R13

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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