## B.Tech - Odd Sem : Semester in Exam-II Academic Year:2020-2021 19CS2106S - OPERATING SYSTEMS DESIGN - S Set No: 1

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number of page fr							6.5Marks	CC
If the number of page frames is three, how many page faults are generated for the given page trace? 2 1 1 2 2 3 0 3 1 2 0 2 4  Express the reasons for insisting on doing these two actions: (1) test (or load) the content of a memory location and (2) set its value to one using one machine instruction, in order for this instruction to be useful in implementing mutual exclusion. List Locks in xv6.							4.5Marks	C
Given that you can create multiple threads to perform different tasks within a program, explain why you might still need to use fork. List 5 pthread functions.							4.5Marks	СО
What three segments are usually found in the memory allocated to a process? Distinguish between an activation record and a stack frame. What is contained in a stack frame? How long does a stack frame last? Illustrate backtrace and Depict stack frames for a sample C program which call 3 user defined functions and malloc function.							8Marks	CO
Many systems classify library functions as thread-safe or thread-unsafe. What causes a function to be unsafe for use by a multithreaded application? Illustrate the implementation of concurrent linked list that only allows one thread to access any given node at any instant.								СО
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P2	0	1	1	2	2	1				
P3	2	0	0	2	0	1				
P4	3	3	1	4	3	3				
P5	2	1	2	4	2	2	· · · · · ·			

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