M.C.A. IInd Year Third Semester (CGS)

15519 : Operating Systems : 3 MCA 1

P. Pages : 2 | AV - 3274

Time : Three Hours | Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Describe the three major activities of an O.S. with regard to 8
   i) Memory Management.
   ii) Secondary Storage Management.

   b) Describe briefly the 8 system components of an O.S. 6

OR

2. a) Explain mechanism of process creation and termination. 7

   b) Explain in short user and kernel thread. 4

   c) Differentiate between Batch operating system & time share OS. 3

3. a) Differentiate among short term, medium term and long term scheduling. 8

   b) Explain "Page fault"? Explain the action taken by OS to handle the page fault. 6

OR

4. a) What is process control block? Why is it needed? Describe atleast seven fields in a PCB. 7

   b) What is deadlock? Write the situation that lead deadlock? Explain any two methods for deadlock prevention. 7

5. a) Explain following terms briefly. 7
   i) Segmentation
   ii) Thrashing
   iii) Dynamic Linking.

   b) Differentiate between 6
   i) Internal & external fragmentation.
   ii) Paging and segmentation.

OR

6.	a)	Explain the procedure for handling page fault with aspect to demand paging.	6
	b)	Explain the working of segmentation hardware.	7
7.	a)	Explain file system mouting.	7
	b)	What are different protection approaches to the file? Explain in detail.	6

OR

8.	a)	Explain :	6
		i) Acyclic – graph directory structure.	
		ii) Two – level directory structure.	
	b)	Explain contiguous allocation of disk space.	7
9.	a)	What is DMA? Explain working of DMA transfer with suitable diagram.	7
	b)	Explain I/O Kernel structure list out its function.	6

OR

10.	a)	Explain the working of RAID structure in brief.	6
	b)	Describe briefly various methods of a disk scheduling with merits & demerits of each.	7
11.	a)	Describe Linux virtual file system.	6
	b)	Describe the network structure of Linux briefly.	7

OR

12.	a)	i) Explain proc file system used by Linux.	7
		ii) Explain Kernel Synchronization.	
	b)	Explain components of a Linux system.	6

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