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Future Vision

By K B Hemanth Raj

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Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Advanced Computer Architecture

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. List the performance factors and system attributes. Explain how performance factors are influenced by system attributes. (08 Marks)
- b. Explain the architecture of vector super computer with neat diagram. (08 Marks)

OR

- 2 a. What are the conditions of parallelism? Explain the types of data dependence. (06 Marks)
- b. What are the metrics affecting scalability of a computer system? (06 Marks)
- c. What are the important characteristics of parallel algorithms? (04 Marks)

Module-2

- 3 a. What are the characteristic of CISC and RISC architecture? (04 Marks)
- b. What are the virtual memory models for multiprocessor system? (04 Marks)
- c. Explain address translation mechanism using TLB and page table. (08 Marks)

OR

- 4 a. Explain typical superscalar RISC processor architecture. (08 Marks)
- b. Explain inclusion, coherence and locality properties. (08 Marks)

Module-3

- 5 a. What is arbitration? Explain different types of arbitration. (08 Marks)
- b. Explain sequential and weak consistency models. (08 Marks)

OR

- 6 a. What are the different techniques for branch prediction? Explain. (08 Marks)
- b. Explain multiply pipeline design to multiply two 8-bit integers. (08 Marks)

Module-4

- 7 a. Explain routing in omega network. (08 Marks)
- b. What are different vector – access memory schemes? Explain any two of them. (08 Marks)

OR

- 8 a. What are the implementation models of SIMD? Explain them. (08 Marks)
- b. Explain four context-switching policies. (08 Marks)

Module-5

- 9 a. What are the issues in using shared-variable model? (08 Marks)
- b. Explain different phases of parallelizing compiler with a diagram. (08 Marks)

OR

- 10 a. Explain testing algorithm for dependence testing. (08 Marks)
- b. What are the principles of synchronization mechanisms? Explain them. (08 Marks)
