

**I.D. No. 24487**

**B. Tech. 7th Semester E. Scheme Computer Science Engg.-VIII**

**Examination, May-2014**

**ADVANCED COMPUTER ARCHITECTURE**

**Paper-CSE-401-F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

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**Note : (i) Question No. 1 is compulsory.**

**(ii) Attempt *one* question from each of the *four* sections.**

- 1. (a) Differentiate between horizontal and vertical microinstructions.**
- (b) Describe the principle of locality of reference.**
- (c) Discuss the need for memory hierarchy.**
- (d) What are multiple issue machines ? How are these different from vector processors ?**
- (e) What is the effect of grain size on the amount of parallelism in a multiprocessor system ?**

- (b) Discuss the probable advantages and disadvantages of using microprogrammed instruction decode.
3. (a) How can instruction execution be partitioned into cycles ?
- (b) What is code density ? What is its effect on storage hierarchy ?

**Section-B**

4. (a) What are the two strategies for memory updation on a write in cache ? Describe.
- (b) Differentiate between I-cache and D-cache.
5. (a) What is meant by virtual-to-real translation ?

**Section-C**

6. Describe the following models :
- (i) Hellerman's model
- (ii) Strecker's model
- (iii) Rau's model.

**Section-D**

8. What is vector memory ? What are vector instructions/ operations ?
9. Write short notes on :
- (a) Shared memory multiprocessors
  - (b) Memory coherence in shared memory multiprocessors.