that does not exist. Example: admonishing an employee for variation that is due to random causes. Type II: involves falling to recognize that a problem exists. Example: failure to use tools such as control charts to identify when a special cause of variation has occurred in a process.

Type III: occurs when the wrong problem is solved. Example: redecorating the break room to improve employee morale when the real problem is poor supervision. 7. Describe and discuss benchmarking. Benchmarking is an improvement process in which an organization measures its strategic operations or internal process performance against that of best-in-class

organizations within or outside its industry; determines how those organizations achieved their performance levels; and uses that information to improve its own performance. There are six phases of benchmarking which are:

Planning: decide what to benchmark, define benchmarking team, identify whom to benchmark, establish baseline for existing process, and define objectives and criteria for success Data acquisition: questionnaire/surveys, workshops/conferences, site visits, published documentation Analysis: determine the performance gap, project future performance levels Integration: communicate benchmarking findings and gain acceptance, establish performance goals Action: develop improvement strategy, develop action plans, implement and monitor progress, recalibrate the benchmarks Maturity: determine when best-in-class position is attained, develop objectives for continuing improvement 8.

Discuss the difference in variables and attributes data. Give examples of data. Variables data are data that can be measured on a continuous scale. Examples include measurements such as height, length, width, wavelength, and pressure. Attributes data are data that are discrete. One type of attributes data is count data where the number is theoretically unbounded. 9. Compare and contrast Deming and Crosby’s views on the cost associated with a lost customer. Deming’s view relies on management to improve the system so that workers can do their jobs more effectively which will improve customer satisfaction, while Crosby says attention to customer requirements and preventing defects is the key.

In contrast, they both do require commitment from management to improve the quality of service customers receive. 10. Discuss the barriers to quality improvement efforts. Barriers to effective quality-improvement efforts take many forms. Examples of common barriers are a failure to correctly understand customers' requirements, failure to understand the capability of the production system, failure to track defects, failure to repair subs optimized processes, and failure to track quality costs. Communication of quality begins at the very top of the organization. Top management must set a course and make a commitment to a defined level of quality today, and commit to continuous improvement for tomorrow.