SE - 210

Seat No.	

Total No. of Pages : 2

B.E. (Computer Science & Engineering) (Semester-VII) (Revised) Examination, November - 2018

ADVANCED COMPUTER ARCHITECTURE

Sub. Code : 67541

Day and Date : Tuesday, 20 - 11 - 2018 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 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) What are different shared memory multiprocessor models? Draw and explain cache only memory architecture . State its applications. **[8]**

b) What is Dependability? How it is measured ? **[8]**

Q2) a) Explain interleaved memory organization. Draw and explain C- access architecture. state its advantages. **[8]**

b) Which factors affects program behavior ? Explain following performance measures. **[8]**

i) Clock rate and CPI
ii) MIPS rate
iii) Throughput rate
iv) Execution Time

Q3) a) Draw and explain Cray type Vector Processor. Explain any five vector instructions. **[8]**

b) What are latency hiding techniques ? Explain perfecting technique in detail. State its advantages. **[8]**

Q4) Write Short Notes on Following (ANY THREE) **[3 × 6 = 18]**

i) Multithreaded Architectures
ii) Associative memory processor
iii) Systollic arrays
iv) Array Processors

P.T.O.

SECTION - II

Q5) a) Draw and explain Cm* cluster architecture . How communication between multiple clusters takes place ? **[8]**

b) What is GPU? How it is different from CPU? Draw the format for PTX (Parallel Thread Execution) instruction. **[8]**

Q6) a) Draw and explain tightly coupled architecture. State its applications **[8]**

b) Compare control-flow, dataflow computers in terms of the program flow mechanism used. **[8]**

Q7) a) Draw basic structure of a vector architecture VMIPS. Explain following vector instructions **[8]**

i) ADDVS .D V1,V2,F0

ii) SUBVV.D V1,V2,V3

iii) ADDVV.D V1,V2,V3

iv) SUBSV.D V, F0,V2

b) Analyze the data dependences among the following statements in a given program **[8]**

S1 : Load R1,1120

S2 : Load R2,M(20)

S3:Add R1,R2

S4: Store M(1124),R1

Q8) Write Short Notes on Following (ANY THREE) **[3 × 6 = 18]**

i) Grain Size

ii) Hard ware and Software parallelism

iii) Grain packing and Scheduling

iv) Bernstein's conditions

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