M - SCHEME DETAILED SYLLABUS

34062 - TEST ENGINEERING

UNIT I INTRODUCTION TO TEST ENGINEERING

Need and Importance of Test Engineering – Principles of Fundamental Testing Methods – Basic Principles of Memory Testing – PCB Track Short Testing Methods –Concepts of Trouble Shooting PCBs - Manual and Automated PCB Trouble Shooting Techniques.

UNIT II AUTOMATED TESTING METHODS AND TECHNOLOGY

Introduction to Automated Test Techniques – Fundamental of Digital Logic Families - Concepts of Back-Driving / Node Forcing Technique and its International Defense Standard - Concepts of Digital Guarding - Auto Compensation - Clock Termination – Functional Test Methods - Functional Testing of Digital, Analog and Mixed Integrated Circuit – Different types of Memory Module Functional Test.

UNIT III V-I(Signature) TESTING METHODS AND TECHNOLOGY

Fundamentals of Electrical Characteristics - Effects of Curve Trace, Characteristics of Passive and Active Components - Understanding Composite VI-Curve and it deviations – Component Identification of Ageing Effects with VI Curve Trace, Input and Output Characteristics of Digital Integrated Circuits - Good Versus Suspect interpretation Comparison.

UNIT IV BOUNDARY SCAN TESTING METHODS AND TECHNOLOGY

Introduction to Boundary Scan – Need of Boundary Scan Test Technique - Principle of Boundary Scan Test - Boundary Scan Architecture - Application of Boundary Scan Test- Boundary Scan Standards - Boundary Scan Description Language (BSDL) – Interconnect test – Serial Vector Format (SVF) Test - Basic of JTAG Port - Digital Integrated Circuit Test using Boundary Scan Techniques.

UNIT V ATE Test Program generation And Semiconductor testing

ATE in PCB Test – Test Fixtures - Basics of Automatic Test Program Generation - Standard Test Data Format STDF – Basic of Digital Simulator - Introduction to Semiconductor Test, Use of Load Boards.

REFERENCE BOOKS

Test Engineering for Electronic Hardware – S R Sabapathi, Qmax Test Equipment's P Ltd., 2011.