

**GE 6757 -TOTAL QUALITY MANAGEMENT
TWO MARKS QUESTIONS & ANSWERS
UNIT I
INTRODUCTION**

1. Define quality. How is quality defined give any two definitions.

Quality is the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs.

$$Q = P/E$$

Q – Quality, P – Performance, E – Expectations.

It is also defined as the degree of excellence a product or service provides.

According to Deming “It is the predictable degree of uniformity, at low cost and suited to the market”. According to Joseph Juran “Quality is fitness for use”. According to Philip B. Crosby “Quality is conformance to requirements.

2. Define TQM.

Total Quality Management is the management approach of an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society.

3. What are the basic concepts that a successful TQM programme requires Top management commitment?

- Focus on the customer
- Effective employee involvement
- Continuous improvement
- Treating suppliers as partners
- Establishing performance measures

4. Mention any four principles of TQM.

- Customers requirements must be first time
- Every time everybody must be involved from all levels and across all functions
- Top management’s participation and commitment is must
- A culture of continuous improvement must be established

5.What are elements of TQM?

I.TQM principles and practices

Leadership

Customer focus

Employment involvement

Supplier partnership

Continuous process improvement

performance measures

II.TQM tools and techniques

Seven tools of quality

New Seven management tools

Six sigma process capability

Benchmarking

FMEA

QFD

6.What is meant by customer retention?

Customer retention is the process of retaining the existing customers.

Importance:

- Over 60% of an organization"s future revenue will come from existing customers
- A 2 % increase in customer retention has an equivalent impact upon profitability as a 10 % reduction in operating costs.
- 91% of the unhappy customers will never purchase goods and services from you again
- It costs 5 times as much to attract a new customer as it costs to keep an old one.

7.What are the dimensions of Quality?

The dimensions of Quality are:

1. Performance – Primary product characteristics such as the brightness of the picture.
2. Features – Secondary characteristics, added features, such as remote control.
3. Conformance – Meeting specifications or industry standards.
4. Reliability – Consistency of performance over time, average time for the unit to fail.
5. Durability – Useful life includes repair.
6. Service – Resolution of problems and complaints, ease of repair.

7. Response – Human to human interface, such as the courtesy of the dealer.

8. What are the barriers to TQM ?

The main barriers to TQM are as follows :

- i. Lack of understanding of the TQM concept
- ii. Absence of visible support from senior & Top management
- iii. Fear of change
- iv. Poor internal communication
- v. Heavy work loads
- vi. Nature of organization

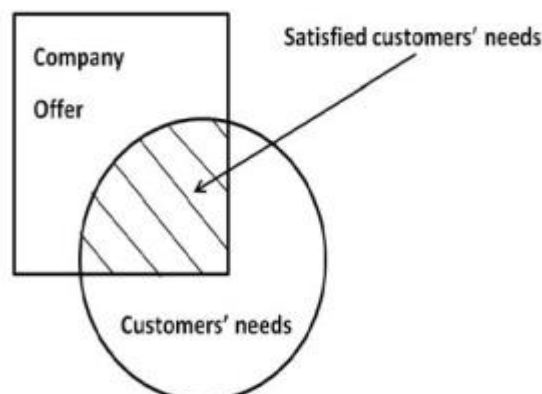
9. What are the categories of quality cost?

Various types of costs associated with Quality are

- Prevention cost
- Appraisal cost
- Internal Failure cost
- External Failure cost

10. What is the relationship between competition and customer focus?

Teboul's model of customer satisfaction Customer needs are represented by circle and square represents products or service offered by the company. Intersection portion denotes customer satisfaction. So it is understood that company should strive for increasing the intersection portion ie, Customer satisfaction.



11. What are the different types of quality statements?

- Vision statement
- Mission statement
- Quality Policy statement

UNIT II

TQM PRINCIPLES

1. What do you mean by strategic planning?

Strategic planning sets the long-term direction of the organization in which it wants to proceed in future.



2. What is 5S's and list its benefits?

The 5S practice is a house keeping technique used to establish and maintain a productive and quality environment in an organization.

SEIRI, SEITON, SEISO, SEIKETSU and SHITSUKE

Benefits:

- Work place become clean and better organized
- Results in good company image and generates more business
- Shop floor and office operations become easier and safer.
- Contribute to productivity ,quality and employee morale

3. How employee involvement can be improved in an organization?

Recognition is a form of employee motivation in which the organization openly acknowledges the positive contribution an individual or team has made to the success of the organization. It may be either in oral or writing praising the deserving employee by presenting certificates or members .They may also be rewarded by cash awards. Reward is something tangible such as cash award to promote desirable behaviour. Reward can be delayed but recognition cannot be delayed & should be on a timely basis.

4.What is supplier partnering?

Supplier partnering is defined as a continuing relationship, between a buying firm and supplying firm, involving a commitment over an extended time period, an exchange of information and acknowledgement of risks and rewards of the relationship.

5.List the characteristics of successful quality leaders.

- Build supplier partnership
- Empower people
- Demonstrate involvement/commitment
- Strive for excellence
- Explain and deploy policy
- Promote teamwork
- Improve communication
- Benchmark continuously
- Establish system
- Encourage collaboration

6.Explain supplier selection.

Suppliers are selected based on their performance in terms of cost, quality and delivery reliability.

7.List the key elements of supplier partnering.

The three key elements for partnering partnering are

1. Long term commitment
2. Trust
3. Shared Vision

8.What do you understand by “supplier rating”?

A supplier rating system, also referred as a scorecard system, is used to obtain an overall rating of supplier performance.

9.What is empowerment?

Empowerment is an environment in which the people have the ability, the confidence and the commitment to take the responsibility and ownership to

improve the process and initiate the necessary steps to satisfy customer requirements within well defined boundaries in order to achieve organizational values and goals.

10. What is performance appraisal and what is the use of performance appraisal?

Performance appraisal is a systematic and objective assessment or evaluation of performance and contribution of an individual.

Uses: To identify employees for salary revision, promotion, transfer, demotion and lay-off To provide useful feedback to the employees and allow them to take corrective measures to improve performance further.

11. What is Kaizen?

Kaizen is a Japanese word that means Continuous Improvement (or) improvement over Improvement. It is the process of continuous improvements in small increments that make the process more efficient, effective, controllable and adequate.

UNIT III

TQM TOOLS AND TECHNIQUES I

1. Why is brainstorming considered as an effective tool?

Brainstorming is a technique used to gather multiple ideas about the given problem. Hence we can arrive on the optimal solution, from the various alternatives.

2. What is scatter diagram?

The scatter diagram is a simple graphical device to depict the relationship between two variables.

Uses:

- The purpose of the scatter diagram is to display what happens to
- one variable when another variable is changed. and how they can be controlled.
- This diagram is used to understand why particular variations occur.

3.What is meant by Failure Mode and Effect Analysis?

The objective of FMEA is to anticipate failures and prevent them from occurring. FMEA prioritizes failures and attempts to eliminate their causes.

4.What are the types of check sheets commonly used?

1. Process distribution check sheet
2. Defective item check sheet
3. Defect location check sheet
4. Defect factor check sheet

5.What is benchmarking? Give an example?

Benchmarking is the process of identifying, understanding and adapting outstanding practices and processes from organizations anywhere in the world to an organization to improve its performance.

Example: Toyota production system is considered as a benchmark for the auto industry.

6.. What are the benefits of bench marking?

1. Creating a culture that values continuous improvement to achieve excellence.
2. Sharing the best practices between benchmarking partners.
3. Prioritizing the areas that need improvement.
4. Enhancing creativity by devaluing the not-invented-here syndrome.

7.What is six sigma? What are the five phases of six sigma process?

Six sigma is similar to Zero Defects (ZD),is a philosophical benchmark or standard of excellence proposed by Philip Crosby. Six sigma strives for perfection. It allows for only 3.4 defects per million opportunities (or 99.99966 percent accuracy)

Five phases of six sigma process:

Define, Measure, Analyse, Improve and control.

8.What are the traditional management tools of quality?

- Flow Chart
- Check Sheet

- Histogram
- Pareto Diagram
- Cause and Effect Diagram
- Scatter Diagram
- Control Chart

9.What are benefits of TPM?

1. To improve equipment effectiveness
2. To achieve autonomous maintenance
3. To plan maintenance
4. To train all staff in relevant maintenance skills.

10.How cause and effect diagram is used in TQM?

An effective tool as part of a problem-solving process is the cause-and-effect diagram, also known as the Ishikawa diagram (after its originator) or fishbone diagram. This technique is useful to trigger ideas and promote a balanced approach in group brainstorming sessions where individuals list the perceived sources (causes) with respect to outcomes (effect).

UNIT IV

TQM TOOLS AND TECHNIQUES II

1.What is “Taguchi’s Quality Loss Function”(TQLF)?

The essence of taguchi’s quality loss function (QLF) concept is that whenever a product deviates from its target performance, it generates a loss to society. This loss is minimal when performance is right on target, but it grows gradually as one deviates from the target.

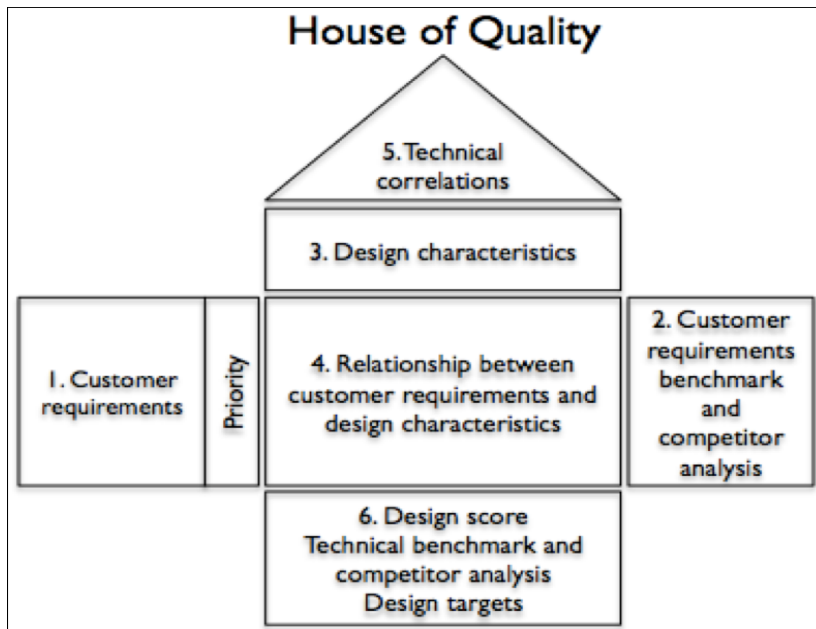
2.Define TPM.

TPM is the systematic execution of maintenance by all employees through small group activities. The dual goals of TPM are zero breakdowns and zero defects.

3.What is meant by “House of quality”?

The primary planning tool used in QFD is the house of quality(HOQ).The house of quality converts the voice of customer into product design characteristic,QFD uses a series of matrix diagrams ,also called „quality tables“that resemble connected houses.

4.What are the parts of house of Quasity?



5.What is process capability?

Process capability may be defined as the minimum spread, of a specific measurement variation which will include 99.7 % of the measurements from the given process” . Process capability(natural tolerance)= 6σ

6.What are the big loss avoided by TQM?

- Breakdowns
- Setup and changeover
- Idling and minor stoppages
- Reduced speed
- Defects and rework
- Start up losses.

7.What is process capability ratio?

Process capability index $C_p = \frac{USL-LSL}{6\sigma}$

Process capability index $C_{pk} = \frac{\min\{(USL - \text{Mean}) \text{ or } (\text{Mean} - USL)\}}{3\sigma}$

8.Write the specific use of np-chart.

- To assess the system's stability
- To determine if you need to stratify the data.
- To analyze the results of process improvements.

9.List the objective of TPM programme.

1. To improve equipment effective
2. To achieve autonomous maintenance
3. To plan maintenance
4. To train all staff in relevant maintenance skills

10.What is the formula for measuring equipment effectiveness?

Overall equipment effectiveness (OEE) =availability*{performance efficiency}*(rate of quality products)

UNIT V

QUALITY SYSTEMS

1. Why is a quality system required?

- It provides an opportunity to increase value to the activities of the organization.
- It improves the performance of processes /activities continually
- It improves customer satisfaction
- It implements statutory and regulatory requirements to product services

2.What are the objectives of ISO 9000 standards?

The objectives of ISO 9000 standards are:

- To achieve, maintain and seek to continuously improve product/service
- To improve the quality of operations to continually meet customers'' and stakeholder''s stated and implied needs.

- To provide confidence to internal management and other employees that quality requirements are being fulfilled and that improvement is taking place.
- To provide confidence to customers and other stakeholders that quality requirements are being achieved in the delivered product.

3. Compare QS 9000 with TS16949 quality system.

- Though both are related to automotive quality system standards, now QS9000 is being replaced by ISO/TS 16949 standards.
- QS 9000 is basically a product approach where as TS 16949 is a process approach.
- The other important difference between QS9000 and ISO/TS 16949 relate to the aspects of customer satisfaction and employee motivation.
- In ISO/TS 16949, there is much focus on documentation and more focus on how the system is performing in achieving customer satisfaction.

5. Explain briefly the Environment management system.

The overall objective of ISO 14000 Environmental management Standard is to encourage environmental protection and pollution prevention while taking into account the economic needs of society.

An EMS meeting the requirements of ISO 14001:2004 is a management tool enabling an organization of any size or type to identify and control the environmental impact of its activities, products or services, and to improve its environmental performance continually, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

6. Differentiate between ISO 9000 and QS 9000.

- The QS 9000 is a set of quality system requirements to help automotive suppliers to ensure that they are meeting/ exceeding customer requirements.

- The QS 9000 standards are very specific to automotive industry, whereas ISO 9000 series of standard can be applied to any organization both (manufacturing and service industries).

7. List out the global benefits of adopting ISO 9000 quality system.

- ISO 9000 quality system provides an opportunity to increase value to the activities of the organization.
- It improves the performance of processes/activities continually
- It ensures the satisfaction of customers
- It enables better management control.

8. Name any two generic ISO standards. Why it is called generic standards?

ISO 9001:2008 specifies requirements for a quality management system where an organization

- Needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and
- Aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

9. What are the core elements of QMS?

- Quality policy.
- Quality objectives.
- Quality manual.
- Organizational structure and responsibilities.
- Data Management.
- Processes - including purchasing.
- Product quality leading to Customer satisfaction.
- Continuous improvement including corrective and preventive action.

10. List out the various product evaluation standards of ISO 14000.

- Environmental Aspects in Product Standards (EAPS)
- Life Cycle Assessment (LCA)
- Environmental Labels and Declarations (ELD)

11. What are the general requirements of quality management system?

- a) determine the processes needed for the quality management system and their application throughout the organization
- b) determine the sequence and interaction of these processes,
- c) determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- d) ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- e) monitor, measure (where applicable), and analyse these processes, and
- f) implement actions necessary to achieve planned results and continual improvement of these processes.