Charotar University of Science and Technology [CHARUSAT]

Chandubhai S. Patel Institute of Technology [CSPIT]

Department of Computer Science & Engineering

Question Bank

Subject code	:	CS350	Semester	:	5	Academic Year	:	2022-23
Subject name	:	Operating System						

1.	Define a process. Explain the process state transition with a neat diagram.	5
2.	What is thread and what are the differences between user-level threads and kernel supported threads?	5
3.	Explain the Problem of Critical Section (CSP) through Producer Consumer Problem.	5
4.	Write short note: 1) Semaphores 2) Monitors	5
5.	What is Deadlock? List the conditions that lead to deadlock. How Deadlock can be prevented?	5
6.	Write short note: 1) Direct memory access (DMA) 2) Device controllers	5
7.	What is fragmentation? What is the need of fragmentation? Explain the difference between internal and external fragmentation.	5
8.	Explain the following allocation algorithms: 1) First-fit 2) Best-fit 3) Worst-fit	5
9.	What is Operating System? explain any one types of operating system	3
10.	Explain the features of time sharing system	3
11.	Explain Round Robin algorithm with proper example.	5
12.	Explain context switching.	3
13.	Explain SJF process scheduling algorithm with example	5
14.	Define the following term. 1) Critical Section 2) Waiting Time 3) Race condition	3
15.	What are system calls? What is application programming interface?	3
16.	Briefly describe SCAN	3
17.	Which three are Page Replacement Algorithms? Discuss it in terms of page faults.	3
18.	What is called segmentation? How it differs from paging?	3
19.	What is Paging? What is Page Table? Explain the conversion of Virtual Address to Physical Address in Paging with example.	5
20.	Explain Unix Commands: cat, sort, grep.	3
21.	What is scheduler? Explain queuing diagram representation of process scheduler with figure	5
22.	Consider the following reference string. Calculate the page fault rates for below page replacement algorithm. Assume the memory size is 4 page frame.	5

	1,2,3,4,5,3,4,1,6,7,8,7,8,9,7,8,9,5,4,5,4,2 1. FIFO 2. OPTIMAL	
23.	Consider the following reference string. Calculate the page fault rates for below page replacement algorithm. Assume the memory size is 4 page frame. 1,2,3,4,5,3,4,1,6,7,8,7,8,9,7,8,9,5,4,5,4,2 1. FIFO 2. OPTIMAL	5
24.	Explain Bankers' algorithm to avoid deadlock with any example.	5
25.	Explain the structure of a page table entry. If a machine has 48 bit virtual addresses and 32-bit physical addresses and pages are of 8 KB, how many entries are needed for the page table?	5

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