C 47645

Name.....

Reg. No.....

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION JUNE 2008

IT 04 604—COMPUTER ARCHITECTURE

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all *questions.*

I. (a) Explain how hazards can be avoided in pipelining.

(b) Explain instruction encoding.

(c) Classify dependencies. Explain using examples.

(d) What are the limitations of instruction level parallelism ?

(e) What are the different ways of performing cache write ? Explain.

(f) Explain the protection mechanism used in virtual memory.

(g) Compare connection-oriented and connectionless communication.

(h) What are the advantages of message passing communication ?

(8 × 5 = 40 marks)

II. (a) Explain the various methods used for evaluating performance.

Or

(b) Explain the various addressing modes using examples.

(15 marks)

III. (a) (i) Explain the various branch prediction techniques. (8 marks)

(ii) What is a vector processor ? Explain how the performance can be enhanced using compiler vectorization. (7 marks)

Or

(b) Explain the issues related to exploiting parallelism using compiler support and hardware support. (15 marks)

IV. (a) Explain the use of different RAID levels in Fault Tolerance. (15 marks)

Or

(b) Discuss the design issues of virtual memory. (15 marks)

V. (a) Explain the various synchronization primitives. (15 marks)

Or

(b) (i) Explain the different ways of controlling congestion in networks. (8 marks)

(ii) Explain snoopy protocol. What are its drawbacks ? (7 marks)

[4 × 15 = 60 marks]