CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

15CS72

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)**

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