SF-235

Total No. of Pages : 2

Seat No.	

B.E. (Computer Sc. & Engineering) (Semester - VII) (Revised) Examination, November - 2017

ADVANCED COMPUTER ARCHITECTURE

Sub. Code : 67541

Day and Date : Friday, 10 - 11 - 2017 **Total Marks : 100**

Time : 2.30 p.m. to 5.30 p.m.

Instructions :
1) **Attempt any THREE questions from each section.**
2) **Figures to the RIGHT indicate Full Marks.**
3) **Assume suitable data if necessary.**

SECTION - I

Q1) a) In context of parallel processing explain different elements of a modern computer system. **[8]**

b) What is implicit parallelism and explicit parallelism? State different software tools for the same. **[8]**

Q2) a) Draw and explain NUMA model state its applications? **[8]**

b) What is concept of linear pipelining? Explain scalar and vector pipelines. **[8]**

Q3) a) With block diagram explain generic model of a message passing multicomputer. **[8]**

b) What are array processors? Explain different configurations of array processors. **[8]**

Q4) Write Short Notes on Following (Any Three) : **[18]**

a) Vector instructions.

b) Systolic Arrays.

c) Cray -1 Architecture.

d) SIMD Machine Model.

P.T.O.

SECTION - II

Q5) a) Draw loosely coupled multiprocessor Cm* architecture. How degree of memory conflict problem is avoided in loosely coupled systems? **[8]**

b) What is slocal in Cm* architecture? What is importance of Kmap processor? With block diagram explain network of clusters. **[8]**

Q6) a) Explain primary components of the instruction set architecture of VMIPS. State any five VMIPS instructions. **[8]**

b) What is latency? Explain shared virtual memory technique for latency hiding. What are the advantages of latency hiding? **[8]**

Q7) a) How parallelism in processes is checked? How data dependence analysis is carried out? Explain with suitable example. **[8]**

b) Explain grain packing approach of Kruatrachue and Lewis for parallel programming applications. **[8]**

Q8) Write Short Notes on Following (Any Three) : **[18]**

a) Prefetching Technique for latency hiding.

b) Multithreading.

c) Program Graph.

d) Cross cutting issues Tesla Versus Corei7.

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