

Registration No. :

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Total number of printed pages – 2

B. Tech
PCEC 4301

Fifth Semester (Back/Special) Examination – 2013

MICROPROCESSORS

BRANCH : AEIE, BIOMED, EC, ETC, IEE

QUESTION CODE : D 245

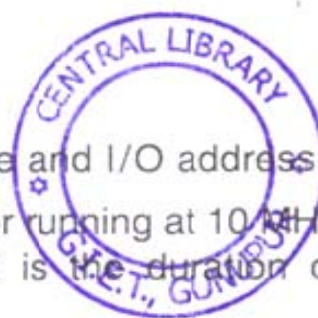
Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any **five** from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10
 - (a) What is tristating ? Explain the utility of tristating in microprocessor ?
 - (b) Calculate the Physical address of 8086 microprocessor if the segment register and offset addresses are 1000:1234 respectively.
 - (c) What is "Multiplexing" technique and why it is used in microprocessors ?
 - (d) Specify clearly what is the importance of $\overline{\text{LOCK}}$ pin in 8086 microprocessor ?
 - (e) Make a control word for the following arrangement of the Intel 8254 where the counter 1 is used to Read/Load least significant byte only and operate in Mode 1 operation and used for BCD counting ?
 - (f) How many ports are present in 8255 PPI ? Mention the truth table for port selection taking A_0 and A_1 as inputs ?
 - (g) What is interrupt service routine (ISR) ?
 - (h) Explain what is instruction pipelining ?
 - (i) How large 8086's memory address space and I/O address space ?
 - (j) What is a wait state ? If an 8086 processor running at 10 MHz performs read cycles with two wait states, what is the duration of the bus cycle ?
2.
 - (a) Explain the register organization of an Intel 8086 microprocessor. 5
 - (b) Explain the operation of Bus controller Intel 8288 along with the pin diagram. 5



P.T.O.

3. (a) What are the different types of operating modes used in 8086 microprocessor ? Explain operation of each type with suitable block diagram. 5
- (b) Explain the functions of the following instructions: 5
- LAHF
 - IN ac, port
 - SUB mem/reg, reg/mem
 - IDIV mem/reg
 - XOR ac, data.
4. (a) What are the different addressing modes in 8086 ? Explain with examples. 5
- (b) Distinguish between 8086 and 8088 microprocessor. 5
5. (a) Explain the operation of clock generator Intel 8284. 5
- (b) Write a 8086 microprocessor based program to arrange a series of data in descending order. 5
6. (a) What are the different classifications of 8086 interrupts ? Explain the Intel predefined Interrupts. 5
- (b) What do you mean by USART ? Draw the block diagram of Intel 8251 and briefly explain the operation of it. 5
7. Design an 8086 based systems with the following specifications. 10
- 8086 in minimum mode
 - 64K-byte EPROM
 - 64K-byte RAM.
- Draw the complete schematic of the design indicating address map.
8. Write short notes on any **two** of the following : 5×2
- DMA Controller
 - Data transfer schemes
 - Keyboard/Display Controller - Intel 8279
 - Operand types of Intel 8086.

