Q.1 Historically, TQM was first emerged by the contributions of quality gurus, such as Deming and Juran. Then Crosby, Feigenbaum, Ishikawa, and others had developed this powerful management technique for improving business quality within the organizations. Discuss any three propositions stated by most of the gurus in quality management

Answer:

Quality gurus has stated various techniques and tools to improve the quality management. Some of the important proposition that we can discuss are as below,

Customer Focus: To be successful, quality experts stressed the significance of understanding and addressing the needs of customers. This concept entails soliciting consumer feedback using surveys, focus groups, and other means in order to gain an understanding of their requirements, preferences, and expectations. After gathering this information, organizations can use it to build products and services that meet these demands, as well as deliver outstanding customer service to guarantee that customers are satisfied with their experience. Customer focus is a crucial driver of quality improvement since it guarantees that the organization is satisfying the needs and giving value to its customers. Customer focus involves understanding the changing needs and expectations of customers and aligning the organization's products, services, and processes to meet those needs effectively. Organizations that are customer-focused actively engage with customers to gather feedback, listen to their complaints, and take corrective actions to address any issues, thus building customer loyalty and trust. Customer focus requires organizations to prioritize customer satisfaction and prioritize long-term relationships over short-term gains, emphasizing the importance of customer retention and repeat business. A customer-focused approach involves conducting market research, analyzing customer data, and using customer feedback to drive product and service improvements, ensuring that the organization remains responsive to changing customer demands. Organizations that prioritize customer focus also invest in building a customer-centric culture among their employees, with a shared understanding that customer satisfaction is the goal of their business. Customer focus goes beyond meeting the basic needs of customers and involves exceeding customer expectations, providing excellent customer service, and going the extra mile to delight customers with exceptional experiences.

Conclusion: Customer focus is a fundamental proposition in quality management that involves understanding and meeting the needs of customers, building strong

customer relationships, and continuously striving to exceed customer expectations to ensure long-term business success.

Continuous Improvement: Quality gurus thought that in order to remain competitive, organizations must always try to improve their goods, services, and processes. Setting and achieving quality targets, evaluating performance, and continuously finding and implementing improvements are all part of this proposition. The continuous improvement process involves the entire organization and necessitates a collaborative, innovative, and learning culture. Quality improvement activities can take many different forms, such as process changes, product redesign, or personnel training, and are continuing attempts to improve the overall performance of the organization. Continuous improvement, also known as Kaizen or PDCA (Plan-Do-Check-Act), is a philosophy that encourages organizations to constantly seek ways to improve their processes, products, and services in order to achieve higher levels of quality and performance. Continuous improvement involves a mindset of constantly looking for opportunities to eliminate waste, reduce defects, streamline processes, and optimize resources, with the goal of achieving incremental improvements on an ongoing basis. Organizations that embrace continuous improvement encourage employees at all levels to actively participate in identifying and implementing improvement ideas, fostering a culture of innovation and continuous learning. Continuous improvement requires organizations to regularly review and analyze data and metrics to identify areas that need improvement, set targets for improvement, and monitor progress towards those targets. Organizations that practice continuous improvement understand that quality is not a one-time effort, but an ongoing process that requires commitment, dedication, and a willingness to embrace change and adapt to evolving customer needs and market conditions. Continuous improvement also involves learning from mistakes and failures, using them as opportunities for improvement and growth, and implementing corrective actions to prevent recurrence of similar issues in the future. Organizations that adopt a continuous improvement mindset are more agile and adaptable, able to respond quickly to changes in the business environment and stay ahead of the competition by continuously improving their products, services, and processes.

Conclusion: continuous improvement is a core proposition in quality management that emphasizes the need for organizations to continuously seek ways to improve their processes, products, and services, foster a culture of innovation, and strive for

incremental improvements on an ongoing basis to achieve higher levels of quality and performance.

Employee Involvement: Quality experts stressed the need of involving employees in the process of quality improvement. They believed that including employees in quality improvement could lead to higher motivation, job satisfaction, and productivity because employees are a rich source of ideas and feedback. Empowering employees to take responsibility of quality, offering training and support for continuous improvement, and recognizing and rewarding employee contributions to quality improvement efforts are all part of this proposition. Employee involvement can take many forms, such as suggestion programmes, quality circles, or process improvement teams, and is an important component of establishing a quality culture inside the organization. Employee involvement is a key aspect of quality management that recognizes the importance of engaging employees at all levels of the organization in quality improvement initiatives. Organizations that promote employee involvement in quality management empower their employees to contribute their knowledge, skills, and expertise towards identifying and solving quality-related issues, fostering a sense of ownership and accountability among employees. Employee involvement goes beyond just participation in quality improvement teams or programs, but also includes encouraging employees to share their feedback, suggestions, and ideas for improving quality in their day-to-day work. Organizations that prioritize employee involvement in quality management provide training and resources to enhance employees' skills and knowledge related to quality principles, tools, and techniques, enabling them to actively contribute to improving quality in their areas of responsibility. Employee involvement in quality management also promotes teamwork, collaboration, and cross-functional communication, as employees from different departments or functions come together to identify and address quality issues that impact the overall performance of the organization. Organizations that foster a culture of employee involvement in quality management recognize that employees are the frontline experts who possess valuable insights into the challenges and opportunities for quality improvement, and their input and involvement are critical to achieving sustained quality excellence. Employee involvement in quality management also leads to increased employee morale, job satisfaction, and motivation, as employees feel empowered and engaged in contributing towards the organization's quality goals and objectives. Organizations that embrace employee involvement in quality management recognize that employees are not just passive recipients of quality initiatives, but

active participants who can drive meaningful change and improvement in the organization's quality performance.

Conclusion: employee involvement is a crucial proposition in quality management that emphasizes the importance of engaging employees at all levels in identifying, solving, and improving quality-related issues. Organizations that prioritize employee involvement foster a culture of collaboration, empower employees to contribute their knowledge and skills towards quality improvement, and recognize the critical role employees play in achieving sustained quality excellence.

Q2. Maxx Industry has received a major export order. To ensure that its processes work in tandem to conform to the export quality requirements, Maxx wants to formulate and control the business process effectively using SPC techniques. Discuss the major tools of SPC that may help Maxx in achieving its objective.

Answer:

Several SPC technologies can assist Maxx Industry in meeting its goal of successfully creating and controlling business processes to meet export quality requirements. Here are some of the most important tools and how they can help:

1. Control charts: Control charts are one of the most important tools used in Statistical Process Control (SPC). They are used to monitor a process over time and detect any variations or deviations from the expected behavior of the process. A control chart is a graph that displays data points plotted over time, with control limits shown as horizontal lines. The data points represent the measurements taken at specific intervals during the process, and the control limits represent the acceptable range of variation for the process. Control charts are used to distinguish between natural process variations and those caused by special causes or assignable factors. Natural process variations are random and expected, while assignable factors are non-random and may require corrective action. Control charts help Maxx Industry in achieving its objective by providing a visual representation of the process and enabling operators to detect and respond to changes in the process. By monitoring the process over time, Maxx can identify any changes that may affect the quality of the product and take corrective action before any defects occur. In addition to identifying variations in the process, control charts can also help Maxx Industry determine the capability of the process to produce products within

the specified quality limits. This information can be used to improve the process by identifying areas where improvements are needed.

Overall, control charts are a powerful tool that Maxx Industry can use to achieve its objective of formulating and controlling the business process effectively using SPC techniques. They provide a structured approach to monitoring and improving the quality of the product, leading to increased customer satisfaction and improved profitability.

2. Pareto charts: A Pareto chart is a graphical tool used in quality control to identify and prioritize the most frequent or significant problems or causes of problems in a process. The chart is based on the Pareto principle, which states that roughly 80% of effects come from 20% of the causes. The Pareto chart displays data in a bar graph format, with the bars arranged in descending order of frequency or importance. The cumulative percentage of the data is plotted on a secondary vertical axis, making it easy to see the contribution of each item to the overall total. The Pareto chart can help Maxx Industry identify the most common or significant issues in their process and prioritize efforts to address them. This can help them allocate resources more effectively and focus on the areas where improvements are most needed. To create a Pareto chart, Maxx would first collect data on the various causes or issues that affect their process. They would then group the data into categories and count the number of occurrences for each category. The categories can be arranged in descending order of frequency, and the cumulative percentage of the data can be plotted on the secondary axis. By analyzing the Pareto chart, Maxx can identify the most significant causes of problems in their process and prioritize improvements. They can also use the chart to track their progress over time and evaluate the effectiveness of their improvement efforts. Overall, the Pareto chart is a valuable tool that can help Maxx Industry improve the quality of their processes and products.

3. Histograms: Histograms are commonly used in quality control to monitor the variation of a process or a product's characteristics. By plotting the frequency of measurements over time, histograms can identify any changes in the distribution that might indicate a shift or drift in the process. In addition, histograms can also help identify the capability of the process to meet customer specifications by comparing the distribution of the data to the

tolerance limits. Histograms are useful for analyzing and understanding the shape of the distribution of a dataset. They can be used to identify the central tendency, spread, and skewness of the data. The shape of the histogram can provide insights into the underlying data and help identify any outliers or anomalies. histograms are an effective tool for displaying and analyzing the distribution of data and identifying any patterns or anomalies that may be present

4. Scatter plots: Scatter plots are used to identify correlations between two variables. A correlation is a measure of how strongly two variables are related to each other. A positive correlation means that as one variable increases, the other variable also tends to increase. A negative correlation means that as one variable increases, the other variable tends to decrease. By plotting data points on a scatter plot, Maxx can identify any correlation or relationship between two variables, such as the relationship between temperature and defect rates, and take actions to improve process quality and efficiency. Scatter plots can help identify outliers or anomalies in the data, which may indicate errors or other issues in the data collection process. They can also be used to identify trends or patterns in the data over time. For example, a scatter plot of sales data over time can reveal whether sales tend to increase or decrease during certain seasons or under certain conditions. Scatter plots are commonly used in quality control and Six Sigma methodologies to investigate the relationship between two variables that may be causing defects or quality issues in a product or process. By identifying the root cause of these issues, organizations can take steps to improve their products or processes and reduce waste and defects.

5. Flow charts: Flow charts are graphical representations of a process that help identify the steps involved in the process and the relationships between them. By analyzing the flow chart, Maxx can identify areas where the process can be improved and take actions to streamline the process and eliminate waste.

Overall, SPC tools can assist Maxx Industry in meeting its goal of successfully developing and regulating business processes to fulfil export quality standards by offering a disciplined way to analyzing process data and identifying areas for improvement.

Q3. You have been asked by the management of your organization to improve employee productivity. After a thorough investigation, you realize productivity is low due to workplace injuries and illness and there is a need for an ISO standard which is designed to provide an effective set of processes for improving workplace health and safety.

a) What ISO standard would you recommend, explain its benefits?

Answer:

Based on the situation, the ISO standard that would be most relevant and beneficial is ISO 45001:2018 Occupational Health and Safety Management Systems.

ISO 45001 is a globally recognized standard that provides a framework for the development and implementation of an effective occupational health and safety management system. The standard is designed to help organizations of all sizes and industries to identify and control workplace health and safety risks, prevent work-related injuries and ill health, and continually improve their health and safety performance.

Across the world, ISO 45001 is used to provide guidance to the governmental organizations, industry and other stakeholders in order to improve worker safety. The standard provides a framework that can be used in all factories irrespective of their location

By implementing ISO 45001, an organization can benefit in several ways:

a. Improved workplace health and safety: ISO 45001 helps to identify and control workplace hazards, prevent work-related injuries and ill health, and improve overall occupational health and safety performance. This can lead to a safer and healthier workplace for employees, reducing the number of workplace injuries and illnesses.

b. Legal compliance: ISO 45001 provides a framework for complying with relevant occupational health and safety legislation and regulations, reducing the risk of non-compliance and potential legal consequences.

c. Improved productivity: By reducing workplace injuries and illnesses, ISO 45001 can help to improve employee productivity and reduce absenteeism and staff turnover.

d. Improved reputation: Implementing ISO 45001 demonstrates a commitment to employee health and safety, which can improve an organization's reputation and enhance its brand image.

e. Implementation of the ISO 45001 standard is regarded as evidence of an organization's and connected stakeholders' commitment to protecting employees from accidents, injuries, and illnesses.

f. Adoption of this standard aids in decreasing downtime that could be caused by workers being absent due to OH&S hazards.

g. Adoption of the PDCA cycle makes the standard eligible to be applied in the whole management system as well as each individual element of the management system.

Implementing ISO 45001 can help an organization to improve its health and safety performance, reduce workplace injuries and illnesses, and enhance its reputation and competitiveness.

b) Discuss the process of developing a new international standard

Answer:

The steps involved are:
1. Proposal: The proposal for a new standard can come from various sources such as industry associations, government bodies, or individual experts.
2. Preparatory Stage: Following the acceptance of the proposal, a new work item proposal (NWIP) is created, and a project team is formed to develop the standard. The project team consists of professionals from many countries who collaborate to create a draught standard.

3. The Committee Draught (CD). Stage: The draught standard is subsequently distributed to ISO's country bodies for criticism and feedback. The project team examines and responds to the feedback, and a committee draught is created.

4. Draught International Standard (DIS) Stage: The committee draught is distributed again to ISO's national bodies for criticism and feedback. The project team examines and responds to the received comments, and a draught international standard is prepared.

5. FDIS (Final Draught International Standard) Stage: The draught international standard is distributed to ISO's national bodies for final comments and feedback. The project team examines and responds to the received comments, and a final draught international standard is prepared.

6. Publication: Once the final draft international standard is approved by the ISO members, it is published as an international standard.

Throughout the process, there is an emphasis on consensus-building and transparency. The project team works closely with stakeholders to ensure that the standard is relevant, practical, and widely accepted.