(Please write your Exam Roll No.)

END TERM EXAMINATION

SIXTH SEMESTER [B.TECH] APRIL-MAY 2019

Paper Code: IT-302 **Subject: Microprocessors**

Time : 3 Hours **Maximum Marks :75**

Note: Attempt five questions in all including question no.1 which is compulsory. Select one question from each unit.

Q1 Attempt **any ten** from the following:- **(10x2.5=25)**

(a) Why segmentation of memory concept (segment registers) was introduced in 8086 microprocessor?

(b) Draw 16 digits display interface of 8279.

(c) Describe interrupt cycle of 8086.

(d) Write the name of modes in 8254? Also tell which mode in 8086 is used to generate square wave?

(e) Explain the following directives for Intel 8086 microprocessor:
ENM, EQU and PTR.

(f) Interface two 4K*8 RAM chips and select suitable map?

(g) Draw the architecture of 8255.

(h) Describe the programming and operating modes of 8051.

(i) Write function of following pins of 8251 (i)T*RDY (ii) T*D.

(j) What are the different exceptions generated by 8087.

(k) Discuss various addressing modes in brief.

(l) How macros are handles by assembler during conversion of assembly language code in to machine language code.

UNIT-I

Q2 (a) What are the advantages of 8086 microprocessors over 8085 microprocessor? **(6)**

(b) Write short note on microprocessor bus types and buffering techniques. **(6.5)**

OR

Q3 (a) Explain the following instructions in detail with the help of examples:- **(8)**
(i) RAR (ii) CPI Data (iii) SPHL (iv) XRI data

(b) Write note on 8086 minimum mode and maximum mode CPU module. **(4.5)**

UNIT-II

Q4 (a) Explain block diagram of 8086 microprocessor and explain its PSW. **(6)**

(b) Explain the concept of memory segmentation and its advantages. **(6.5)**

OR

Q5 (a) Explain following 8086 instruction:-
(i) XLAT (ii) LDS (iii) AAM (iv) SCASW **(8)**

(b) What is demultiplexing of buses in 8086? Explain demultiplexing of address bus in 8086 and 8088. **(4.5)**

UNIT-III

Q6 (a) (i) Explain different data transfer instructions with proper example in 8086 microprocessor.
(ii) Write an assembly language program to multiply two 16 bits numbers. **(4)**

(b) Discuss string instructions with suitable example. Explain why REP prefix is added with string instruction. Which string instructions should be used to ensure that two strings in the memory are equal. **(4)**

OR **(4.5)**

Q7 (a) (i) Explain assembly language program development tools. **(6)**
(ii)Write an assembly language program to convert a binary number to its equivalent BCD number.

(b) (i) Write the procedure to determine physical address for the following instructions:-
(a) MOV AL, CS: [BX+0400] (b) MOV AL, [BX+SI+22]
assume CS=4000h, IP=2300, SI=02300 and DS=5000 **(6.5)**
(ii) Write the difference between the following instructions:-
(a)MUL and IMUL (b) DIV and IDIV (c) JUMP and LOOP (d) Shift and Rotate

UNIT-IV

Q8 (a) Explain the interfacing between 8087 and 8086 microprocessor. Draw the block diagram of 8279. **(6)**

(b) Explain counting type ADC with the suitable diagram what are the limitations of this converter? Howe you can improve the performance of ADC. **(6.5)**

OR

Q9 (a) Draw N-bit binary weight DAC and explain its operation. What are the disadvantages of binary weight DAC? What is difference between N-bit DAC and R-2R ladder DAC. **(6)**

(b) What is 8089 I/O processor explain with its functional block diagram. Write different features of 8089 I/O processor. **(6.5)**

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