AQ – 2730

First Semester M. E. Electrical (Electrical Power System) Examination

MICROPROCESSOR AND MICROCONTROLLER

Paper – 1 SEPS 3

P. Pages : 2

Time : Three Hours] [Max. Marks : 80

Note : (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer–book must be used for Section A and B in Pharmacy and Cosmetic Tech.
(2) All question carry equal marks.
(3) Answer Two questions from Section A and Two questions from Section B.
(4) Due credit will be given to neatness and adequate dimensions.
(5) Assume suitable data wherever necessary.
(6) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION A

1. (a) Explain what are the different data type's are available in 8086 with suitable example. 6

(b) Explain the instruction format of 8086 with suitable diagram. 6

(c) Draw the organization of memory bank which is interface with 8085 A system needs 4 KB of EPROM and 4 KB of RAM. ROM addresses start at 0000H and RAM address start at 2000H. The available Chips are

(i) 2716 EPROM^5 (2K x 8).

(ii) 6116 RAM (2k x 8) 8

2. (a) Explain the demultiplexing of AD_0–AD_7 using proper circuitry and Draw a logic schematic to generate the control signals using 8085 $\overline{IOR}$, $\overline{IOW}$, $\overline{MEMR}$ and $\overline{MEMW}$. 10

(b) Design 8085 system to interface with 8255 arrangement to map

(i) (1024 x 8) ROM in address space 0000H to 03FFH.

(ii) (2048 x 8) RAM in address space 0800H to OFFFH.

(iii) Output port in address 1000H to 2000H.

(iv) Input port in address 3000H to 4000H. Assume suitable address for CWR. 10

3. (a) Explain the addressing modes of 8086 with suitable diagrams and example. 8

(b) Draw and explain the interrupt structure of 8085. 6

(c) Explain the RIM and SIM instruction of 8085 with suitable example. 6

SECTION B

4. (a) Write an assembly language program to blink an LED connected to PORT 1.1 with delay of 25 ms. Use Timer 1 of microcontroller with 16 bit mode. Assume clock frequency is 11.0592 MHz. Draw interfacing diagram. 10

(b) Explain the interrupt process in 8051 with reference to related SFR's. 6

(c) Discuss different Jump instruction with examples in 8051. 4

5. (a) Write an ALP to detect any key press by considering debounce effect the code for corresponding key press should be store at location 3500H onwards of external RAM. 10

(b) Write a program to interface 8051 with common anode seven segment LED display to count from 0 to 9 continuously. Also show the seven segment decoding table. 10

6. (a) Write a program to transmit 50 data byte serially through TXD line of 8051. Assume that these bytes already stored at location 70H of external RAM. The baud rate must be 4800 bPs. Assume oscillator frequency = 12 MHz. 10

(b) What are the different types of interrupts in 8051. Write a steps for executing an interrupts and also Draw and explain SFR's Related to interrupts of 8051. 10