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

Question Paper Code : 41239

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Electrical and Electronics Engineering

080280056 – COMPUTER ARCHITECTURE

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the polynomial form of binary and decimal numbers.

2. Write the purpose of Memory reference instructions.

3. What is the advantage of microprogramming?

4. Write the instruction format of Berkeley RISC 1.

5. What is meant by vector processing?

6. Define pipelining.

7. List out the functions to be performed by a serial I/O Interface.

8. What is meant by DMA?

9. Show how a 16 MB main memory can be realized using 64 KB memory chips, assume an interleaved memory organization with four banks.

10. Define Cache.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss in detail on data types, fixed point and floating point representations.

Or

(b) With neat sketch, describe the timing and control unit.

12. (a) Give the organization of micro programmed control unit and explain its operation.

Or

(b) Explain the various addressing modes with example instructions. Also discuss the importance of each of the addressing mode.

13. (a) A computer has floating-point arithmetic instructions. But the CPU hardware does not have the floating point ALU. How should the system handle floating-point arithmetic? Also discuss micro operations.

Or

(b) Explain the following : (4 + 4 + 8)

(i) Instruction Pipeline

(ii) Speed-up

(iii) Pipeline Hazard and data hazard.

14. (a) What is the need for a DMA transfer. Explain how DMA operation takes place.

Or

(b) Discuss the concept on Priority Interrupt and I/O interface.

15. (a) With neat sketch, explain the fully associated and set associated cache.

Or

(b) With schematic diagram, discuss the virtual memory and explain how virtual address is converted to physical address.
