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Total Number of Pages: 2

B.Tech
PCEL 4303

6th Semester Regular / Back Examination 2016-17
MICROPROCESSOR AND MICROCONTROLLER
BRANCH: IT,ITE
Time: 3 Hours
Max Marks: 70
Q.CODE: Z694

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions: (2 x 10)**
- a) 80386 is a how many bit microprocessor and what is its memory capacity in Real mode.
 - b) Write any four differences between 8085 and 8086 processor.
 - c) When 8086 microprocessor performing memory read operation in Minimum mode what logic signal will be generated in M/\overline{IO} , \overline{RD} and \overline{WE} pin?
 - d) What is the value of Parity flag and Carry flag in 8086 microprocessor after addition of 2506H with F936H?
 - e) What is a RIM instruction in 8085 processor?
 - f) What is a MOVX and MOVC instruction of 8051 microcontroller?
 - g) What is the addressing mode of the following instructions?
 - I. MOV A, @R1
 - II. CMP AL, [DI]
 - h) How many register banks are there in 8051 Microcontroller on-chip RAM and which one is the default one?
 - i) Find the BSR mode control word to Set and Reset PC₄ bit of the Port C.
 - j) What is Virtual Mode Flag and Resume Flag of 80386 processor?
- Q2 a) What are the two memory bank enable signals of 8086 processor what logic signals generated by the processor on these pin to enable odd bank for byte operation? (2)**
- b) Design the hardware to interface two 16KB ROM and Two 16KB RAM with 8086 processor. (8)**
- Q3 a) Write the definition of Mode-1 i/p and o/p control signals of 8255 PPI. (5)**
- b) Write a program to read the 8-switches connected with Port-A and Add the read data with 02H and display the sum in display device connected to Port-B. (5)**

- Q4 a)** Explain about the following operating modes of 8253 timer. **(5)**
- I. Hardware triggered mode
 - II. Square wave generator mode
 - III. Interrupt on terminal count mode
- b)** Explain about the control word register of Timer. Find the control word and write the initialization instructions in order to setup the counter-0 as a 16-bit BCD counter in mode-3. Assume 16-bit address. **(5)**
- Q5 a)** Write the Addition instruction of 8086 microprocessor in five different addressing modes. **(5)**
- b)** Explain about the following instructions of 8086 processor. **(5)**
LDS, SCASB, DAA, IMUL and CBW
- Q6 a)** Explain about the addressing modes of 8051 microcontroller. **(5)**
- b)** What are the I/O ports available in 8051 Microcontroller and what is the alternate function of I/O pins. How to configure the port of 8051 microcontroller as an Input Port? **(5)**
Write a program to take in 8-bit data through P1 pin and copy it in A register.
- Q7** Write the 8085 instruction syntax to copy the content of A register into the M register and draw and explain about the timing diagram of that instruction. **(10)**
- Q8** **Write short answer on any TWO:** **(5 x 2)**
- a)** 80386 paging technique
 - b)** 8288 Bus controller
 - c)** USART
 - d)** 8086 Maximum mode