

CA9172 SOFTWARE QUALITY MANAGEMENT

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UNIT I FUNDAMENTALS OF SOFTWARE QUALITY ENGINEERING 9

Concepts Of Quality – Hierarchical Modeling – Quality Models – Quality Criteria And Its Interrelation – Fundamentals Of Software Quality Improvement – Concepts Of Quality Improvement – Concepts Of Process Maturity – Improving Process Maturity.

UNIT II DEVELOPMENTS IN MEASURING QUALITY 9

Selecting Quality Goals And Measures – Principles Of Measurement – Measures And Metrics – Quality Function Deployment – Goal/Question/Measure Paradigm – Quality Characteristics Tree – The FURPS Model And FURPS+ – Gilb Approach – Quality Prompts.

UNIT III QUALITY MANAGEMENT SYSTEM 9

Elements Of A Quality Engineering Program – Quality Control, Assurance And Engineering – Reliability, Maintainability, Verifiability, Testability, Safety And Supportability – Historical Perspective Elements Of QMS – Human Factors – Time Management – QMS For Software–Quality Assurance – ISO9000 Series–A Generic Quality Management Standard – Tools For Quality.

UNIT IV PRINCIPLES AND PRACTICES IN QMS 9

Process–Product–Project–People In Software Development And Management Spectrum – Principle And Critical Practices In QMS – ISO 9001 And Capability Maturity Models – Six Sigma, Zero Defects And Statistical Quality Control.

UNIT V MEASURES AND METRICS IN PROCESS AND PROJECT DOMAINS 9

Key Measures For Software Engineers – Defects – Productivity And Quality – Measuring And Improving The Development Process – Assigning Measures To Process Elements And Events – Isikawa Diagrams – Metrics For Software Quality – Integrating Metrics Within Software Engineering Process – Metrics For Small Organizations.

TOTAL = 45

REFERENCES:

1. Brian Hambling, "Managing Software Quality", Tata McGraw Hill.
2. Juran. J.M.Frank, M.Gyrna, "Quality Planning and Analysis (from product development through use)", Tata McGraw Hill.
3. Alcon Gillies, "Software Quality: Theory and Management", International Thomson, Computer Press 1997.
4. Stephen H.Kan, "Metrics and Models in Software Quality Engineering", Addison Wesley, 1955.
5. Roger S. Pressman, "Software Engineering - A Practitioner's Approach", Fifth Edition, McGraw Hill, 2001.
6. Humphrey Watts, "Managing the Software Process", Addison Wesley, 1986.