

# SRP-24487

B.E./ B. Tech. 7th Semester Examination,  
January-2015

## ADVANCED COMPUTER ARCHITECTURE Paper-CSE-401-F

*Time allowed : 3 hours ]*

*[Maximum marks : 100*

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

1. (a) Define the terms State and Cycle. 20
- (b) Differentiate between horizontal and vertical instruction.
- (c) What is write assembly cache ?
- (d) What do you mean by locality of reference.
- (e) What is a memory module ?
- (f) What do you mean by open queue ?
- (g) Name various run time scheduling techniques.
- (h) What is the effect of grain size on partitioning ?

### Section-A

2. (a) Differentiate between hardwired control and micro programmed control. 10

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- (b) Assume a wafer has diameter of 0.40m and costs 1000 for a particular production run. Compute the cost per die for die area =  $1.3\text{cm}^2$  and for  $0.035\text{m}^2$  if defect density = 0.9 defects/ $\text{cm}^2$ . 10
3. (a) Write a program in L/S, R/M architecture for subtracting a constant value from all the elements of an array. 10
- (b) Find performance, throughput, optimum number of segment and total inst. execution time for pipelining process. 10

### Section-B

4. (a) Explain various cache write policies. 10
- (b) What do you mean by level caches ? Explain principle of logical inclusion in cache memory. 10

5. Write notes on –

- (a) Overlapping T cycle in virtual to real translation. 10
- (b) Explain set associative mapping. 10

### Section-C

6. Explain Hellerman, Strecker and Rau's model in memory system design. 20

7. Explain open and mixed queue model. 20

**Section-D**

8. (a) Explain various functional units of vector processor. 10  
(b) Explain snoopy and directory based protocols. 10
9. Write notes on –  
(a) Partitioning in shared memory multiprocessor. 10  
(b) Memory coherency in shared memory multiprocessor. 10