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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)**

**M.Tech I Year I Semester Regular & Supplementary Examinations February 2018  
Advanced Computer Architecture  
(Common to ES & DECS)**

Time: 3 hours

Max. Marks:60

(Answer all Five Units 5 X 12 =60 Marks)

**UNIT-I**

- 1 a. Explain the concept of speed of hardware and its cost? . 6M  
b. Explain the role of compilers? 6M

**OR**

- 2 a. Explain the different instruction set architecture. 6M  
b. Discuss the CPU performance equation?. 6M

**UNIT-II**

- 3 a. Explain instruction level parallelism. 6M  
b. Write short notes on VLIW approach. 6M

**OR**

- 4 a. Give details of state branch prediction 6M  
b. Differentiate hardware versus software approach of ILP? 6M

**UNIT-III**

- 5 a. Define cache miss and cache hit. How to reduce the miss rate in cache memory?. 6M  
b. Explain symmetric shared memory architecture. 6M

**OR**

- 6 a. Give details of cache performance equation? 6M  
b. Explain the hardware primitives for synchronization 6M

**UNIT-IV**

- 7 a. Explain different types of storage systems 6M  
b. Explain in detail about bus design decisions. 6M

**OR**

- 8 a. Explain how RAID dominate large scale storage systems 7M  
b. Compare the time to read and write a 64 KB block to Flash memory and magnetic disk. for flash, assume it takes 65ns to read 1 byte, 1.5 micro seconds to write 1 byte, and 5ns to erase 4 KB. Assume the measured seek time is one-third of the calculated average, the controller overhead is 0.1 ms, and the data are stored in the outer tracks, giving it the faster transfer rate. 5M

**UNIT-V**

- 9 a. Explain the different component used in the network media Why fiber optics are preferred for data transmission? 6M  
b. What is cluster? Why the clusters are popular. list the pros and cons of cost of clusters? 6M

**OR**

- 10 a. Explain storage area network an example of interconnection network 6M  
b. What are the practical issues in interconnecting networks? Explain with examples 6M

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