

Total No. of Questions :12]

SEAT No. :

**P2945**

**[4958]-183**

[Total No. of Pages :4

**T.E. (Computer)**

**MICROPROCESSORS AND MICROCONTROLLERS  
(2008 Course) (Semester - I) (310243)**

*Time : 3 Hours]*

*[Max. Marks :100*

*Instructions to the candidates:*

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

**SECTION - I**

- Q1)** a) Compare 80386, 80486, and the Pentium based on architecture. [6]
- b) Describe cache organization of the Pentium. [4]
- c) With the help of neat diagram explain architecture of the Pentium processor. [8]

OR

- Q2)** a) Explain Floating Point Unit of the Pentium? [6]
- b) Which features makes the Pentium, a superscalar processor? Explain in detail. [6]
- c) Explain following pins of the Pentium. [6]
- i) ADS#
  - ii) D/C#
  - iii) RESET

**P.T.O.**

- Q3)** a) Explain addressing modes of the Pentium. [8]
- b) Draw and explain memory interfacing mechanism for 32 and 64 bit memory with the Pentium. [8]

OR

- Q4)** a) With the help of neat diagram, explain non-pipelined read bus cycle of the Pentium. [6]
- b) List and explain protected mode registers of the Pentium. [6]
- c) Describe any two instructions. [4]
- i) CMPXCHG
- ii) PUSH
- iii) BTC

- Q5)** a) How logical address is translated to linear address in the Pentium. Draw the required data structures. [8]
- b) Explain rules designed to protect data or code of the Pentium. [8]

OR

- Q6)** a) How linear address is translated to physical address in the Pentium. Draw the required data structures. [8]
- b) What are the selectors in the Pentium? Explain their use in segmentation. [4]
- c) Draw & explain the structure of a call gate. [4]

## SECTION - II

- Q7)** a) How interrupts are handled in protected mode? Explain with the help of neat diagram. [8]
- b) What is I/O permission bit map? When it is referred? [6]
- c) Explain nested task in the Pentium. [4]

OR

- Q8)** a) What are the contents of TSS? Discuss the use of TSS in multitasking. [8]
- b) What is difference between interrupt, Fault Trap and Abort? [6]
- c) Differentiate between real mode and virtual mode of the Pentium. [4]

- Q9)** a) Explain following 8051 instructions [8]
- |            |           |
|------------|-----------|
| i) POP     | ii) ANL   |
| iii) MULAB | iv) LCALL |
- b) Draw and Explain internal RAM organization of 8051. [8]

OR

- Q10)** a) Explain addressing modes of 8051 microcontroller. Explain with suitable example. [8]
- b) Explain following 8051 instructions [8]
- |           |          |
|-----------|----------|
| i) MOVC   | ii) MOVX |
| iii) SETB | iv) RETI |

- Q11)** a) Draw and explain architecture of 8096 microcontroller. [8]
- b) Explain IE register of 8051 microcontroller. [4]
- c) Explain any two modes of timer operation in 8051. [4]

OR

- Q12)** a) What are the different sources of interrupts in 8051? Explain interrupt handling mechanism in 8051. [8]
- b) Describe serial port on 8051 with the help of SCON. [8]

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