

C 58401

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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

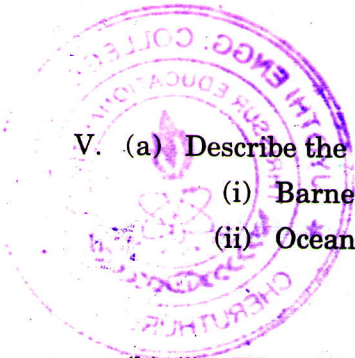
- (b) (i) Compare cache memory and virtual memory based on the issues related to design.

(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]