

ST.JOSEPH COLLEGE OF ENGINEERING
NEMILI, SRIPERUMBUDUR
ELECTRONICS AND COMMUNICATION ENGINEERING
GE6757 TOTAL QUALITY MANAGEMENT

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TWO MARK QUESTIONS WITH ANSWERS

UNIT – I

PART: A

1. Define Total Quality?

TQM is an enhancement to the traditional Way of doing business. It is the art of managing the whole to achieve excellence. It is defined both a philosophy and a set of guiding principles that represent the foundation of a continuously improving Organization. It is the application of quantitative methods and human resources to improve all the processes within an organization and exceed customer needs now and in the future. It integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach.

2. What are the Dimensions of Quality?

- Features
- Conformance
- Reliability
- Durability
- Service
- Response
- Aesthetics and
- Reputation

3. Give the Basic Concepts of TQM?

- A committed and involved management to provide long-term Top-to-bottom organizational support.

- An unwavering focus on the customer, both internally and externally.
- Effective involvement and utilization of the entire work force.
- Continuous improvement of the business and production process.
- Treating suppliers as partners.

4. Give the Principles of TQM?

- Constancy of purpose: short range and long range objectives aligned
- Identify the customer(s); Customer orientation
- Identification of internal and external customers
- Continuous improvement
- Workflow as customer transactions

5. Give some principles of services quality

- empathy
- trust; i.e. expertise, integrity, courtesy
- responsiveness
- tangible product attractiveness (curb appeal)
- reliability, on time, no interruptions
- Customer orientation to child care services, a marketing perspective
- Barriers that exist to a customer orientation

6. Give the Obstacles associated with TQM Implementation?

- Lack of management commitment
- Inability to change organizational culture •Improper planning
- Lack of continuous training and education
- Incompatible organizational structure and isolated individuals and departments
- Ineffective measurement techniques and lack of access to data and results.
- Paying inadequate attention to internal and external customers.
- Inadequate use of empowerment and teamwork.

7. Give the Analysis Techniques for Quality Costs?

- i. Trend Analysis, and ii. Pareto Analysis

8. Define Quality Costs?

Quality Costs are defined as those costs associated with the non achievement of product or service quality as defined by the requirements established by the organization and its contracts with customers and society.

9. Give the primary categories of Quality cost?

- Preventive cost category
- Appraisal cost category
- Internal failure cost category
- External failure cost category

10. Give the typical cost bases?

- Labor
- Production
- Unit
- Sales

11. How will you determine the optimum cost?

- Make comparison with other organizations
- Optimize the individual categories
- Analyze the relationships among the cost categories

12. State the Quality Improvement Strategy?

- Reduce failure costs by problem solving
- Invest in the “right” prevention activities
- Reduce appraisal costs where appropriate and in a statistically sound manner
- continuously evaluate and redirect the prevention effort to gain further Quality improvement.

13. Define Quality Planning?

A quality plan sets out the desired product qualities and how these are assessed and define the most significant quality attributes. It should define the quality assessment process. It

should set out which organizational standards should be applied and, if necessary, define new standards.

14. Give the Objectives of TQM?

.To develops a conceptual understanding of the basic principles and methods associated with TQM;

- To develop an understanding of how these principles and methods have been put into effect in a variety of organizations;

- To develop an understanding of the relationship between TQM principles and the theories and models studied in traditional management;

- To do the right things, right the first time, every time.

15. What is needed for a leader to be effective?

To be effective, a leader needs to know and understand the following:

- People, paradoxically, need security and independence at the same time.

- People are sensitive to external rewards and punishments and yet are also strongly self-motivated.

- People like to hear a kind word of praise.

- People can process only a few facts at a time; thus, a leader needs to keep things simple.

- People trust their gut reaction more than statistical data.

- People distrust a leader's rhetoric if the words are inconsistent with the leader's actions.

16. What is the important role of senior management?

- Listening to internal and external customers and suppliers through visits, focus groups and surveys.

- Communication.

- To drive fear out of the organization, break down barriers, remove system roadblocks, anticipate and minimize resistance to change and in general, change the culture.

17. What are the general duties of a quality council?

- (i) Develop, with input from all personnel, the core values, vision statement, mission statement, and quality policy statement.

- (ii) Develop the strategic long-term plan with goals and the annual quality improvement program with objectives.

- (iii) Create the total education and training plan.

- (iv) Determine and continually monitor the cost of poor quality.

- (v) Determine the performance measures for the organization, approve those for the functional areas, and monitor them.

- (vi) Continually, determine those projects that improve the processes, particularly those that affect external and internal customer satisfaction.

18. What does a typical meeting agenda contain after establishing the TQM?

- Progress report on teams

- Customer satisfaction report

- Progress on meeting goals

- Recognition dinner

- Benchmarking report

19. What are the various quality statements?

Vision Statement, Mission Statement, and Quality Policy Statement

20. Give the basic steps to strategic quality planning?

•Customer needs •Customer positioning •Predict the future •Gap analysis •Closing the gap •Alignment •Implementation

PART – B

1. What is quality cost? Explain the techniques used for Quality cost.
2. Explain the principles of TQM.
3. Explain Deming Philosophy.
4. Explain the barriers to TQM implementation.
5. Explain the concept of customer satisfaction.
6. Describe the evolution of Total Quality Management.
7. Explain the dimensions of quality.
8. Explain the services quality dimensions.
9. Discuss different methods of customer complaints.
10. Describe TQM framework in detail.

UNIT- II

PART – A

1. What is a mission statement?

The mission statement answers the following questions: who we are, who are the customers, what we do, and how we do it.

2. What is a vision statement?

The vision statement is a declaration of what an organization should look like five to ten years in a future.

3. What are the important factors that influenced purchases?

- Performance
- Features
- Service
- Warranty
- Price
- Reputation

4. Give the need for a feedback in an organization?

- Discover customer dissatisfaction.
- Discover relative priorities of quality.
- Compare performance with the competition.

- Identify customer's needs.

5. List the tools used for feedback?

- Comment cards
- Surveys
- Focus groups
- Toll-free telephone lines
- Customer visits
- Report cards
- Employee feedback
- American Customer Satisfaction Index

6. What are the activities to be done using customer complaints?

- Investigate customer's experience both positive and negative, and then acting on it promptly.
- Develop procedures for complaint resolution.
- Analyze complaints.
- Work to identify process and material variations and then eliminate the root cause.
- When a survey response is received, a senior manager should contact the
- Customer and strive to resolve the concern.
- Establish customer satisfaction measures and constantly monitor them.

- Communicate complaint information, as well as the results of all investigations and solutions, to all people in the organization.

7. What are the elements of customer service?

- Organization
- Customer care
- Communication
- Front-line people
- Leadership

8. Define Customer Retention?

Customer retention represents the activities that produce the necessary customer satisfaction that creates customer loyalty, which actually improves the bottom line. It is the nexus between the customer satisfaction and the bottom line.

9. Define Employee Involvement?

Employee involvement is a means to better meet the organization's goals for quality and productivity at all levels of an organization.

10. State Maslow's Hierarchy of Needs?

- *Survival
- *Security
- *Social
- *Esteem

*Self- actualization

11. State Frederick Herzberg's Two-factor theory?

Herzberg found that people were motivated by recognition, responsibility, achievement and the work itself.

12. What does an employee want?

- Interesting work
- Appreciation
- Involvement
- Job security
- Good pay
- Promotion/growth
- Good working conditions
- Loyalty to employees
- Help with personal problems
- Tactful discipline

13. What are the concepts to achieve a motivated work force?

- a. Know thyself
- b. Know your employees
- c. Establish a positive attitude

- d. Share the goals
- e. Monitor progress
- f. Develop interesting work
- g. Communicate effectively
- h. Celebrate success

14. Define Empowerment?

Empowerment means invest people with authority. Its purpose is to tap the enormous reservoir of creativity and potential contribution that lies within every worker at all levels. Empowerment is an environment in which people have the ability, the confidence, and the commitment to take the responsibility and ownership to improve the process and to initiate the necessary steps to satisfy customer requirements within well- defined boundaries in order to achieve organizational values an goals.

15. What are the three conditions necessary to create the empowered environment?

- Everyone must understand the need for change.
- The system needs to change for the new paradigm
- The organization must enable its employees.

16. What are the types of teams?

- Process improvement team
- Cross-functional team
- Natural work teams
- Self-directed/self-managed work teams

17. What are the characteristics of successful teams?

- Sponsor
- Team charter
- Team composition
- Training
- Ground rules
- Clear objectives
- Accountability
- Well-defined decision procedures
- Resources •Trust
- Effective problem solving
- Open communications
- Appropriate leadership
- Balanced participation
- Cohesiveness

18. What are the decision-making methods?

- Non decision
- Unilateral decision

- Handclasp decision
- Minority-rule decision
- Majority- rule decision
- Consensus

19. What are the stages of team development?

- Forming
- Storming
- Norming
- Performing
- Adjourning

20. Give some common team problems?

- Floundering
- Overbearing participants
- Dominating participants
- Reluctant participants
- Unquestioned acceptance of opinions as facts
- Rush to accomplish
- Attribution

- Discounts and “plops”

- Wanderlust: digression and tangents

PART – B

1. Explain Juran trilogy for Continuous Process Improvement.
2. Explain the PDSA cycle.
3. Explain Kaizen principle.
4. Explain how the employee will be involved in doing a process.
5. Briefly explain the concept of quality leadership.
6. Describe the theories of employee motivation.
7. Explain the characteristics and benefits of employee involvement.
8. Explain 5S housekeeping in details.
9. Illustrate the supplier partnering with examples.
10. Describe the supplier rating process in detail.

UNIT- III

PART – A

1 Define Statistics?

Statistics is defined as the science that deals with the collection, tabulation, analysis, interpretation, and presentation of quantitative data.

2. What is a measure of central tendency?

A measure of central tendency of a distribution is a numerical value that describes the central position of the data or how the data tend to build up in the center. There are three measures in common in use in quality viz, the average, the median and the mode.

3. What is Measures of dispersion?

Measures of dispersion describe how the data are spread out or scattered on each side of the central value. The measures of dispersion used are range and standard deviation.

4. What is a normal curve?

The normal curve is a symmetrical, unimodal, bell-shaped distribution with the mean, median and mode having the same value.

5. What is the use of the control chart?

The control chart is used to keep a continuing record of a particular quality characteristic. It is a picture of process over time.

6. Give the objectives of the attribute charts?

- Determine the average quality level.
- Bring to the attention of management any changes in the average.

- Improve the product quality.
- Evaluate the quality performance of operating and management personnel.
- Determine acceptance criteria of a product before shipment to the customer.

7. Define Six Sigma Problem Solving Method?

Define - improvement opportunity with an emphasis on increasing customer satisfaction.
 Measure - determine process capability (C_p / C_{pk}) & dpmo (defects per million opportunities).
 Analyze - identify the vital few process input variables that affect key product output variables (“Finding the knobs”).
 Improve - Make changes to process settings, redesign processes, etc. to reduce the number of defects of key output variables.
 Control - Implement process control plans, install real-time process monitoring tools, and standardize processes to maintain levels.

8. What are the new seven management tools?

- i. Affinity Diagram
- ii. Interrelationship Digraph
- iii. Tree Diagram
- iv. Matrix Diagram
- v. Prioritization Matrices
- vi. Process Decision Program Chart
- vii. Activity Network diagram

9. Give the seven tools of quality?

- Pareto Diagram
- Process Flow Diagram

- Cause-and-Effect Diagram

- Check Sheets

- Histogram

- Control Charts

- Scatter Diagrams

10. Give the usage of C&E diagrams?

- Analyze actual conditions for the purpose of product or service quality improvement, more efficient use of resources, and reduced costs.

- Eliminate conditions causing nonconformities and customer complaints.

- Standardize existing and proposed operations.

- Educate and train personnel in decision-making and corrective-action activities.

11. Define Six Sigma?

Six-Sigma is a business process that allows organizations to drastically improve their bottom line by designing and monitoring every day business activities in ways that minimize waste and resources while increasing customer satisfaction. It is achieved through continuous process measurement, analysis & improvement.

12. What are the various histogram shapes?

- * Symmetrical
- * Skewed right
- * Skewed left
- * Peaked
- * Flat
- * Bimodal
- * Plateau distribution
- * Comb distribution
- * Double peaked distribution

13. Differentiate Population & Sample?

Population represents the mathematical world and Sample represents the real world. A population frequency distribution is represented by a smooth curve whereas a sample frequency distribution is represented by a histogram.

14. Give the sources of variation?

Equipment

Material Environment Operator

15. Define Run chart?

A run chart is a very simple technique for analyzing the process in the development stage or, for that matter, when other charting techniques are not applicable.

16. Define Control chart?

Control chart is a means of visualizing the variations that occur in the central tendency and the dispersion of a set of observations. It is a graphical record of the quality of a particular characteristic.

17. What are the various patterns of scatter diagrams?

- Positive correlation
- Negative correlation
- No correlation
- Negative correlation may exist
- Correlation by stratification
- Curvilinear relationship

18. What is the procedure for constructing the tree diagram?

Choose an action oriented objective statement from the interrelationship diagram, affinity diagram, brainstorming, team mission statement, and so forth. Using brainstorming, choose the major headings. Generate the next level by analyzing the major headings.

19. Give at least five standard formats of matrix diagram?

L- shaped

T-shaped

Y-shaped

C-shaped

X-shaped

20. What are the benefits of an activity network diagram?

A realistic timetable determined by the users. Team members understand the role in the overall plan. Bottlenecks can be discovered and corrective action taken. Members focus on the critical tasks.

PART – B

1. Explain the QC or SPC tools.
2. Explain the Seven Management Tools.
3. Plot the control chart for variables and attributes.
4. Explain the concepts of Six Sigma.
5. Explain different types of flow charts with illustrations.

6. Explain the types of benchmarking.
7. Describe different types of histograms with its applications.
8. Explain U Chart and C Chart with illustrations.
9. Explain new management tools on quality.
10. Explain the causes of variations in control charts.

UNIT- IV

PART – A

1. Define Benchmarking?

Benchmarking is a systematic method by which organizations can measure themselves against the best industry practices. The essence of benchmarking is the process of borrowing ideas and adapting them to gain competitive advantage. It is a tool for continuous improvement.

2. Enumerate the steps to benchmark?

- a) Decide what to benchmark
- b) Understand current performance
- c) Plan
- d) Study others
- e) Learn from the data
- f) Use the findings

3. What are the types of benchmarking?

- i. Internal
- ii. Competitive
- iii. Process

4. What is a QFD?

Quality Function Deployment is a planning tool used to fulfill customer expectations. It is a disciplined approach to product design, engineering, and production and provides in-depth evaluation of a product.

5. What are the benefits of QFD?

- i. Customer driven
- ii. Reduces implementation time
- iii. Promotes teamwork
- iv. Provides documentation

6. What are the steps required to construct an affinity diagram?

- i. Phrase the objective
- ii. Record all responses
- iii. Group the responses
- iv. Organize groups in an affinity diagram

7. What are the parts of house of quality?

- i. Customer requirements
- ii. Prioritized customer requirements
- iii. Technical descriptors
- iv. Prioritized technical descriptors

v. Relationship between requirements and descriptors

vi. Interrelationship between technical descriptors

8. How will you build a house of quality?

a) List customer requirements

b) List technical descriptors

c) Develop a relationship matrix between WHATs and HOWs\

d) Develop an interrelationship matrix between HOWs

e) Competitive assessments

f) Develop prioritized customer requirements

9 .Define FMEA?

Failure Mode Effect Analysis is an analytical technique that combines the technology and experience of people in identifying foreseeable failure modes of a product or process and planning for its elimination.

10. What are the stages of FMEA?

1. Specifying possibilities

2. Quantifying risk

3. Correcting high risk causes

4. Revaluation of risk

11. What are the goals of TPM?

The overall goals of Total Productive Maintenance, which is an extension of TQM are

- i. Maintaining and improving equipment capacity
- ii. Maintaining equipment for life
- iii. Using support from all areas of the operation
- iv. Encouraging input from all employees
- v. Using teams for continuous improvement

12. Give the seven basic steps to get an organization started toward TPM?

- a) Management learns the new philosophy
- b) Management promotes the new philosophy
- c) Training is funded and developed for everyone in the organization
- d) Areas of needed improvement are identified
- e) Performance goals are formulated
- f) An implementation plan is developed
- g) Autonomous work groups are established

13. What are the major loss areas?

- i. Planned downtime
- ii. Unplanned downtime
- iii. Idling and minor stoppages
- iv. Slow-downs
- v. Process nonconformities

vi. Scrap

14. What are the generic steps for the development and execution of action plans in benchmarking?

“ Specify tasks.

“ Sequence tasks.

“ Determine resource needs.

“ Establish task schedule.

“ Assign responsibility for each task.

“ Describe expected results.

“ Specify methods for monitoring results.

15. What are the phases of QFD process?

i. Product planning

ii. Part development

iii. Process planning

iv. Production planning

16. What are the several types of FMEA?

- Design FMEA

- Process FMEA

- Equipment FMEA

- Maintenance FMEA
- Concept FMEA
- Service FMEA
- System FMEA
- Environment FMEA etc.

17. Define TPM?

Total = All encompassing by maintenance and production individuals Working together.

Productive = Production of goods and services that meet or exceed customer's Expectations.

Maintenance = Keeping equipment and plant in as good as or better than the original Condition at all times.

18. What are the three key elements to a partnering relationship?

- ♣ Long-term commitment
- ♣ Trust
- ♣ Shared vision

19. What are the three types of sourcing?

Sole sourcing

Multiple sourcing

single sourcing

20. What are the ten conditions for the selection and evaluation of suppliers?

I. The supplier understands and appreciates the management philosophy of the organization.

II. The supplier has a stable management system.

III. The supplier maintains high technical standards and has the capability of dealing with future technological innovations.

IV. The supplier can supply precisely those raw materials and parts required by the Purchaser, and those supplied meet the quality specifications.

V. The supplier has the capability to produce the amount of production needed or can attain that capability.

VI. There is no danger of the supplier breaching corporate secrets.

VII. The price is right and the delivery dates can be met. In addition, the supplier is easily accessible in terms of transportation and communication.

VIII. The supplier is sincere in implementing the contract provisions.

IX. The supplier has an effective quality system and improvement program such as ISO/QS 9000.

X. The supplier has a track record of customer satisfaction and organization credibility.

PART – B

1. Explain the Bench marking Process and reasons to Benchmark.

2. Explain the QFD process.

3. Explain the House of Quality in Quality Function Deployment.

4. What is FMEA? Explain the stages of FMEA.
5. Explain house of quality matrix in detail.
6. Describe Taguchi quality loss function.
7. Explain twelve steps for TPM Development.
8. Illustrate different performance indicators.
9. Explain different techniques of performance measure presentation.
10. Explain responsibilities of members of six sigma organizations.

UNIT- V

PART – A

1. Give the ISO 9000 Series of Standards?

- ISO 9000, “Quality Management and Quality Assurance Standards Guidelines for Selection and Use”.

- ISO 9001, “Quality Systems — Model for Quality Assurance in Design, Development, Production, Installation & Servicing”.

- ISO 9002, “Quality Systems — “Model for Quality Assurance in Production, Installation & Servicing”.

- ISO 9003, “Quality Systems — “Model for Quality Assurance in Final Inspection and Test”.

- ISO 9004-1, “Quality Management and Quality System Elements — Guidelines”.

2. What is the need for ISO 9000?

ISO 9000 is needed to unify the quality terms and definitions used by

Industrialized nations and use terms to demonstrate a supplier’s capability of controlling its processes.

3. Give some other quality systems?

i. QS-9000

ii. TE-9000

iii. AS9000

4. Give the objectives of the internal audit?

- a) Determine the actual performance conforms to the documented quality systems.
- b) Initiate corrective action activities in response to deficiencies.
- c) Follow up on noncompliance items of previous audits.
- d) Provide continued improvement in the system through feedback to management.
- e) Cause the auditee to think about the process, thereby creating possible improvements.

5. What are the requirements of ISO 14001?

- i. General requirements
- ii. Environmental policy
- iii. Planning
- iv. Implementation and operation
- v. Checking and corrective action
- vi. Management review

6. What are the benefits of ISO 14000?

- Facilitate trade and remove trade barriers
- Improve environmental performance of planet earth
- Build consensus that there is a need for environment management and a common terminology for EMS.
- Assuring customers of a commitment to environmental management

- Meeting customer requirements
- Maintaining a good public / community relations image
- Satisfying investor criteria and improving access to capital
- Obtaining insurance at reasonable cost
- Increasing market share that results from a competitive advantage • Reducing incidents that result in liability
- Improving defense posture in litigation
- Conserving input materials and energy
- Facilitating the attainment of permits and authorization
- Improving industry/government relations

7. What are the four elements for the checking & corrective action of ISO 14001?

- a) Monitoring and measuring
- b) Nonconformance and corrective and preventative action c) Records
- d) EMS audit

8. What are the seven elements for the implementation & operations of ISO 14001?

- a) Structure and responsibility
- b) Training, awareness and competency
- c) Communication
- d) EMS documentation

- e) Documentation control
- f) Operational control
- g) Emergency preparedness and response

9. What are the four elements for the planning of ISO 14001?

- a) Environmental aspects
- b) Legal and other requirements
- c) Objectives and targets
- d) Environmental Management Programs

10. Give the types of Organizational Evaluation Standards?

- Environmental Management System
- Environmental Auditing
- Environmental Performance Evaluation

11. Give the types of Product Evaluation Standards?

- Environmental Aspects in Product Standards
- Environmental Labeling
- Life-Cycle Assessment

12. Define Quality Audits?

Quality Audits examine the elements of a quality management system in order to evaluate how well these elements comply with quality system requirements.

13. Analyze TQM?

Total = Made up of the whole.

Quality = Degree of excellence a product or service provides.

Management = Act, art or manner of handling, controlling, directing etc.

14. What are the benefits of ISO?

- Fewer on-site audit by customers.
- Increased market share.
- Improved quality, both internally and externally.
- Improve product and service quality levels from suppliers.
- Greater awareness of quality by employees.

15. What are the methods of actual audit?

- i. Examination of documents
- ii. Observation of activities
- iii. Interviews

16. What is a quality policy?

The Quality Policy is a guide for everyone in the organization as to how they should provide products and service to the customers.

17. What are the common characteristics of quality policy?

- Quality is first among equals.
- Meet the needs of the internal and external customers.
- Equal or exceed the competition.
- Continually improve the quality.
- Include business and production practices.
- Utilize the entire work force.

18. What are the common barriers to team progress?

- Insufficient training
- Incompatible rewards and compensation
- First-line supervisor resistance
- Lack of planning
- Lack of management support
- Access to information systems
- Lack of union support

19. Give the steps involved in training process

- Make everyone aware of what the training is all about.
- Get acceptance.

- Adapt the program.

- Adapt to what has been agreed upon.

20. Define Recognition and Reward

Recognition is a form of employee motivation in which the organization publicly acknowledges the positive contributions an individual or team has made to the success of the organization. Reward is something tangible to promote desirable behavior. Recognition and reward go together to form a system for letting people know they are valuable members of the organization.

PART – B

1. Explain the elements of ISO 9000:2000.
2. Explain the implementation and documentation of Quality System.
3. Explain the requirements of ISO 14000.
4. Explain the Benefits of ISO 14000.
5. Discuss about ISO 9000:2000 Quality Systems.
6. Why is ISO 9000 important? Explain briefly about the contents of the same.
7. Explain the steps in implementation of Quality system.
8. Explain the clauses of ISO 9001 in detail.
9. Describe the needs and benefits of ISO 9000 Certifications.
10. Explain Automotive Quality Management System in details.