

Total No. of Questions : 12]

SEAT No. :

P1416

[Total No. of Pages : 3

[4858] - 183

T.E. (Computer Engineering)

MICROPROCESSORS AND MICROCONTROLLERS

(Semester - I) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates :-

- 1) *In Section I, attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6.*
- 2) *In Section II, attempt Q. No. 7 or Q. No. 8, Q. No. 9 or Q. No. 10, Q. No. 11 or Q. No. 12.*
- 3) *Answers to the two Sections must be written in separate answer books.*
- 4) *Neat diagram must be drawn whenever necessary.*
- 5) *Figures to the right indicate full marks.*
- 6) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Compare 80386, 80486 and the Pentium based on architecture. [6]
b) What is branch prediction in the Pentium? Explain with diagram. [4]
c) Explain following pins of the Pentium. [6]
i) ADS#
ii) D/C#
iii) RESET

OR

- Q2)** a) Is the Pentium RISC or CISC or both? Justify your answer. [4]
b) Describe cache organization of the Pentium. [4]
c) Explain Floating Point Unit of the Pentium? [8]

P.T.O.

- Q3)** a) What do you mean by bus cycle? Draw and explain non-pipelined read bus cycle of the Pentium. [8]
b) Explain flag register of the Pentium in detail. [8]

OR

- Q4)** a) What is bit manipulation instruction? Explain any two bit manipulation instruction. [6]
b) Explain addressing modes of the Pentium with suitable examples. [8]
c) Describe any one instruction. [2]
i) BTC
ii) PUSH

- Q5)** a) Describe logical to linear address translation mechanism in the Pentium. Draw the required data structures. [8]
b) Describe PDE and PTE formats. [6]
c) Draw & explain the structure of a call gate. [4]

OR

- Q6)** a) Name protected mode registers of the Pentium. [4]
b) What are the selectors in the Pentium? Explain their use in segmentation. [6]
c) Draw and explain the use of control registers in the Pentium. [8]

SECTION - II

- Q7)** a) How I/O devices are handled by the Pentium processor? [6]
b) Explain task switch operation through task gate. [6]
c) Write any six difference between 8086 and virtual 86 mode. [6]

OR

- Q8)** a) Explain IDT in Pentium in details. How interrupt handling in protected mode is dependent on contents of IDT? [6]
b) Explain steps in entering Virtual mode. [6]
c) Explain nested task in Pentium. [6]

- Q9)** a) Explain the features of 8051 microcontroller. [6]
 b) Draw and explain Program Status Word of 8051 microcontroller. [6]
 c) Explain the function of following pins. [4]
 i) T1
 ii) T0

OR

- Q10)** a) Describe different timer modes of 8051 microcontroller. [8]
 b) Explain following 8051 instructions. [8]
 i) POP ii) ANL
 iii) MUL AB iv) LCALL

- Q11)** a) Write features of 8096 microcontroller. [4]
 b) Explain addressing modes of 8051 microcontroller. Explain with suitable example. [8]
 c) Explain SCON register of 8051 microcontroller. [4]

OR

- Q12)** a) What are the different sources of interrupts in 8051? Explain interrupt handling mechanism in 8051. [8]
 b) Explain IE register of 8051 microcontroller. [4]
 c) Explain PCON register of 8051 microcontroller. [4]

