Total No. of Questions : 12]

SEAT No. :

P1665

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T.E. (Computer Engineering)

MICROPROCESSORS AND MICROCONTROLLERS

(2008 Course) (Semester-I) (310243)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 from section I and Q7 or Q8, Q9 or Q10, Q11 or Q12 from section II.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Explain the functions of the following pins of Pentium Processor: **[10]**

i) RESET ii) BE7-BE0

iii) INIT iv) KEN

v) FERR

b) With the help of neat block diagram explain architecture of Pentium processor. **[8]**

OR

Q2) a) Compare 80386, 80486 & Pentium based on architectural features. **[10]**

b) Explain the following terms of Pentium when operating in real mode: **[8]**

i) Addressable Space

ii) Segmentation

iii) Registers supported

iv) New instructions (give any two)

Q3) a) What is significance of contents of EAX, EDX, EIP & CS on reset? **[8]**

b) Describe different 4 addressing modes of Pentium with suitable examples. **[8]**

OR

P.T.O.

Q4) a) Describe following instructions: **[8]**

i) XADD ii) SWAPB

iii) BTC iv) WBINVD

b) With the help of neat diagram explain non-pipelined read bus cycle in Pentium. **[8]**

Q5) a) What are privileged instructions? Give two examples. **[8]**

b) Describe PDE & PTE format. **[8]**

OR

Q6) a) Describe call gate mechanism in detail. Draw the related descriptor format. **[8]**

b) Differentiate between IVT & IDT. **[8]**

SECTION-II

Q7) a) Difference between virtual mode and protected mode. **[8]**

b) What is the task? Explain TSS in detail. **[8]**

OR

Q8) a) What is multitasking? Which registers & descriptors are involved to support this features in Pentium. **[8]**

b) i) What are the different types of exceptions? Explain by giving example of each.

ii) What are error codes? Their use?

[8]

Q9) a) What is Program Status Mode (PSW)? Describe its format. **[8]**

b) Draw and explain architecture of 8051 microcontroller. **[10]**

OR

Q10)a) What is the function of EA, ALE, ES, PSEN TOT, XTAL, INT1, TXD and RXD pins? **[10]**

b) Explain features of 8051 Microcontroller. **[8]**

Q11)a) Draw & explain format of SCON & SBUF also explain serial port programming of 8051 microcontroller. **[8]**

b) List and explain operating modes of Timer of 8051. **[8]**

OR

Q12)a) Draw and explain architecture of 8096 microcontroller. **[8]**

b) Explain the following instructions in 8051: **[8]**

i) MOV A, Rn

ii) DIV AB

iii) SWAP A

iv) MOV DPTR, #2550H

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