B.E. Fourth Semester (Computer Science Engineering) (C.B.S.)

Operating System Paper - III

P. Pages : 2 **KNT/KW/16/7295**

Time : Three Hours * 0 1 5 3 * Max. Marks :80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain the types of operating system? **7**

b) Explain various services provided by Modern operating system. **6**

OR

2. a) What is mean by system call? How it is used by application program during execution? **6**

b) What is user and system view of operating system? **5**

c) What are disadvantages of Batch processing OS. **2**

3. a) Explain different operations performed on file? **7**

b) Explain different disk space allocation method? **7**

OR

4. a) Suppose that disk drive has 5000 cylinders from 0 to 4999. **12**
The drive is currently serving request at cylinder 143 and previous was at cylinder 125. The pending request in FIFO is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. Starting from current position what is the total distance that disk arm moves to satisfy all the Pending request for each of following disk scheduling algorithms?

1) FCFS
2) SSTF
3) SCAN
4) LOOK
5) C- SCAN
6) C- LOOK

b) Explain single level Directory structure? **2**

5.	a)	Explain different state of process.	**3**
	b)	Write short note on PCB.	**4**
	c)	Explain in Detail inter Process Communication?	**6**

OR

6.	a)	Explain the various multithreading model for thread?	**7**
	b)	Explain different CPU Scheduling algorithms?	**6**
7.	a)	What is address binding? Explain Various types of binding?	**8**
	b)	Consider following page reference string 4 3 2 1 4 3 5 4 3 1 5 Assume frame size = 3. How many page fault would occur for FIFO, optimal & LRU algorithm?	**5**

OR

8.	a)	What is page fault? Explain different steps to handle page fault.	**5**
	b)	Explain the different page table structures?	**8**
9.	a)	What is critical section problem.	**5**
	b)	Explain semaphore and what are the limitation of Semaphore?	**8**

OR

10.	a)	Explain the classical problem of process synchronization.	**7**
	b)	Write short note on monitor?	**6**
11.	a)	Explain Banker's algorithm in detail?	**8**
	b)	What is the difference between ACCESS list & CAPABILITY list?	**6**

OR

12.	a)	Explain following.	
		i) Deadlock system model?	**4**
		ii) Resource allocation graph?	**5**
		iii) Deadlock prevention?	**5**

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