USN					



Internal Assessment Test 3 – August 2022

Sub:	Operating System	Sub Code:	18CS43	Brai	nch:	ISE		
Date:	27/08/2022   Duration: 90 min's   Max Marks: 50					OBE		
	Answer any FIVE FULL Question		MAI			RBT		
1	Explain virtual memory using a neat labeled diagram.  -Virtual Memory is a storage allocation scheme in w addressed as though it were part of the main memory. The reference memory are distinguished from the address identify physical storage sites, and program-general automatically to the corresponding machine addresses.  -Virtual memory can be implemented via:  1. Demand paging 2. Demand segmentation  -Demand paging and Page fault	e addresses a page the memoral ses the ses the memoral ses the ses the memoral ses the	program may users are trans	se to lated	10		CO3	L2
2	Explain contiguous and non-contiguous memory allocation. Contiguous memory allocation is a classical memory allocation assigns consecutive memory blocks (that is, memory block addresses) to a process.  Contiguous memory allocation can be implemented in optwo registers, known as <b>the base and limit registers</b> .  Non-Contiguous Memory Allocation: Non-Contiguous method on the contrary to contiguous allocation methoresent in different locations to the process as per it's rememory space is in a distributed pattern so the freely scattered here and there. This technique of memory allocof memory, which eventually gives rise to Internal and expressions.	cation model.  cks having cor  erating system  s memory allo  od, allocates equirements.  available me eation helps to	ns with the help cation is basica the memory s As all the avai mory space is reduce the was	o of ally a space lable also	10	)	CO3	L2
3	Explain the best fit, first fit and worst fit algorithm in con <b>First-fit</b> : Allocate the <i>first</i> hole that is big enough <b>Best-fit</b> : Allocate the <i>smallest</i> hole that is big enough; mordered by size. Produces the smallest leftover hole <b>Worst-fit</b> : Allocate the <i>largest</i> hole; must also search en leftover hole  First-fit and best-fit better than worst-fit in terms of speed	ust search ent	ire list, unless	t	1(		CO3	
4	Consider the following snapshot of a system:  Allocation Max Available  ABC ABC ABC  Po 010 753 332  P1 200 322  P2 302 902  P3 211 222  P4 002 433  Answer the following questions using Banker's Algorithm  i. What is the content of the matrix need? iii. Write ii. Is the system in a safe state?		ence.		1	0	CO2	L3

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there is an halfall recommend on anomals are being appealing along persons with the help of formers algorithms		

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	INTERNAL FRAGMENTATION	EXTERNAL FRAGMENTATION
Definition	The difference between memory allocated and required space or memory.	The unused spaces formed between non- contiguous memory fragments are too small to serve a new process.
Sized memory	fixed-sized memory blocks.	variable-sized memory blocks.
Happens	When the method or process is larger than the memory.	When the method or process is removed.
Solution of external fragmentation	Best-fit block.	Compaction, paging and segmentation.

Basis	Paging	Segmentation
Division of	The program is divided into	Program is divided into the
program	fixed-size pages in paging.	variable-size partition in
		segmentation.
Speed	Paging is faster than	Segmentation is slower than
	segmentation.	paging.
Fragmentation	Internal fragmentation.	External fragmentation.
Protection	Very difficult to apply for	Easier to apply protection in
	protection in paging.	segmentation.
Handling of	Difficult to handle the data	Segmentation efficiently
data structure	structure.	handles the data structure.
Visibility to	It is not visible to the user.	It is visible to the user.
the user		
Accountability	The operating system is	Complier is accountable
	accountable for paging.	here.
Determining	Hardware determines the	The user determines the
the size	page size.	section size.
Storing the	Page table stores page data.	Section table stores section
type of data		data.
Sharing	Difficult to share the	Easier to share the
	procedures between	procedures between
	processes.	processes.

Faculty Signature CCI Signature HOD Signature