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(Please write your Exam Roll No.)

Exam Roll No. ....

# END TERM EXAMINATION

EIGHTH SEMESTER [B.TECH.]– MAY JUNE 2011

Paper Code: ETEE418 | ETIT 408

Subject: Embedded Systems

Time : 3 Hours

Maximum Marks : 75

Note: Attempt any five questions including Q.no.1 which is compulsory.

Q1 Distinguish between the following terms with examples:- (5x5=25)

- (a) Target and Host
- (b) In-circuited Emulator and Simulator
- (c) Linker and Locator
- (d) USB communication and I2C communication
- (e) Stack Addressing and Direct Addressing of 8051

Q2 What is co-design? Explain it with the help of diagram? Compare co-design with traditional design of embedded systems. What is the status of PC, SP, P0, PSW and IE upon reset of 8051? (6+4+2.5)

OR

Draw the tool chain used for embedded systems applications development and explain each tool with example. Is it possible to use the tool chain used for desktop applications development for embedded systems? Justify your answer. (6+4+2.5)

Q3 Explain the 8051 architecture with the help of block diagram and show how it is different from the 8085/8086 microprocessors? (10+2.5)

OR

Explain the timer programming in 8051 and write a program to generate the square wave at P0.0 by using timer0 model with external clock frequency of 12MHz and also calculate the frequency of the square wave. (5+5+2.5)

Q4 Explain the procedure used for serial data communication with reference to 8051 and write a program to send a word "IPU" with a baud rate of 9600. (Assume any missing data) (6+6.5)

OR

Explain the interrupt structure in 8051 along with the interrupt priority register. Write a program for toggling the LED connected to the P0.0 by using the timer 1 interrupt? (6+6.5)

Q5 Show the Interfacing diagram that illustrates the 8051 interfacing with ADC and explain the function of each signal. How it is different from the DAC interfacing? (5.5+5+2)

OR

Show the Interfacing diagram that illustrates the 8051 interfacing with stepper motor and write a program to rotate the stepper motor clockwise? How do you control the speed and direction of the motor? (5.5+5+2)

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