C 58401 (Pages : 2) Name.....

Reg. No.....



**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION**
**JUNE 2009**

IT 04 604—COMPUTER ARCHITECTURE

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

*Answer* **all** *questions.*

I. (a) What are the characteristics of web server ?

(b) What are the different ways of interpreting memory address ? Explain using examples.

(c) What is Loop unrolling ? Explain how it improves scheduling.

(d) What is a tournament predictor ? What are its advantages and disadvantages ?

(e) What are nonblocking caches ? Explain their usage in reducing cache miss penalty/rate.

(f) What are the measures that are used to study the performance of I/O system ? Explain.

(g) Explain the sequential consistency model using an example. What are its drawbacks ?

(h) Write the code for a sense reversing barrier. Compare with simple barrier.

(8 × 5 = 40 marks)

II. (a) (i) Describe the features of embedded computers. (9 marks)

(ii) Give the formats of various instruction encoding schemes. (6 marks)

*Or*

(b) (i) Explain the various optimization techniques used in a compiler. (8 marks)

(ii) Write the code sequence for A = B – C * D for stack class of instruction set. (7 marks)

III. (a) Classify Dependencies. Explain each type using examples.

*Or*

(b) Explain the Tomasulo's algorithm using a loop based example.

(15 marks)

IV. (a) Explain how RAID improves both dependability and performance of storage system.

(15 marks)

*Or*

(b) (i) Compare cache memory and virtual memory based on the issues related to design.

(7 marks)

(ii) Explain the various ways of placing a block in a cache. (8 marks)

**Turn over**

V. (a) Describe the features of :

(i) Barner Application.

(ii) Ocean Application.

(15 marks)

*Or*

(b) (i) What is the idea behind relaxed consistency models ? What are its types ? Explain. (10 marks)

(ii) Compare connection oriented and connectionless communication. (5 marks)

[4 × 15 = 60 marks]