Total No. of Questions :12]

SEAT No. :

P2945

[Total No. of Pages :4

[4958]-183
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]**