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]**

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