PRN:		Course Code :	P72PC101

600382

First Year **M. C. A.** Semester End Examination Winter 2024

Principles of Operating Systems

Day and Date: Sat 30 NOV 2024 Max Marks: **50**

Time : 10:30AM To 12:30PM Duration: **02** hrs

Instructions:

1) All questions are compulsory.

Q.1	**Attempt the following.**	Marks	Bloom's Level	CO
a)	Which memory management technique divides memory into fixed-size partitions? A. Paging B. Segmentation C. Swapping D. Fragmentation	01	L1	CO1
b)	The interval from the time of submission of a process to the time of completion is termed as _____ A. waiting time B. turnaround time C. response time D. throughput	01	L1	CO1
c)	Which of the following is NOT a common criterion for scheduling algorithms? A. CPU utilization B. Throughput C. User satisfaction D. Turnaround time	01	L1	CO1
d)	The state of a process is defined by _____ A. the final activity of the process B. the activity just executed by the process C. the activity to next be executed by the process D. the current activity of the process	01	L1	CO1

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e)	Which of the following is an example of a system threat that aims to overload a network or service, making it unavailable to users? A. Phishing attack B. Denial of Service (DoS) attack C. Malware infection D. Privilege escalation	01	L1	CO1
f)	Which of the following best describes a hierarchical directory structure? A. All files are stored in a single level. B. Directories can contain files and other directories, forming a tree-like structure. C. There is no organization; files are randomly placed. D. Directories are flat and contain only subdirectories.	01	L1	CO1
g)	In a file system, what is the purpose of a file control block (FCB)? A. To store the data of the file B. To manage permissions for the file C. To maintain metadata about the file, including its location and size D. To facilitate user interface interactions	01	L1	CO1
h)	What is the primary benefit of using RAID 1? A. Increased storage capacity B. Data mirroring for redundancy C. Faster read and write speeds D. Parity-based error correction	01	L1	CO1
i)	What is the primary purpose of a page table in a virtual memory system? A. To store the actual data of processes B. To map virtual addresses to physical addresses C. To manage CPU scheduling D. To keep track of file system metadata	01	L1	CO1

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	j)	Which of the following is NOT a primary function of an operating system? A. Process management B. Memory management C. Network management D. Word processing	01	L1	CO1
Q.2		**Attempt the following.**			
	a)	What are system calls .Explain different categories of system calls with example	05	L1	CO1
	b)	Define & list of operations in system model?	05	L1	CO1
		OR			
	b)	Explain the different types of operating system	05	L2	CO2
Q.3		**Attempt any two.**			
	a)	Explain the concept of swapping in operating systems. Discuss how background in memory management and process execution.	05	L2	CO2
	b)	Define the structure of a page table in an operating system's memory management system.	05	L1	CO2
	c)	Explain the concept of RAID (Redundant Array of Independent Disks) in computer storage	05	L2	CO2
Q.4		**Attempt any two.**			
	a)	Define key components of file system structure and explain types of file system structures?	05	L1	CO1
	b)	Explain the concept of a directory structure in an operating system's file system.	05	L2	CO2
	c)	Explain the role of disk management in an operating system. Discuss the different tasks involved in disk management.	05	L2	CO2
Q.5		**Attempt any two.**			
	a)	Define the various types of system. Discuss at least three different types of threats?	05	L1	CO1
	b)	Explain in detail Design Principles in Operating Systems	05	L2	CO2
	c)	Explain the roles of memory management and file system in an operating system.	05	L2	CO2

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