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

Question Paper Code : 41184

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Seventh Semester

Electrical and Electronics Engineering

CS 1358 – COMPUTER ARCHITECTURE

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering and Sixth Semester Electronics and Communication Engineering)

(Regulation 2008)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. With example define memory size, word length and memory address.
2. List out the advantages of assembly language program.
3. Mention the drawbacks of serial and parallel adders.
4. Give the representation format for signed numbers with example.
5. Define the busses designed in a processor.
6. What are the advantages of pipelining?
7. Specify the important characteristics of semiconductor memories.
8. Define latency and seek time in magnetic memory disk.
9. State the reasons for limited number of I/O devices interface to a processor.
10. Mention the advantages and limits of SCSI drive.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the basic operational concepts of computers. (8)

(ii) Explain the characteristics and operations designed for stacks. (8)

Or

(b) (i) What are the steps involved in instruction execution? Explain. (6)

(ii) With example explain the various addressing modes designed in a processor. (10)

12. (a) (i) Write the basic rules for signed number addition and illustrate with example. (7)

(ii) With example explain an algorithm for fast multiplication. (9)

Or

(b) (i) Explain construction and working of a fast adder. (8)

(ii) Discuss an algorithm for integer division. (8)

13. (a) (i) Describe the design hardwired control unit for a processor. (9)

(ii) Explain the basic concept of superscalar operation. (7)

Or

(b) (i) Explain the steps in microprogrammed control section design. (8)

(ii) What are instruction hazards? Explain its types. (8)

14. (a) (i) Describe the construction and working of a typical semiconductor ROM. (8)

(ii) Discuss the performance consideration for cache memories. (8)

Or

(b) (i) Explain the need and role of cache memories in computers. (7)

(ii) What are the requirements for memory management ? Explain any one memory management technique in detail. (9)

15. (a) (i) Write in detail the steps involved in configuring and accessing I/O devices. (8)

(ii) Explain the specifications for PCI standard. (8)

Or

(b) (i) Discuss the blocks and working of Direct Memory Access. (8)

(ii) Explain the construction and specifications for USB. (8)
