Code No: 115EH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD B. Tech III Year I Semester Examinations, November - 2015 **OPERATING SYSTEMS**

(Common to CSE, IT)

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)	What do you mean by Virtual Memory?	[2]
b)	Define multitasking.	[3]
e)	What are the two separate and potentially independent characteristics e the concept of process?	mbodied in [2]
d)	Describe about race condition.	[3]
e)	What is the difference between page and segment?	[2]
f)	What do you mean by Thrashing?	[3]
g)	Define three blocking methods.	[2]
h)	What delay elements are involved in disk read or write?	[3]
i)	How can the hold-and-wait condition be prevented?	[2]
j)	What are the necessary and sufficient conditions to occur deadlock?	[3]
2.a) b)	PART - B (50 Marks) What system calls have to be executed by a command interpreter or shell start a new process? Explain briefly. What are the main differences between operating systems for mainframe corpersonal computers?	
	UK	
3.a)	What is the relationship between a guest operating system and a host operation in a system like VMware? What factors need to be considered?	ng system
b)	Define Essential properties of Distributed Operating Systems.	[5+5]
1.a)	Explain process states.	
b)	Explain the concept of semaphores. Illustrate with an example.	[5+5]
5.a)	Give Peterson solution for critical section problem.	TZ XIXX
b)	Consider the following set of process, with the length of the CPU bur milliseconds.	st given in [3+7]
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Process		Priority	y de la companya de La companya de la co
	Time		
P1	10	3	
P2	1	1	
P3	2	.3	
P4	1	4	pe constitue de la lacte de la company de
P5	5	2	

The processes are assumed to have arrived in the order P₁, P2, P3, P4, P5, all at time 0. What is the turnaround time of each process by applying priority scheduling algorithm?

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your answer: () [10]	
The Banker's algoruhm may fail to avoid deadlock if a resource breaks down. Justify	
State whether you agree or disagree with the following claim:	11
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The Direction and the contract of the contract	
give brief example or reason that illustrate a disadvantage in preventing the condition.	
List the conditions that must be present for deadlock to occur and for each condition	10;
Explain in detail about different file allocation methods, [10]	6
¥0	
SATE disk scheduling algorithms?	
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 each of the	
125: The queue of pending requests, in FIFO order, is: 86, 1470, 913, 1774, 948, 1509, 1032, 1750, 130, Starting from the current head ageitten, what is the total distance (in	
currently serving a request at cylinder 143, and the previous request was at cylinder	
Suppose that a disk drive has 5,000 cylinders, numbered 0 to 4999. The drive is	(q
Write about Swap space management.	(B.8
b) Optimal replacement. [5+5]	
a) LRU replacement	
pages will cost one fault each.	
three, four frames? Remember that all frames are initially empty, so your first unique	
How many page faults would occur for the following replacement algorithm, assuming	
1,2,3,4,2,1,5,6,2,1,2,3,6,3,1,2,3,6	
Consider the following page reference strings:	L
ICECI CONTRA TURINA TURINA CONTRA CON	
What is Belady's anomaly? Explain with one example. [5+5]	(Q (22)
Differentiate Internal fragmentation and external fragmentation.	(s.a)