10/05/2019

Roll No. .....

37132

Printed Pages : 3

BT–7 / M–19
MICROCONTROLLERS AND EMBEDDED SYSTEM DESIGN
Paper–ECE–401 N opt. II

Time allowed : 3 hours] *[Maximum marks : 75*

Note : *Attempt **five** questions in all, selecting at least one question from each unit. All questions carry equal marks.*

Unit–I

1. Differentiate between : 8+7=15

(a) Harvard architecture and Von-Neumann architecture

(b) RISC and CISC

2. (a) Explain different hardware units, devices and software in an embedded system. 7

(b) Discuss design process of 'Automatic Chocolate Vending Machine' (ACVM). 8

Unit–II

3. Draw the pin diagram of 8051 MC. Explain in detail the function of each pin in 8051 MC. 15

4. (a) Discuss the need and uses of timers in microcontrollers. What are the instructions used to start and stop the timers ? 8

(b) Discuss the need and uses of interrupts in the microcontrollers. Explain the meaning of each bit of IE and IP registers in 8051 MC. 7

Unit–III

5. (a) What is meant by term "addressing mode" ? Explain the types of addressing modes supported by the 8051 MC with suitable examples. 7

(b) Write assembly language program to transfer the message "HAPPY" serially continuously at 9600 at 9600 bps baud rate, 8-bit data, and 1 stop bit. 8

6. (a) Write instructions to

(i) enable Timer 1 and external interrupt 1

(ii) disable external interrupt 1

(iii) disable and enable all interrupt using single instruction

(iv) Program the IP register to assign the highest priority to TF0 and then discuss what happens if INT0, INT1 and TF0 are activated at the same time. 8

(b) Explain core features and peripheral features of PIC16C7X microcontroller. 7

Unit–IV

7. Interface 16 × 2 LCD module with the 8051 microcontroller and write a program to display message 'HELLO' at the beginning of the first line (by sending command and data to LCD using time delay). 15

8. Explain the operations, programming and interfacing diagram of temperature sensor with 8051MC. 15

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