FTEAM21 QUALITY CONTROL

UNIT-1 INTRODUCTION AND PROCESS CONTROL FOR VARIABLES

1.1 Definition Of Quality, Basic Concept Of Quality,
1.2 Definition Of SQC, Benefits And Limitation Of SQC,
1.3 Quality Assurance, Quality Control: Quality Cost
1.4 Variation In Process Causes Of Variation- Theory Of Control Chart
1.5 Uses Of Control Chart- Control Chart For Variables- X Chart, R Chart And
1.6 Chart -Process Capability- Process Capability Studies and Simple Problems.
1.7 Six Sigma Concepts

UNIT-2 PROCESS CONTROL FOR ATTRIBUTES

2.1 Control Chart For Attributes
2.2 Control Chart For Non Conforming's- P Chart And Np Chart
2.3 Control Chart For Nonconformities- C And U Charts,
2.4 State Of Control And Process Out Of Control Identification In Charts, Pattern Study.

UNIT-3 ACCEPTANCE SAMPLING

3.1 Lot By Lot Sampling- Types
3.2 Probability Of Acceptance In Single,
3.3 Double, Multiple Sampling Techniques- O.C. Curves
3.4 Producers Risk And Consumer's Risk. AQL, LTPD, AOQL Concepts Standard Sampling Plans For AQL And LTPD- Uses Of Standard Sampling Plans.

UNIT-4 LIFE TESTING- RELIABILITY

4.1 Life Testing- Objective- Failure Data Analysis,
4.2 Mean Failure Rate, Mean Time To Failure,
4.3 Mean Time Between Failure, Hazard Rate
4.4 Weibull Model, System Reliability, Series, Parallel And Mixed Configuration
4.5 Simple Problems.
4.6 Maintainability and Availability- Simple Problems.
4.7 Acceptance Sampling Based On Reliability Test – O.C Curves.

UNIT-5 QUALITY AND RELIABLITY

5.1 Reliability Improvements- Techniques- Use Of Pareto Analysis
5.2 Design For Reliability- Redundancy Unit And Standby Redundancy
5.3 Optimization In Reliability- Product Design
5.4 Product Analysis- Product Development- Product Life Cycles.

References Books:

1. John.S. Oakland. "Statistical Process Control", 5th Edition, Elsevier, 2005
2. Connor, P.D.T.O., "Practical Reliability Engineering", John Wiley, 1993
3. Grant, Eugene .L "Statistical Quality Control", McGraw-Hill, 1996