

CETPA INFOTECH PVT. LTD.

CURRICULUM FOR EMBEDDED SYSTEM DESIGN

(8051 MICROCONTROLLERS USING ASSEMBLY & C)

<p>INTRODUCTION TO EMBEDDED SYSTEM</p> <ul style="list-style-type: none"> • History & need of Embedded System • Basic components of Embedded System • Hardware Classification of Embedded System • Programming Language Classification of Embedded System • Advantage & Disadvantage of Low level & High level programming language of Embedded System <p>CLASSIFICATION OF MICROPROCESSOR & MICROCONTROLLER</p> <ul style="list-style-type: none"> • Difference between Microprocessor & Microcontroller • Classification based on architecture • Classification based on Instruction Set • Type of Microcontroller • Memory Classification <p>INTRODUCTION TO 8051 MICROCONTROLLER</p> <ul style="list-style-type: none"> • Introduction of ATMEL 8051 family • Block diagram description of AT89C51 • Special feature of AT89C51 • Pin Description of AT89C51 <p>REGISTERS & MEMORY OF AT89C51</p> <ul style="list-style-type: none"> • Description of RAM • Description of CPU Registers • Functions of SFR <p>ASSEMBLY LANGUAGE PROGRAMMING OF AT89C51</p> <ul style="list-style-type: none"> • Addressing modes of AT89C51 • Directives of Assembly Language • Data Transfer Instruction • Jump Instruction • Arithmetic Instruction • Logical Instruction • Branching Instruction <p>INTERFACING OF LED</p> <ul style="list-style-type: none"> • Introduction of LED's • Interfacing Circuit Description of LED's • Programming of LED's Interfacing 	<p>INTERFACING OF SEVEN SEGMENT DISPLAY</p> <ul style="list-style-type: none"> • Introduction to 7 Segment Display • Types of 7 Segment Display • Interfacing Circuit Description of 7 Segment Display • Programming of 7 Segment Display Interfacing <p>INTERFACING OF LCD</p> <ul style="list-style-type: none"> • Introduction to 16 x 2 LCD • Commands of 16 x 2 LCD • Interfacing Circuit Description of 16 x 2 LCD • Programming of 16 x 2 LCD <p>INTERFACING OF SWITCHES & KEYBOARD MATRIX</p> <ul style="list-style-type: none"> • Introduction to Switches & Keyboard Matrix • Interfacing Circuit of Switches & Keyboard Matrix • Programming of Keyboard Matrix & Switches • Controlling of LED's by using Switches • Key board Matrix & LCD Interfacing Program <p>INTERFACING OF MOTORS</p> <ul style="list-style-type: none"> • Introduction to Motors • Types of Motors used in Embedded System • Programming & Controlling of motors in Embedded System <p>TIMERS & COUNTER PROGRAMMING</p> <ul style="list-style-type: none"> • Introduction to Timer & Counter • Difference between Timer and Counter • Description of SFR associated with Timer & Counter • Programming of Timer & Counter <p>SERIAL COMMUNICATION PROGRAMMING</p> <ul style="list-style-type: none"> • Introduction to Serial Communication • Types of Serial Communication • Description of SFR associated with Serial Communication • Introduction & Interfacing of UART • Programming of UART 	<p>INTERRUPT DRIVEN PROGRAMMING</p> <ul style="list-style-type: none"> • Introduction to Interrupts • Types of Interrupts • Programming of Software & Hardware Interrupts <p>INTERFACING OF ADC</p> <ul style="list-style-type: none"> • Introduction to ADC • Interfacing Circuit of ADC • Working & Interfacing of Temperature Sensor (DS1621 & LM35) <p>INTERFACING OF EXTERNAL MEMORY</p> <ul style="list-style-type: none"> • Introduction to External Memory Interfacing • Introduction to I2C Protocol • Using I2C library to read/write External Memory <p>INTRODUCTION OF EMBEDDED C</p> <ul style="list-style-type: none"> • Introduction to Embedded C • Different between C & Embedded C • Data Type of Embedded C • Operators of Embedded C • Statements & Loops of Embedded C <p>INTERWORKING OF ASSEMBLY & EMBEDDED C</p> <ul style="list-style-type: none"> • Inline Function • Inline Assembly Routines <p>PROGRAMMING & INTERFACING USING EMBEDDED C</p> <ul style="list-style-type: none"> • Programming of Timer & Counter • Programming of Serial Port • Programming of Interrupt • LCD Interfacing • Motor Interfacing • Key board Matrix Interfacing
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