Roll No. ....

Total Pages : 3

8930

BT-7/D09
MICROCONTROLLERS
Paper : ECE-415(E)

Time : Three Hours]   [Maximum Marks : 100

Note : Attempt *five* questions in all, selecting *one* question from each unit.

UNIT–I

1. What is the difference between Microprocessor and Microcomputer ? Explain in detail. 20

2. (a) Explain in brief how SID and SOD line of 8085 can be used for serial transmitter and receiver of data. Write a assembly program for the above. 8

   (b) Explain in brief with suitable diagram for interfacing of 32K external EPROM to 8051 microcontroller. 6

   (c) What is the difference between microcontrollers 8031, 8051, 8751, 8752 family. 6

UNIT–II

3. (a) Name and explain function of the following interfacing ICs in brief :

   8253, 8237, 8259, 8279 and 8255. 8

   (b) Explain in brief how timer/counter of 8051 can be used to generate square wave of variable frequency. 6

   (c) Write an assembly program (8051) to read values from Table located at address 6000H and compare the subsequent numbers to arrange in descending order. 6

4. (a) What is Watchdog timer in 8051 ? What is its use ? Explain in brief by writing a small program to program watchdog timer for 10 ms interval. 8

   (b) Explain in brief different hardware and software interrupts of 8051 microcontroller. 6

   (c) Explain in brief operation of serial port of 8051 alongwith the function of SCON and SMOD registers. 6

UNIT–III

5. (a) Explain different addressing modes of 8051 microcontroller with example. 5

   (b) Explain in brief different JMP (jump) instructions including conditional jumps of 8051. 5

   (c) Draw flow chart and write assembly (8051) program for transfer of block of data (10 bytes) from location 3000H to 5000H. Also explain the role of DMA controller in microprocessor applications. 10

6. (a) What is the difference between LCALL, ACALL, LJMP and AJMP instructions of 8051 microcontroller ? 5

   (b) What instructions will be used for 8051 in clearing (set zero) register R0 ? Which instruction is efficient in execution ? http://www.kuonline.in 5

   (c) Write a program to generate delay fron 1 ms to 1 sec. by using software (timers) of 8051. Explain at least one application of delay generation. 10

UNIT-IV

7. (a) Explain the merits and demerits of the following :

   (i) Successive approximation ADC.

   (ii) Integrating type ADC.

   (iii) Dual slope ADC.   8

   (b) How to interface ADC804 using port pins of 8051 microcontroller ? Write a program to read 10 samples of an analog input and sote in location from A000H.

           12

8. Design an interface for 6 seven segment LEPs display to 8051 and write a program to display message "Hellow". Also explain how you make rolling display from Left to Right and Right to Left character movement.   20

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