B. Tech. 7th Semester (CSE) F. Scheme Examination,
May–2017
ADVANCED COMPUTER ARCHITECTURE
Paper–CSE-401-F

Time allowed : 3 hours] *[Maximum marks : 100*

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

1. (a) Explain virtual to real address mapping mechanism. 4×5=20

(b) What do you mean by locality of program behavior ? Explain various types of localities.

(c) Compare SRAM and DRAM.

(d) Explain the role of clustering in shared memory multiprocessing.

(e) Explain various actions within an instruction execution process.

Section–A

2. (a) How pipelining processing is different from normal processing ? 3

(b) Explain various levels of addressing for a machine. 3

(c) Assume a wafer has diameter of 80cm and costs 10000 for a particular production run. Compute the cost per die for die area = 0.9cm^2 and for 1.4 cm^2 if defect density = 0.3 defects/cm^2. 14

3. (a) Write a program in R/M and R+M architecture with explanation to find out average of all the elements of an array. 14

(b) Explain economics of a processor project. 6

Section–B

4. (a) Explain various cache write policies. 10

(b) Why do we need page replacement ? Explain various page replacement policies. 10

5. Write notes on :

(a) Level caches 5

(b) Associative mapping 10

(c) Write assembly cache. 5

Section–C

6. (a) Explain hamming code method for error correction with example. 8

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

7. Explain open and mixed queue model. 20

Section–D

8. (a) Explain various functional units of multiple issue machines. 10

(b) Explain various runtime scheduling techniques. 10

9. Write notes on :

(a) Partitioning 10

(b) Memory coherency in shared memory multiprocessor. 10