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B. E. (Seventh Semester) Examination,
April-May 2020/NOV-DEC 2020

(New Scheme)

(CSE & IT Engg.)

ADVANCED COMPUTER ARCHITECTURE

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : Attempt all the questions. Part (a) from each question is compulsory. Attempt any **two** parts from parts (b), (c) and (d) of each question.*

Unit-I

1. (a) Pipeline is one way to implement parallelism. Comment and justify.   2

(b) Explain Dynamic Instruction Scheduling in details. 7

(c) Describe Superscalar processor in detail. 7

(d) Explain VLIW architecture with its instruction format. 7

Unit-II

2. (a) What is Cache Coherence problem? 2

(b) Describe the techniques for increasing the memory bandwidth. 7

(c) Explain Snoopy Bus Protocol in detail. 7

(d) Explain back plane system. Also explain bus standards. 7

Unit-III

3. (a) What is grain size latency? 2

(b) Compare SISD, SIMD and MIMD. 7

(c) Explain data and resource dependencies in details. 7

(d) Compare control flow and Data control. 7

Unit-IV

4. (a) What is Data Routing? 2

(b) Describe vector processing and its characteristics. 7

(c) Explain Distributed memory model in detail. 7

(d) Explain SIMD parallel algorithm with a suitable example. 7

Unit-V

5. (a) What is node degree? 2

(b) Explain static and dynamic interconnection networks. 7

(c) Write a short notes on : 7
   (i) Baseline networks
   (ii) Butterfly networks

(d) Explain multiprocessor system interconnection in detail. 7