Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80320

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Electronics and Communication Engineering

EC 6009 — ADVANCED COMPUTER ARCHITECTURE

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the five trends in Computer Technology?
2. How to find the cost of an integrated circuit?
3. Explain the idea behind dynamic scheduling.
4. Give an example for data dependence.
5. Differentiate GPU and CPU.
6. What are the primary components of instruction set architecture of VMIPS?
7. List the methods for providing synchronization in threads.
8. Define sequential consistency.
9. List the six basic optimizations techniques of Cache.
10. What are the types of storage devices?

PART B — (5 × 16 = 80 marks)

11. (a) Write short notes on energy and power consumption in a microprocessor. (16)

Or

(b) Discuss the performance evaluation methods of different computers. (16)

12. (a) (i) Explain the types of dependencies in ILP. (8)

(ii) Explain the compilation techniques that can be used to expose Instruction level parallelism. (8)

Or

(b) (i) Explain dynamic scheduling. Explain how it is used to reduce data hazards. (8)

(ii) Define Multithreading. Explain how ILP is achieved using multithreading with an example. (8)

13. (a) Discuss similarities and differences between Vector Architectures and GPUs. (16)

Or

(b) Explain detecting and enhancing loop level parallelism in detail. (16)

14. (a) Describe distributed shared memory Architecture in detail. (16)

Or

(b) Explain models of memory consistency in detail. (16)

15. (a) Explain the categories of misses and how will you reduce cache miss rate. (16)

Or

(b) (i) Explain the various ways to measure I/O performance. (8)

(ii) Explain the various levels of RAID. (8)