

Code No: 5158A

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech I Semester Examinations, October - 2015

COMPUTER SYSTEM DESIGN
(Computer Science and Engineering)

Time: 3hrs

Max.Marks:60

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

PART - A

5 × 4 Marks = 20

- 1.a) Explain bus arbitration process used in DMA. [4]
- b) Discuss about data hazards in pipelining. [4]
- c) What are the various factors to be considered in the selection of memory? Explain. [4]
- d) What are deadlocks and how can we prevent the occurrence of deadlocks? [4]
- e) Classify intruders and explain briefly. [4]

PART - B

5 × 8 Marks = 40

- 2.a) List out the differences between logical I/O and device I/O.
 - b) What are device drivers in windows? Explain. [4+4]
- OR
3. Discuss about the addressing modes of Pentium processor with appropriate examples. [8]
- 4.a) Draw and explain typical hardwired control unit.
 - b) Write various steps involved in designing the micro programmed control for a microcomputer. [4+4]
- OR
5. With neat diagram explain multiple bus organization. What are its advantages? [8]
- 6.a) Explain the features of RISC processor.
 - b) Discuss about direct mapped, associative mapped and set associative mapped cache memory system. [4+4]
- OR
- 7.a) Explain virtual memory organization with a neat diagram.
 - b) Draw the block diagram of 8M×32 using 512K×8 memory chips. [4+4]
8. A system has two processes and three identical resources. Each process needs a minimum of two resources. Is there any possibility of deadlock? Explain. [8]
- OR
9. Can a thread be preempted by clock interrupt? If so, state under what circumstances? If not, why not? [8]
10. Write short notes on UNIX file system. [8]
- OR
11. Write an algorithm for creating a file and explain. [8]