	Page No. Date
	Module 3: Process Concurrency
لو	In sportedien - situation in which a runnal
A	Concirrency encompasses issues including -
10286	communication angong processes!
-	shaving and competing for resources
94	shaving and competing for resources Synchronization
	allocation of processor time to process.
20260	in response to changes in other pro-
A	Principles of Concurrency to trovition
Joseph L	The activities of other processes of
27	The way Os handles interrupts
37	Scheduling policies of the Os
mo'rtus	dopends on the relative timing of their ex
*	Aspects of Concurrency Control -
^	The Catical Section - piece of code:
69	Mutual Exclusion to to share code; resources
	or data in such a way that of only one
	process has access to the shared object
40 1	Entat consumo - consistinat fait
	voorstilles stored in shored memory
27	Synchronization - ability of multiple processes to coordinate their activities by the exchange
	to coordinate their activities by the exchange
	of information
	WORLDAY STANIAL JOSEPH 1
37	Deadlock Situation where two or more
J	processes are unable to proceed be cause
	each of the other are waiting for
	each of the other are waiting for others to do something.

Page No. Module 3: Process Concurrency 47 Stanation - situation in which a runnable process is reverlooked by the scheduler, even if its able to proceed, it is never chosen

S] Lielock — situation where two or more

processes continuously change in other processes

in response to changes in other processes

without doing any aseful works. Race Condition situation in which multiple threads on process compete for a shared /common resource and final result depends on the relative timing of their execution. 7) Critical Section - piece of code in ashich the shared resource is accessed or data in such escript that sind one or date 8) Data Coherence - consistency of data or variables stored in shared memory synchronization - obility of multiple processes Classice HiProllens of Concernancy to of information 1 Reader/Writers Problem 27 Producer Consumer Problem 10/ box 0 37 Dining Philosopher Roblem -2022000 each of the other are waiting for other to do something.

	Page No. Date	
	Date	
A	Interprocess Communication (IPC)	
	Coorepating process needs of interprocess communication	7
onito	Coorepating process needs & interprocess communication.	
	1,28,20,000	
-	Two Models of IPCL:50 of 1901	
THE RESERVE OF THE PARTY OF THE	of dated 5 because on no conflicts now	
	Shared Memory Model hobiano	
promi	Also easier to implement than shared in	
	Region of memory that is shared by cooperating	
94	processes is established.	
	Processes can exchange infor by reading and writing data to the shared region	
	Allows max speed & convenience of communication	2
	Faster than message parsing passing	+
	Once established all acrossed are rowline	
	mamory accesses, no assistance from Remolis required.	
	is required.	
		-
	Proces A DALLE SPORANI	
	Lisa members	
	shared (1.19mg)	-
	memory.	
	ProcessB	
	(Vaina)	
	Kernel	

Page No. Date 2] Message Passing Model Communication takes place by means of messages exchanged between cooperating processes. Useful for exchanging smaller amount
of data; because a no conflicts nood to be
avoided.

Also easier to implement than shared memory
in intercomputer communication. Slow process since system calls core one onics ed and kerné sintemention son ProcesonA & 60092 xom Zum/A process Bopozzem nort referr 15 reovined. Mesage Quene A 200019 bowns Kernel. Promon Kemol

of Process Synchronization. Processes can execute concurrently but may be interrupted an at any time, partially completing execution Concurrent access to shared data may pesult result in data in consistency Concurrency is achieved by using multiple processors, cores, threads depending on level of parallelism. Whereas, Synchronization is the coordination of Concurrent tasks to ensure they do not interfere with each other or access shored resources in an inconsistent or unsafe way.