

Registration No. :

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Total number of printed pages – 2

B. Tech  
PCEL 4303 (New)

**Sixth Semester (Back) Examination – 2013**  
**MICROPROCESSORS AND MICROCONTROLLERS**

**BRANCH : IT**

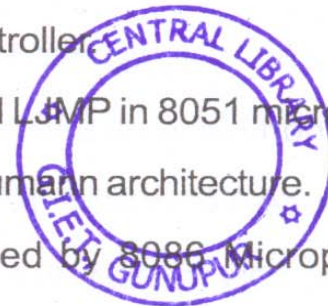
**QUESTION CODE : B 284**

**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) Distinguish between Microprocessor and Microcontroller.
  - (b) What is ISR ? How ISR is related to IVT ?
  - (c) Explain the operation of Direction Flag and Trap Flag in 8086 Microprocessor.
  - (d) State the register Banks in 8051 microcontroller.
  - (e) What is the difference between SJMP and LJMP in 8051 microcontroller ?
  - (f) Distinguish between Harvard and Von-Neuman architecture.
  - (g) What is the maximum memory accessed by 8086 Microprocessor ? Explain.
  - (h) What is the minimum and maximum values for segment and offset address in 8086 microprocessor ?
  - (i) Write down the control word content of 8255 in BSR mode to SET the fifth bit of port-C.
  - (j) What is the function of barrel shifter in 80386 microprocessor ?
2. Draw and explain the internal architecture of 8085 microprocessor. 10



**P.T.O.**

3. Explain the Minimum mode system configuration of 8086 Microprocessor and list the functions performed by the signals. 10
4. Explain the following 8086 Instructions : 2×5
  - (a) MOV AX, [SI]
  - (b) OUT 03H, AL
  - (c) LAHF
  - (d) DAA
  - (e) CBW
5. (a) Explain T-state, Machine cycle and Instruction cycle. Distinguish between fetch and read cycle. 4
  - (b) Draw the timing diagram for the instruction LDA 5000. 6
6. (a) Write a program to clear sixteen consecutive RAM locations from 60H onwards using loop in 8051 microcontroller. 5
  - (b) Explain the various addressing modes of 8051 microcontroller. 5
7. (a) Explain how 8259A is used in cascade mode to facilitate more number of interrupts with suitable diagram. 5
  - (b) Explain the register organization of 80386 microprocessor. 5
8. Write short notes on any **two** of the following : 5×2
  - (a) Mode-1 operation of 8255 PPI
  - (b) Memory mapped I/O and I/O mapped I/O
  - (c) PCON register of 8051
  - (d) Pipelining in 8086 microprocessor

