University of Mumbai
Examination 2020

Program: **Computer Engineering**
Curriculum Scheme: Rev2016
Examination: Second Year Semester IV
Course Code: CSC405 and Course Name: Operating System

Time: 1 hour Max. Marks: 50

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For the students:- All the Questions are compulsory and carry equal marks .

Q1.	The systems which allow only one process execution at a time, are called _____
Option A:	uniprogramming systems
Option B:	uniprocessing systems
Option C:	unitasking system
Option D:	uniOS system
Q2.	What is operating system?
Option A:	a light weight process
Option B:	Is similar to application program
Option C:	link to interface the hardware and application programs
Option D:	a program in execution
Q3.	Consider the process P1, P2, P3, P4 given in the table, arrives for execution in the same order, with arrival time 0 and given burst time. Find the waiting time for Process P3 for FCFS scheduling algorithm. (Note: Write only number)

Process	Burst Time
P1	21
P2	3
P3	6
P4	2

Option A:	20
Option B:	21
Option C:	23
Option D:	24
Q4.	Calculate the average turnaround time for Shortest Job First. All 5 processes are arriving at time 0.

	<table><tr><td>Process</td><td>Burst Time</td></tr><tr><td>P1</td><td>2</td></tr><tr><td>P2</td><td>1</td></tr><tr><td>P3</td><td>8</td></tr><tr><td>P4</td><td>4</td></tr><tr><td>P5</td><td>5</td></tr></table>
Option A:	8.6
Option B:	4.6
Option C:	10.2
Option D:	9.6
Q5.	In one of the methods to impose deadlock prevention, enforce a complete ordering of all types of resources, and demand that each process request resources in an increasing order of enumeration. This violates the deadlock state in
Option A:	Mutual exclusion
Option B:	Hold and Wait
Option C:	Circular Wait
Option D:	No Preemption
Q6.	Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
Option A:	fragmentation
Option B:	paging
Option C:	mapping
Option D:	scheduling
Q7.	Consider the following blocks for memory allocation 100KB, 500KB, 200KB, 300KB, 600KB Process request 212KB, 417KB, 112KB, 426KB Using first fit technique 112KB is put in _____ partition.
Option A:	288KB
Option B:	500KB
Option C:	200KB
Option D:	112KB
Q8.	To avoid the race condition, the number of processes that may be simultaneously inside their critical section is_____
Option A:	0
Option B:	1
Option C:	5
Option D:	10
Q9.	The _____ swaps processes in and out of the memory

Option A:	Memory manager
Option B:	CPU
Option C:	CPU manager
Option D:	User
Q10.	_____ is a unique tag, usually a number identifies the file within the file system.
Option A:	File identifier
Option B:	File name
Option C:	File type
Option D:	File Size
Q11.	Assume that there are 3 page frames which are initially empty. If the page reference string is 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5. Calculate the number of page faults using Optimal page replacement algorithm.
Option A:	10
Option B:	5
Option C:	7
Option D:	12
Q12.	Which of the following processor scheduling algorithms will result in the maximum throughput if a set of n tasks are executed on a uniprocessor machine?
Option A:	Round-Robin
Option B:	Shortest-Job-First
Option C:	Highest-Response-Ratio-Next
Option D:	First-Come-First-Served
Q13.	Which of the following scheduling algorithms is non-preemptive?
Option A:	Round Robin
Option B:	Shortest Job First
Option C:	Multilevel Queue Scheduling
Option D:	Shortest Remaining Time First
Q14.	Which of the following statements are true? A. Shortest remaining time first scheduling may cause starvation B. Preemptive scheduling may cause starvation C. FCFS is better than Round Robin in terms of response time
Option A:	I only
Option B:	II and III only
Option C:	I and II only
Option D:	I, II and III
Q15.	Consider a disk system with 100 cylinders. The requests to access the cylinders occur in following sequence: 20, 7, 4, 34, 10, 18, 76, 2, 13, 6 Assuming that the head is currently at cylinder 50, what is the time taken to satisfy all requests if it takes 1ms to move from one cylinder to adjacent one and shortest seek time first policy is used?
Option A:	120 ms

Option B:	122 ms
Option C:	124 ms
Option D:	126 ms
Q16.	The time taken to move the disk arm to the desired cylinder is called the :
Option A:	Random access time
Option B:	Positioning
Option C:	Seek time
Option D:	Rotational latency
Q17.	Match the following.

Types of System Calls	System Calls
1. Process Control	a. pipe()
2. File Management	b. sleep()
3. Information Maintenance	c. WriteFile()
4. Communication	d. wait()

Option A:	1-b, 2-c, 3-d, 4-a
Option B:	1-d, 2-c, 3-b, 4-a
Option C:	1-d, 2-c, 3-a, 4-b
Option D:	1-a, 2-c, 3-d, 4-b
Q18.	Select all possible conditions under which a deadlock situation may arise?
Option A:	a.Mutual exclusion
Option B:	b.Race
Option C:	c.No pre-emption
Option D:	d.a and c both
Q19.	State which of the following statements about round robin scheduling are correct. i) Round robin scheduling requires time quantum ii) Round robin is same as shortest job scheduling algorithm. iii) Round-robin (RR) is preemptive scheduling algorithms
Option A:	i and ii
Option B:	i and iii
Option C:	only i
Option D:	ii and iii
Q20.	Shared memory Multiprocessor systems are also called as
Option A:	Multitasking operating system
Option B:	Multicore operating system
Option C:	Tightly coupled systems
Option D:	Loosely coupled systems
Q21.	Which of the following is not the criteria of CPU Scheduling?

Option A:	CPU Utilization
Option B:	Throughput
Option C:	Seek Time
Option D:	Turnaround time
Q22.	In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of _____
Option A:	parent process
Option B:	all process
Option C:	init process
Option D:	currently running process
Q23.	Process state is present in _____
Option A:	Process control block
Option B:	Program context box
Option C:	Process context box
Option D:	Program control block
Q24.	Which of the following is the popular tool for Process synchronization
Option A:	Pipeline
Option B:	Thread
Option C:	Socket Programming
Option D:	Semaphore
Q25.	Which is not Operating system's system call categories
Option A:	Process control system call
Option B:	Device management system call
Option C:	Structure management system call
Option D:	File management system call