

R13

Code No: 115EN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, November - 2015****COMPUTER ORGANIZATION AND OPERATING SYSTEMS****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A (25 Marks)

- 1.a) Convert the 1998 (decimal number) to binary. [2]
- b) Describe about *High-Impedance* State. [3]
- c) Define Control Memory. [2]
- d) Write about Control Function. [3]
- e) Describe about *Handshaking*. [2]
- f) What is the use of a status command in I/O organization? [3]
- g) Define essential properties of distributed operating systems. [2]
- h) List any four Operating system services. [3]
- i) Name any four file types. [2]
- j) List various file allocation methods. [3]

PART - B (50 Marks)

- 2.a) Describe about shift micro operations.
- b) Obtain the 2's complement of following eight bits numbers
i) 1010110
ii) 10000001. [4+6]

OR

- 3.a) Describe about stack organization.
- b) Convert the hexadecimal number F3A7C2 to binary and octal. [4+6]

4. Explain in detail about 4-bit Arithmetic circuit. [10]

OR

5. Describe about Arithmetic Logic Shift Unit. [10]

- 6.a) What is the difference between subroutine and an interrupt-service routine?
- b) Explain about daisy chaining priority. [4+6]

OR

7. Explain in detail about Input-Output Interface. [10]

- 8.a) Explain the difference between internal and external fragmentation.
- b) Discuss Characteristics of deadlock. [6+4]

OR

9. How to avoid deadlock? Illustrate with an example. [10]

- 10.a) Explain the purpose of the open () and close () operations.
- b) Suppose that a disk drive has 5,000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is: 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130 starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for SSTF disk scheduling algorithm? [5+5]
- OR**
11. Explain in detail about RAID structure. [10]

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