



Reg. No. :

Name :

Sixth Semester B.Tech. Degree Examination, June 2015
(2008 Scheme)
Branch : Computer Science and Engg.
08.605 : HIGH PERFORMANCE MICROPROCESSORS

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries 4 marks.

1. What is instruction pipelining ? How does it improve the speed of execution of a processor ?
2. Explain the power saving modes of operation of 8051.
3. What are Thumb instructions ? How are they executed ?
4. How is security ensured in Segmentation ?
5. Determine if an 8051 in Mode 0 can communicate with an 8051 in Mode 1.
6. What number should be XORed with the Accumulator so that the result is FFh ?
7. How is memory addressed in real and protected modes of operation of a processor ?
8. What are the functions of IE and IP registers in 8051 ?
9. How are integers and floating point numbers handled in MIPS R 4000 ?
10. Explain the pre-indexed and post-indexed addressing modes of Arm processors.





PART – B

Answer **one** question from **each** Module. **Each** question carries **20** marks.

11. a) With suitable diagrams, explain the Pentium 4 microarchitecture. 10
b) Which are the major architectural advancements in 80486 over 80386 ? 10
OR
12. a) Explain in general, the concept behind hyperthreading technology. 10
b) What is out of order execution ? How is it handled using register renaming and instruction scheduling ? 10
PART – A
13. a) What is pipelining ? Explain the various pipeline optimization methods with examples and figures. 20
OR
14. a) What are register windows ? Why are they typical for processors used in embedded applications ? Explain the circular buffer organization of register windows. 12
b) Explain the arithmetic and logic instructions of ARM processors. 8
15. a) With a suitable block diagram, explain the internal architecture of 8051 microcontroller. 20
OR
16. a) Describe how a microcontroller detect and identify a key press on a keyboard. 10
b) Explain the serial transmission modes of 8051. 10
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