

Seat No.	
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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) Systolic 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

