

# 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)

\* \* \* \* \*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.