

Total No. of Questions : 12]

SEAT No. :

P3644

[4758] - 81

[Total No. of Pages :3

T.E. (Computer)

MICROPROCESSORS AND MICROCONTROLLERS

(2008 Pattern) (310243)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer Question No.1 or 2, 3 or 4, 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 diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Assume suitable data if necessary.*

SECTION - I

- Q1)** a) Which features make the Pentium a superscalar processor? Give details of every feature. **[6]**
- b) Describe cache organization of the Pentium. **[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) What is branch prediction? Explain in detail. **[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 burst read cycle in Pentium. [8]
- b) Explain flag register of 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 [8]
- c) Describe any one instruction [2]
- i) CMPXCHG
- ii) PUSH

- Q5)** a) How linear address is generated in the Pentium. [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) Explain rules designed to protect data or code of the Pentium. [8]

SECTION - II

- Q7)** a) What is I/O permission bit map? When it is referred? [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) Draw and Explain internal RAM organization of 8051. [12]
- b) Explain the function of following pins [4]
- i) T1
- ii) T0

OR

- Q10)**a) Explain port 0 to port 3 of 8051. [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 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) Explain IE register of 8051 microcontroller. [4]
- c) Explain PCON of serial port of 8051 microcontroller. [4]

