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Roll No. :

322741(22)

B. E. (Seventh Semester) Examination,

Nov.-Dec. 2021

(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. Part (a) carry 2 marks & rest of carries 7 marks.

Unit-I

1. (a) What is non-linear pipeline?

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- (b) Explain instruction pipeline in detail.
- (c) Describe functions and properties of super scalar processors.
- (d) Explain VLIW architecture and its advantages.

Unit-II

- 2. (a) What are the basic types of buses?
- (b) What is cache coherence problems? Explain cache coherence protocols in detail.
- (c) Describe high band width memories in detail.
- (d) What is I/O performance? What causes high disk I/O? How it can be improved?

Unit-III

- 3. (a) What do you mean by resource dependency?
- (b) Explain various types of parallel computer models.
- (c) What is gain size and latency? Explain program partitioning and scheduling in detail.
- (d) Describe control flow and data flow computers. Give an example to compare them.

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Unit-IV

- 4. (a) Define vector instructions.
- (b) What are the different kinds of instructions in vector processor? Explain in detail.
- (c) Describe parallel algorithms in context of SIMD computers.
- (d) Discuss about SIMD computers and their performance enhancements.

Unit-V

- 5. (a) What are the five components of a network?
- (b) Describe dynamic interconnection network in detail.
- (c) What are multicomputers? Explain its drawback and how this can be solved? Discuss.
- (d) Write a detail note on multiprocessor system interconnection.