

9. Write notes on :

- (a) Different types of shared memory multiprocessors. 10
- (b) Memory coherency in shared memory multiprocessor. 10

Roll No.

24487

B. Tech. 7th Semester (CSE)
Examination – December, 2016
ADVANCED COMPUTER ARCHITECTURE
Paper : CSE – 401 – F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, 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 : If any regarding the number of questions to be attempted and mode of selection of questions must be written here.

1. (a) Define the terms state, machine and storage.

8 × 2.5 = 20

- (b) What is the role of PC and IR in instruction execution ?

- (c) What do you mean by hit ratio and miss rate ?

- (d) What do you mean local, global and solo miss rate in level caches ?
- (e) What is a memory module ?
- (f) What do you mean by closed queue ?
- (g) Mention notation of speedup in case of concurrent processing.
- (h) What do you mean by clustering ?

SECTION - A

- 2. (a) Explain various basic data types in any architecture. 6
- (b) Assume a wafer has diameter of 30cm and costs 8000 for a particular production run. Compute the cost per die for die area = 1.4cm^2 and for 1.7cm^2 if defect density = 0.7 defects/cm^2 . 17
- 3. (a) Write a program in R/M architecture with explanation to find out roots of a quadratic equation. 14
- (b) Find performance, throughput, optimum number of segment and total inst execution time for pipelining process. 6

SECTION - B

- 4. (a) Explain associative mapping method. 10
- (b) Why do we need page replacement ? Explain various page replacement policies. 10
- 5. Write notes on :
 - (a) Level caches 6
 - (b) Cache write policies 8
 - (c) TLB 6

SECTION - C

- 6. (a) Explain parity bit method for error detection 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 snoopy and directory based protocols. 10