UNIT I INTRODUCTION

1. Define quality.
   (i) Quality is defined as the predictable degree of uniformity and dependability, at low cost suited to the market. (Deming).
   (ii) Quality is defined as fitness for use (Juran).
   (iii) Quality is defined as conformance to requirements (Crosby).
   (iv) Quality is totality of the characteristics of entity that bear on its ability to satisfy stated and implied needs (ISO).

2. Define Quality?
   Quality = Performance x Expectations

3. 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.

4. Give the Basic Concepts of TQM?
   * A committed and involved management to provide long-term top-to-bottom organizational support.
   * An unwavering focuses 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.
   * Establish performance measures for the processes.

5. List the dimensions of quality.
   The dimensions of quality are:
   1. Performance
   2. Futures
   3. Conformance
   4. Reliability
   5. Durability
   6. Service
   7. Response
   8. Aesthetics and
   9. Repetition.

6. What are the three components of the Juran Trilogy?
   The three components of the Juran Trilogy are
   i. Planning
   ii. Control
   iii. Improvement
7. What are the six basic concepts that a successful TQM programme requires?
The six basic concepts that a successful TQM programme requires
1. Top management commitment
2. Focus on the customer
3. Effective employee involvement
4. Continuous improvement
5. Treating suppliers as partners and

8. What are the pillars of TQM?
The four pillars of TQM are:
1. Problem solving discipline
2. Interpersonal skills
3. Teamwork and
4. Quality improvement process

9. Give the Objectives of TQM?
a. To develop a conceptual understanding of the basic principles and methods associated with TQM;
b. To develop an understanding of how these principles and methods have been put into effect in a variety of organizations;
c. To develop an understanding of the relationship between TQM principles and the theories and models studied in traditional management;
d. To do the right things, right the first time, every time.

10. Give the Quality Hierarchy?
1. Inspection
2. Quality Control (QC)
3. Quality Assurance (QA)
4. Total Quality Management
Inspect products.
Detection
Finding & Fixing Mistakes.

11. Tabulate the tangible and intangible benefits of TQM.
tangible Benefits
• Improved product quality
• Improved productivity
• Reduced quality costs
• Increased market and customers
• Increased profitability
• Reduced employee grievances
Intangible Benefits
• Improved employee participation
• Improved teamwork
• Improved working relationships
• Improved customer satisfaction
• Improved communication
• Enhancement of job interest
• Enhanced problem-solving capacity
• Better company image
UNIT-2 TQM PRINCIPLES

1. Who are internal and external customers?
The customers inside the company are called internal customers, whereas the customers outside the company are called external customers.

2. What are the customer’s perceptions on quality?
The six important customer’s perceptions are:
   (i) Performance
   (ii) Features
   (iii) Service
   (iv) Warranty
   (v) Price and
   (vi) Reputation.

3. List the various tools used for collecting customer complaints.
The various tools used are:
   1. Comment card
   2. Customer questionnaire
   3. Focus groups
   4. Toll-free telephone numbers
   5. Report cards
   6. The Internet and computer etc.

4. What is meant by customer retention?
Customer retention is the process of retaining the existing customers.

5. What is motivation?
Motivation means a process of stimulation people to accomplish desired goals.

6. What are the Maslow’s basic needs?
Maslow’s basic needs are:
   1. Physiological
   2. Safety
   3. Society
   4. Esteem and
   5. Self-actualization needs.

7. What are physiological needs?
Physiological needs are the biological needs required to preserve human life. These needs include needs for food, clothing and shelter.
8. List the Herzberg’s motivators and dissatisfies.

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<th>Motivator factors</th>
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9. Define empowerment. (Au Nov 05)
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 initiate the necessary steps to satisfy customers requirements within well defined boundaries in order to achieve organizational values and goals.

10. What are the conditions necessary for empowerment?
The conditions required are:
1. Everyone must understand the need for change.
2. The system needs to change to the new paradigm.
3. The organization must provide information, education and still to its employees.

11. Define team and teamwork.
A team can be defined as a group of people working together to achieve common objectives or goals.
Teamwork is the cumulative actions of the team during which each member of the team subordinates his individual interests and opinions to fulfill the objectives or goals of the group.

12. List the different types of teams.
The different types of teams are
1. Process improvement team
2. Cross-functional team
3. Natural work team and
4. Self-directed work team.

13. Name different members in a team.
The different members in a team are
1. Team leader
2. Facilitator
3. Recorder
4. Timekeeper and 5. Member
14. 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.

15. 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.

16. Give the basic steps to strategic quality planning?
i. Customer needs
ii. Customer positioning
iii. Predict the future
iv. Gap analysis
v. Closing the gap
vi. Alignment
vii. Implementation

17. What is meant by recognition in an organization?
Recognition is a process whereby management shows acknowledgement of a employee’s outstanding performance.

18. Classify rewards.
1. Intrinsic rewards: These are related to feelings of accomplishment or selfworth.
2. Extrinsic rewards: These are related to pay or compensation issues.

19. What is performance appraisal? (Au June 06)
Performance appraisal is a systematic and objective assessment or evaluation of performance and contribution of an individual.

20. List four common barriers to team progress.
The four common barriers to team progress
1. Insufficient training
2. Incompatible rewards and compensation
3. Lack of management support
21. Give the steps involved in training process?
The steps involved in training process are
1. Make everyone aware of what the training is all about.
2. Get acceptance.
3. Adapt the program.
4. Adapt to what has been agreed upon.

22. 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.

23. What are the types of appraisal formats?
The types of appraisal formats are
i. Ranking
ii. Narrative
iii. Graphic
iv. Forced choice

24. What are the benefits of employee involvement?
The benefits of employee involvement are
Employee Involvement improves quality and increases productivity because
1. Employees make better decisions using their expert knowledge of the Process.
2. Employees are more likely to implement and support decisions they had a part in making.
3. Employees are better able to spot and pinpoint areas for improvement.

25. What are the basic ways for a continuous process improvement?
The basic ways for a continuous process improvement are
1. Reduce resources
2. Reduce errors
3. Meet or exceed expectations of downstream customers
4. Make the process safer
5. Make the process more satisfying to the person doing it.

26. What are the three components of the Juran Trilogy?
The three components of the Juran Trilogy are
i. Planning
ii. Control
iii. Improvement

27. What are the steps in the PDSA cycle?
The steps in the PDSA cycle are
The basic Plan-Do-Study-Act is an effective improvement technique.
1. Plan carefully what is to be done
2. Carry out the plan
3. Study the results
4. Act on the results by identifying what worked as planned and what didn’t.
28. What are the phases of a Continuous Process Improvement Cycle?
The phases of a Continuous Process Improvement Cycle are
a) Identify the opportunity
b) Analyze the process
c) Develop the optimal solutions
d) Implement
e) Study the results
f) Standardize the solution
g) Plan for the future

29. What are the three key elements to a partnering relationship?
The three key elements to a partnering relationship are
i. Long-term commitment
ii. Trust
iii. Shared vision

30. What are the objectives of Performance measures?
The objectives of Performance measures are
i. Establish baseline measures and reveal trends.
ii. Determine which processes need to be improved.
iii. Indicate process gains and losses.
iv. Compare goals with actual performance.
v. Provide information for individual and team evaluation.
vi. Provide information to make informed decisions.
vii. Determine the overall performance of the organization.

31. What are the characteristics used to measure the performance of a particular process?
The characteristics used to measure the performance of a particular process are
i. Quantity
ii. Cost
iii. Time
iv. Accuracy
v. Function
vi. Service
vii. Aesthetics

32. Define 5S?
5S Philosophy focuses on effective workplace organization and standardized work procedures. 5S simplifies your work environment, reduces waste and non-value activity while improving quality, efficiency, and safety.
Sort – (Seiri) the first S focuses on eliminating unnecessary items from the workplace.
Set in Order (Seiton) is the second of the 5Ss and focuses on efficient and effective storage methods.
Shine: (Seiso) Once you have eliminated the clutter and junk that has been clogging your work areas and identified and located the necessary items, the next step is to thoroughly clean the work area.
Standardize: (Seiketsu) Once the first three 5S’s have been implemented, you should
concentrate on standardizing best practice in your work area.
Sustain: (Shitsuke) This is by far the most difficult S to implement and achieve.
Once fully implemented, the 5S process can increase morale, create positive
impressions
on customers, and increase efficiency and organization.

33. What is a Kaizen?
Kaizen is a Japanese word for the philosophy that defines management’s role in
continuously
encouraging and implementing small improvements involving everyone. It is the
process of
continuous improvement in small increments that make the process more efficient,
effective, under control and adaptable.
UNIT III TQM TOOLS & TECHNIQUES I

1. Give the seven tools of quality?
   i. Pareto Diagram
   ii. Process Flow Diagram
   iii. Cause-and-Effect Diagram
   iv. Check Sheets
   v. Histogram
   vi. Control Charts
   vii. Scatter Diagrams

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

3. 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.

4. 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.

5. 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.

6. 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.

7. Give the objectives of the attribute charts?
   i. Determine the average quality level.
   ii. Bring to the attention of management any changes in the average.
   iii. Improve the product quality.
   iv. Evaluate the quality performance of operating and management personnel.
   v. Determine acceptance criteria of a product before shipment to the customer.

8. Define Six Sigma Problem Solving Method?
   Define - improvement opportunity with an emphasis on increasing customer satisfaction.
   Measure - determine process capability (Cp/ Cpk) & 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, standardize processes to maintain levels.
9. 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

10. 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.

11. 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

12. What are the types of benchmarking?
i. Internal
ii. Competitive
iii. Process

13. What are the four basic steps included in SPC?
The four basic steps included in SPC are
a. Measuring the process
b. Eliminating variances in the process to make it consistent.
c. Monitoring the process.
d. Improving the process to its best target value.

14. Mention the seven basic tools involved in statistic quality control.
The seven tools involved in statistical quality control. They are,
a. Pareto diagram
b. Check sheet
c. Cause and effect diagrams
d. Scatter diagram
e. Histogram
f. Control charts
g. Graphs

15. What is Pareto chart?
A Pareto chart is a special form of a bar graph and is used to display the relative importance of problems or conditions.
16. Give some applications of Pareto chart.
The applications of Pareto chart are,
a. Focusing on critical issues by ranking them in terms of importance and frequency (Example: which course causes the most difficulty for students?; which problem with product X is most significant to our customers?)
b. Prioritizing problems or causes to efficiently initiate problem solving (Example: which discipline problems should be tackled first? or what is the most frequent complaint by parents, regarding the school? solution of what production problem will improve quality most?)

17. What is the use of SPC?
SPC is used to monitor the consistency of processes used to manufacture a product as designed.

The check sheet is a data gathering and interpretation tool.
A check sheet is used for,
a. Distinguishing between fact and opinion (Example: How does the community perceive the effectiveness of the school in preparing students for the world of work?)
b. Gathering data about how often a problem is occurring? (Example: How often are students missing classes?)
c. Gathering data about the type of problem occurring. (Example: What is the most common type of word processing error created by the students—grammar, punctuation, transposing letter etc.?)

19. What are the uses of cause and effect diagram?
A cause and effect diagram is used for,
a. Identifying potential causes of a problem or issue in an orderly way. (Example: why has membership in the band decreased? Why isn’t the phone being answered on time? Why is the production process suddenly producing so many defects?)
b. Summarizing major causes under four categories. (Example: People, machines, methods and materials or policies, procedures, people and plant.)

20. What is scatter diagram?
A scatter diagram is used to interpret data by graphically displaying the relationship between two variables.
21. List some applications of scatter diagram.
The applications of scatter diagram
a. Validating ‘hunches’ about a cause-and-effect relationship between types of variables (examples: I wonder if students who spend more time watching TV having higher or lower average GPA’s? IS there a relationship between the production speed of an operator and the number of defective parts made? Is there relationship between typing speed in WPM and errors made?)
b. Displaying the direction of the relationship (positive negative, etc).
(Examples: will test scores increase or decrease if the students spend more time in study hall? Will increasing assembly line speed, increase or decrease the number of defective parts made? Do faster typists make more or fewer typing errors?)
c. Defective parts produced? How strong is the relationship between typing faster and the number of typing errors made?).

22. Define histogram.
A histogram is used to display in bar graph format measurement data distributed by categories.

23. What are the problems that can be interpreted by the histogram?
The problems that can be interpreted by the histogram are,
a. Skew problems
b. Clustering problems.

24. Define control chart.
Control chart is defined as a display of data in the order that they occur with statistically determined upper and lower limits of expected common cause variations. It is used to indicate special causes of process variations to monitor a process for maintenance and to determine if process changes have has the desired effect.

25. What is line graph?
A line graph is a way to summaries how two pieces of information are related and how they vary depending on one another. The numbers along a side of the line graph are called the scale.

26. What is an arrow diagram?
An arrow diagram is another term for a PERT or CPM chart. It is graphic descriptions of the sequential steps that must be completed before a project can completed.

27. Give some applications of arrow diagram.
The applications of arrow diagram are,
a. Understanding and managing complex project or task.
b. Understanding and managing a project that is of major importance to the organization, and the consequences of late completion are sever.
c. Understanding and managing a project in which multiple activities must take place and be managed simultaneously.
d. Explaining the project status to others.
28. How is an arrow diagram constructed?
Steps in constructing an arrow diagram are,
  a. Select a team that is knowledgeable about the project, its task and subtasks.
  b. Record all of the tasks and subtasks necessary to the completion of the project.
  c. Sequence the tasks.
  d. Assign a time duration to each task.
  e. Calculate the shortest possible implementation time schedule using the critical path method.
  f. Calculate the earliest starting and finishing times for each task.
  g. Locate tasks with slack (extra) time and calculate total slack.
  h. Update the schedule as the project is being completed.

29. What is nominal group technique?
The nominal group technique is a structured process, which identifies and ranks the major problems or issues that need addressing.
UNIT IV TQM TOOLS & TECHNIQUES II

1. 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.

2. What are the benefits of QFD?
   i. Customer driven
   ii. Reduces implementation time
   iii. Promotes teamwork
   iv. Provides documentation

3. 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

4. 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
5. 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
6. 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
7. Define TPM?
T : Total = All encompassing by maintenance and production individuals working together.
P : Productive = Production of goods and services that meet or exceed customer's expectations.
M : Maintenance = Keeping equipment and plant in as good as or better than the original condition at all times.
8. Define quality cost.
Quality cost is defined as the cost associated with the non-achievement of product/service quality as defined by the requirements established by the organisation and its contracts with customers and society.
9. List the categories of quality costs.
The categories of quality cost are
1. Cost of prevention
2. Cost of appraisal
3. Cost of internal failures and
10. What is meant by cost of prevention?
Prevention costs are the costs that are incurred on preventing a quality problem from arising.
11. List the elements of cost of prevention.
The elements of cost of prevention are
1. Cost of quality planning
2. Cost of documenting
3. Process control cost
4. Cost of training
5. Costs associated with preventing recurring defects.
12. What is cost appraisal?
Appraisal costs are the cost that are incurred in assessing that the products/services conform to the requirements
13. What are the cost of appraisal?
The cost of appraisal are
1. Cost of receiving test and equipment
2. Cost of Laboratory acceptance testing
3. Cost of installation testing
4. Cost of installation and commissioning
5. Cost of maintenance and calibration of testing and inspecting equipments.

14. What is meant by cost of internal failures?
The costs associated with defective products, components and materials that fail to meet quality requirements and result in manufacturing losses are called as costs of internal failures. These costs are linked to correcting mistakes before delivery of the product.

15. List the components cost of internal failures.
The cost of internal failures are
1. Cost associate with scrap and rejects.
2. Cost of repair and rework.
3. Cost of design changes.
4. Cost of trouble shooting.
5. Cost of reinspection and retesting., etc;

16. What is meant by cost of external failures?
It consist of the cost which are generated because of defective products being shipped to customers. These cost are associated with the adjustments of malfunctions after delivery of the product.

17. Give the sub-elements of Preventive cost category?
i. Marketing/Customer/User
ii. Product/Service/Design development
iii. Purchasing
iv. Operations/
v. Quality Administration
vi. Other Prevention Costs

18. Give the sub-elements of Appraisal cost category?
i. Purchasing appraisal cost
ii. Operations appraisal cost
iii. External appraisal cost
iv. Review of test and application data
v. Miscellaneous quality evaluations

19. Give the sub-elements of Internal failure cost category?
i. Product or Service Design costs (Internal)
ii. Purchasing failure costs
iii. Operations failure costs

20. Give the sub-elements of External failure cost category?
i. Complaint investigations of customer or user service
ii. Returned goods
iii. Retrofit and recall costs
iv. Warranty claims
v. Liability costs
vi. Penalties
vii. Customer or user goodwill
viii. Lost sales
ix. Other external failure costs

21. Give the typical cost bases?
i. Labor
ii. Production
iii. Unit
iv. Sales

22. How will you determine the optimum cost?
   a. Make comparison with other organizations
   b. Optimize the individual categories
   c. Analyze the relationships among the cost categories

16 MARKS
1. Explain QFD with a suitable example. What are its advantages and Limitations.
2. Write short notes on:
   (a) Taguchi’s Quality Loss Function
   (b) TPM
3. Explain quality costs. What are the barriers for implementing TQM in an industry? Explain.
4. What are the six major loss areas need to be measured for implementing TPM?
5. Discuss the QFD process with new chart and flow diagram.

UNIT V QUALITY SYSTEMS

1. Give the ISO 9000 Series of Standards?
   i. ISO 9000, “Quality Management and Quality Assurance Standards Guidelines for Selection and Use”.
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?
   The quality systems are
   i. QS-9000
   ii. TE-9000
   iii. AS9000
4. Enumerate the steps necessary to implement the Quality Management System?
   The steps necessary to implement the Quality Management System are
   i. Senior management commitment
   ii. Appoint the management representative
   iii. Awareness
   iv. Appoint an implementation team
   v. Training
   vi. Time schedule
   vii. Select element owners
   viii. Review the present system
ix. Write the documents
x. Install the new system
xi. Internal audit
xii. Management review
xiii. Pre assessment
xiv. Registration.
5. What are the three sections of QS-9000?
The three sections of QS-9000 are
i. Common requirements, which include the exact text of ISO 9001 and the addition of automotive/heavy trucking requirements.
ii. Additional requirements covering production part approval process, continuous improvement and manufacturing capabilities.
iii. Customer-specific requirements.
6. Give the objectives of the internal audit?
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.
7. What are the requirements of ISO 14001?
The requirements of ISO 14001 are
i. General requirements
ii. Environmental policy
iii. Planning
iv. Implementation and operation
v. Checking and corrective action
vi. Management review
8. What are the benefits of ISO 14000?
The benefits of ISO 14000 are
a. Global
i. Facilitate trade and remove trade barriers
ii. Improve environmental performance of planet earth
iii. Build consensus that there is a need for environment management and a common terminology for EMS.
b. Organizational
9. 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
10. 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
11. 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
12. Give the types of Organizational Evaluation Standards?
i. Environmental Management System
ii. Environmental Auditing
iii. Environmental Performance Evaluation
13. Give the types of Product Evaluation Standards?
i. Environmental Aspects in Product Standards
ii. Environmental Labeling
iii. Life-Cycle Assessment
14. 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.
15. Give the usage of an effective recognition and reward system?
ı. Serves as a continual reminder that the organization regards quality and productivity as important.
ı. Offers the organization a visible technique to thank high achievers for outstanding performance.
ı. Provides employees a specific goal to work toward. It motivates them to improve the process.
ı. Boosts morale in the work environment by creating a healthy sense of competition among individuals and teams seeking recognition.
16. What are the typical measurements frequently asked by managers and teams?
ı. Human Resource
ı. Customers
ı. Production
ı. Research & Development
ı. Suppliers
ı. Marketing/Sales
ı. Administration
17. Explain the ISO/QS 9000 elements?
i. Management responsibility
ii. The Quality system
iii. Contract review
iv. Design control
v. Document and data control
vi. Purchasing
vii. Control of customer-supplied product
viii. Product identification and traceability
ix. Process control
x. Inspection and testing
xi. Control of inspection, measuring and test equipment
18. What are the benefits of ISO?
   1. Fewer on-site audit by customers.
   2. Increased market share.
   3. Improved quality, both internally and externally.
   4. Improve product and service quality levels from suppliers.
   5. Greater awareness of quality by employees.
   6. A documented formal systems.
   7. Reduced operating costs.

19. Give the ISO 9001 requirements?
   1. Scope
   2. Normative Reference
   3. Terms and Definitions
   4. Quality Management System
   5. Management Responsibility
   6. Resource Management
   7. Product Realization

20. What are the methods of actual audit?
   1. Examination of documents
   2. Observation of activities
   3. Interviews

16MARKS
1. Explain the steps to be followed in implementing quality system ISO 9001:2000
2. What are the requirements of ISO 14000? Explain them briefly.
3. Define quality system and explain the evaluation of ISO 9000.
4. Explain ISO 14000 with an Industrial application.
5. Explain the steps followed to get ISO 9000 certification for an educational institute.
6. What are the elements of ISO 9000:2000 quality system?
7. Explain in detail about the quality auditing with its different types.
8. Discuss in briefly about the documentation of quality system.
9. Discuss TQM implementation in manufacturing and service sectors including IT.