

M.L.V. TEXTILE AND ENGG. College Bhilwara

~~WAPDA~~

~~MECHANICAL ENGG.~~

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Sub: QAR (Quality Assurance & Reliability)

✓ Semester

Q) What is statistical quality control (S.Q.C) give its benefit?

Ans A quality control system performs inspection, testing and analysis to ensure that the quality of the product produced is as per laid down quality standards.

It is called "statistical quality control" when statistical techniques are employed to control, improve and maintain quality or to solve quality problem. Statistics is the collection of, organisation, analysis, interpretation and presentation of the data. Statistical quality control consists of three general activities

1. systematic collection and graphic recording of accurate data.
2. Analyzing the data
3. practical engineering or management action, if the information obtained indicate significant deviation from the specified limits.

Benefits of S.Q.C.

1. Efficiency:- The use of S.Q.C. ensure rapid and efficient inspection at minimum cost.
2. Reduction of scrap:- It uncovers the cause of excessive variability in manufacturing products - forecasting trouble before rejection occur and reducing the amount.
3. Easy detection of faults.
4. Adhere to specification.

Q2. What is the Total Quality Management (TQM) give six identifiable phase to achieve TQM?

Ans. "Total quality control" is an effective system of integrating quality maintenance and quality improvements effort of the various groups in an organisation. So as to enable production and service at the most economical levels, which allow full customer satisfaction. Total quality can be achieved only through total Employee involvement. It starts with people. Total quality comes from employees' creativity, team work, participation, continuous improvement, leadership etc. There are six identifiable phase to achieve TQM:

1. Comprehension
2. Commitment
3. Competence
4. Communication
5. Correction
6. Continuation

1. Comprehension:- What is quality, it should be definable and measurable.

2. Commitment:- clarity of concept and policies, organisation for it.

3. Competence:- develop method, tests procedure to evaluate quality, understand the price of non-conformance to quality.

4. Communication:- create awareness, resolve conflicts, co-ordinate activities, create an image of product quality and reliability.

5. Correction:- solve problem of non-conformance. problem are largely due to lack of knowledge.

6. Continuation:- maintain its importance, ensure exposure to sustained programmes, innovation.

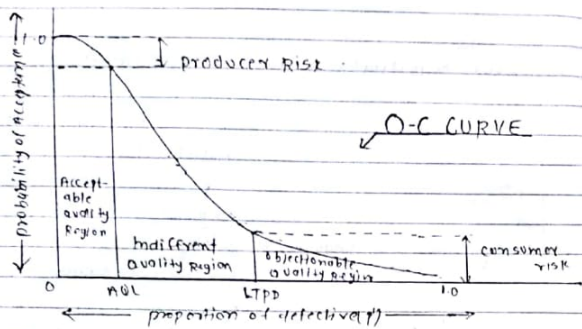
Q3. Define 'historical perspective of Quality control'.

Ans. Historical perspective of quality control :-

Serial	Period	Quality control strategies
1.	Before Industrial Revolution	CRAFTSMANSHIP The craft man or the master craftsman was responsible for quality control. In doing so he was using own judgment and own experience.
2.	During Industrial Revolution	SUPERVISORY PRACTICES Quality control was exercised through checks and supervision of workers generally visual in nature.
3.	Down of the 20th Century	INSPECTION TECHNIQUES The emergence of mass production led to the development and sophistication in inspection.
4.	After the World War	STATISTICAL QUALITY CONTROL (SQC) It is led to the introduction of the 'sampling' and control charts, it was used to control quality at manufacturing state. SQC also used feedback to bring change in process.
5.	Modern Era	QUALITY AS EMERGENT PROPERTY The concept like TQM, TQC, quality assurance, company wide quality and creativity (C.W.Q.C) and zero defect quality control are developed.

Q 4. Construct OC curve and define quality indices for sampling plans?

Ans



Quality indices for acceptance sampling plans

1. Acceptable Quality level (AQL): It represent the maximum proportion of defectives which consumer finds definitely acceptable.
2. Rejectable Quality level: - It is also called as lot tolerance percent defectives (LTPD). This is a definite of unsatisfactory quality. It represent the proportion of defectives which consumer finds definitely unacceptable.
3. Indifference Quality Level (IQL): This is a quality level somewhere between the AQL and RQL. It is frequently defined as the quality level having a probability of acceptance of 0.50 for a given sampling plan.
4. Average outgoing quality (AOQ): It represent the average % defective in the outgoing product after inspection, including all accepted and all cut rejected lots which have been 100% inspected and defectives replaced by non defectives.

Q 5. Describe briefly the ISO:2000 series standards in general.

Ans ISO 29000: (IS 14000) Quality management and quality assurance standard

The ISO standards gives guidelines for selection and use of appropriate model.

ISO:2001:1987 (IS:14001:1988)

Model for quality assurance in design/development, production, installation and servicing.

ISO:2002:1987 (IS:14002:1988)

Model for quality assurance in production and installation

ISO:2003:1987 (IS:14003:1988)

Model for quality assurance in final inspection and test

ISO:2004:1987 (IS:14004:1988)

Quality management and quality system element guidelines.