

**R13**

Code No: 5158A

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**M. Tech I Semester Examinations, February - 2017**

**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) Write a short notes on interrupt handlers. [4]
- b) What are the steps involved in instruction execution? [4]
- c) What are various types of memory and give memory hierarchy? [4]
- d) Write the differences between thread and process. [4]
- e) Explain about user authentication. [4]

**PART - B**

**5 × 8 Marks = 40**

- 2.a) Explain logic and shift/rotate instructions.
- b) What are various addressing modes?
- c) What are the differences between system software and application software? [3+3+2]

**OR**

- 3.a) Explain about registers usage and importance in processor.
- b) Discuss briefly about I/O interfaces. [2+3+3]
- c) Explain device drivers in windows.

4. Describe hardwired control unit with block diagram. [8]

**OR**

- 5.a) Explain about pipelining and its influence on instruction sets. [4+4]
- b) Explain about data path & control consideration in pipelining.

- 6.a) Explain in detail about cache memory? How it improves the performance? [4+4]
- b) Explain memory management in UNIX.

**OR**

- 7.a) What is page fault and how swapping recovers page fault? [3+5]
- b) What are different page replacement methods? Explain any two of them.

- 8.a) Briefly explain the life cycle of a process.  
b) What are the various methods for deadlock detection and how can they be avoided? [4+4]

**OR**

- 9.a) Write about the various methods involved in inter process communication.  
b) Explain briefly dining-philosophers problem. [4+4]

- 10.a) What are the various security related threats.  
b) Explain briefly about intruders and their effects.  
c) Define cryptography and authentication. [3+3+2]

**OR**

- 11.a) What is accidental data loss and how can it be prevented?  
b) Brief about the directory representation in UNIX.  
c) What are links and symbolic links in UNIX file system? [3+3+2]

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