M. Sc. DEGREE EXAMINATION, NOVEMBER 2023
INFORMATION TECHNOLOGY
FIRST SEMESTER

COURSE : MAJOR CORE
PAPER : OPERATING SYSTEMS : CONCEPTS AND APPLICATIONS
SUBJECT CODE: 23CS/PC/OC14
TIME : 1 ½ HOURS   MAX. MARKS: 50

Q. No.	SECTION A Answer all the questions (6 X 5 = 30)	CO	KL
1.	a) Recollect the salient features of Unix **(OR)** b) List out the advantages of multiprocessor systems.	CO1	K1
2.	a) Demonstrate the First Come First Serve (FCFS) CPU Scheduling algorithm for the following set of processes Process Burst Time P1 24 P2 3 P3 3 **(OR)** b) Outline the use of semaphores in finding solutions for bounded buffer synchronization problem.	CO2	K2
3.	a) Apply file direct access method in an example system and explain. **(OR)** b) Identify the directory structures that are used to handle the files efficiently.	CO3	K3
4.	a) Make use of the swapping technique in memory management to demonstrate the efficient utilization of available memory. **(OR)** b) Interpret the performance evaluation of demand paging based on effective access time and page fault.	CO3	K3
5.	a) Examine type 1 and 2 hypervisors. **(OR)** b) Inspect the term CIA in a security system.	CO4	K4
6.	a) Analyse the logical and physical memory space. **(OR)** b) Organize the access control list in order to achieve a secured system.	CO4	K4
Q. No.	SECTION B Answer all the questions (2 x 10=20)	CO	KL
7.	a) Make use of the shortest-seek-time-first (SSTF) algorithm in disk scheduling in an example and explain. **(OR)** b) Apply Banker's algorithm to achieve deadlock avoidance.	CO3	K3
8.	a) Explain the following i) Structure of OS ii) Process Control Block . **(OR)** b) Analyze the free space management system in storage management.	CO4	K4

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