Roll No. ....

24487

B. Tech 7th Sem. (CSE)

Examination – June, 2016

ADVANCED COMPUTER ARCHITECTURE

Paper : CSE-401-F

Time : Three Hours]   [Maximum Marks : 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is *compulsory.* Attempt *five* questions in total selecting *one* question from each Section.

1. (a) Explain various basic data types in any architecture.

   (b) Compare copyback and write through cache write policies.

   (c) Compare SRAM and DRAM.

   (d) Compare vector processors and multiple instruction issue processor.   4 × 5 = 20

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SECTION – A

2. (a) Differentiate between hardwired control and micro programmed control. **6**

   (b) Compute the optimum number of segments, total instruction execution time, throughput for a pipelined process assuming T=90, b= 0.3, k = 0.04 and C = 3ns. **14**

3. (a) Write a program in L/S architecture with explanation to find out roots of a quadratic equation. **14**

   (b) Explain virtual to real mapping process. **6**

SECTION – B

4. (a) Explain various strategies for fetching a line in cache at miss time. **10**

   (b) We have a two level cache with miss rate of 6% (L1) and 3%(L2). Suppose the miss in L1 and hit in L2 penalty is 2 cycle and miss penalty in both caches is 5 cycles. If a processor makes 1.5 references per instruction, Compute excess CPI due to cache misses. **10**

5. Write notes on :

   (a) I and D caches **5**

   (b) Direct mapping **10**

   (c) Write assembly cache **5**

SECTION – C

6. (a) Explain basic steps in the design of memory system. **8**

   (b) Explain Hellerman, Strecker model in memory system design. **12**

7. Explain Flores and closed queue model. **20**

SECTION – D

8. (a) Explain various functional units of vector processor. **10**

   (b) Explain various runtime scheduling techniques. **10**

9. Write notes on :

   (a) Partioning in shared memory multiprocessor. **10**

   (b) Snoopy and directory based protocols. **10**

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