Registration No. : | | | | | | | | | | |

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-Neumann 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