B.TECH DEGREE EXAMINATIONS: NOV / DEC 2010

Fifth Semester

INFORMATION TECHNOLOGY

U07IT504: Operating Systems

Time: Three Hours   **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. Multiprogramming systems _____.

   a) Are easier to develop than single programming systems

   b) Execute each job faster

   c) Execute more jobs in the same time

   d) Are used only on large main frame computers

2. Round robin scheduling is essentially the preemptive version of _____.

   a) FIFO   b) Shortest job first   c) 3 Shortest remaining   d) 4 Longest time first

3. Which is not the state of the process?

   a) Blocked   b) 2 Running   c) Ready   d) Privileged

4. Which of the following will determine your choice of systems software for your computer?

   a) Is the applications software you want to use compatible with it?   b) Is it expensive?

   c) Is it compatible with your hardware?   d) Both 1 and 3

5. A critical section is

   a) a program segment that has not been proved bug-free

   b) a program segment that often causes unexpected system crashes.

   c) a program segment where shared resources are accessed.

   d) none of the above

6. Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called _____

   a) 1 Static loading   b) Dynamic loading   c) Dynamic linking   d) Overlays

7. In the blocked state

   a) the processes waiting for I/O are found

   b) the process which is running is found

   c) the processes waiting for the processor are found

   d) none of the above

8. In which of the storage placement strategies a program is placed in the smallest available hole in the main memory?

   a) best fit   b) first fit   c) worst fit   d) buddy

9. The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by _____.

   a) Editors   b) Compilers   c) System Call   d) Caching

10. If the Disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98, 37, 14, 124, 65, 67.

   a) 310   b) 324   c) 315   d) 321

PART B (10 x 2 = 20 Marks)

11. Differentiate between hard real time system and soft real time system.

12. Name any four system calls used in Unix environment.

13. State the responsibility of medium term scheduler.

14. Define critical section.

15. State the four necessary conditions for deadlock to occur.

16. What is a resource allocation graph?

17. Give one example for Belady's anomaly.

18. What do you mean by Thrashing?

19. What is a partition Control block?

20. Is Linux public domain software? Explain.

PART C (5 x 14 = 70 Marks)

21. a) List the services provided by an OS. Explain how each one provides convenience to the users. Explain in which cases it would be impossible for user level programs to provide these services.

(OR)

  b) Write short notes on

    (i) Multi processor systems   (ii) Distributed Systems   (iii) Clustered Systems.

22. a) Calculate the Average waiting time and average turn around Time for the processes given below using FCFS and SJF CPU scheduling methods.

Process no	Arrival Time	Burst Time
1.	0	8
2.	1	4
3.	2	9
4.	3	5

(OR)

b) Write and explain the monitor solution to the dining – philosopher problem.

23. a) Is the following state safe or unsafe?

Process	Currently Allocated		Max.Need		Resources available	
	R1	R2	R1	R2	R1	R2
P1	7	2	9	5		
P2	1	3	2	6	2	1
P3	1	1	2	2		
P4	3	0	5	0		

(OR)

b) Describe in detail about memory management using Paging

24. a) Write short notes on

   (i) Working sets

   (ii) LRU Page Replacement

(OR)

b) Discuss about File Allocation methods.

25. a) Describe about the various disk Scheduling algorithms

(OR)

b). Explain about the components of the Linux system.

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