Unit–II

3. (a) Use looping to write a sequence to add to 16-digit 10's complement packed BCD numbers. Repeat for unpacked BCD numbers. 8

(b) Explain following 8086 instructions; CALLDWORD PTR [BX], XLAT, WAIT, CMPS, REP and LDS reg. 12

4. (a) Write 8086 ALP to multiply two matrices each of size 4×4. 7

(b) Write a procedure which produces a delay of 3.33 ms when run on an 8086 with 5 MHz clock. 6

(c) Write a note on assembler directives. 7

Unit–III

5. (a) List the major tasks that must be done to support dynamic RAM in microcomputer system. What timing parameter limits the rate at which data words can be read from rows in a DRAM ? Also explain how the page mode operation of a bank of DRAMs makes it possible for microprocessor to read data words without wait states. 12

(b) Write note on interfacing of SRAMs and PROMs with microprocessor. 8

Printed Pages : 3

BT–5 / D 12

MICRO PROCESSORS AND INTERFACING

Paper–ECE–311 E

Time allowed : 3 hours] *[Maximum marks : 100*

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

Unit–I

1. (a) What are the advantages of 8086 microprocessors over 8085 microprocessor ? Explain the registers structure of 8086. 14

(b) Write short note on microprocessor bus types and buffering techniques. 6

2. (a) Draw and discuss the pin diagram of 8086 microprocessor. What are the functions of DT/$\overline{R}$ and $\overline{DEN}$ signals in 8086 microprocessor chip ? 15

(b) Write note on 8086 minimum mode and maximum mode CPU module 5

6. (a) Describe how a SRAM cache reduces the average number of wait states required by microprocessor which uses DRAM for its main memory. Also explain read/write timing diagram in minimum and maximum mode operation of 8086. 15

(b) Write short note on TMS4500 DRAM controller. 5

Unit–IV

7. (a) Describe the conditions which cause the 8086 to perform each of the following types of interrupts; type 0, type 1, type 2, type 3 and type 4. Also describe the purpose of the 8086 interrupt vector table. 11

(b) Write a program to generate square wave using 8086 microprocessor and other necessary hardware. Clearly explain the use of DAC and PPI in this problem. 9

8. (a) Explain asynchronous mode word for 8251. Write the 8086 instructions to read the status of 8251 and test the errors. 12

(b) Interface 20 bit ADC with 8086 microprocessor. ADC needs 2ms + ve pulse on SOC pin to start the conversion and provides – ve pulse on *EOC* pin when conversion is over. 8

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