CBCS SCHEME

USN | | | | | | | | | |

18MCA25

Second Semester MCA Degree Examination, June/July 2019
Operating Systems

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Explain any two I/O communication techniques with flowchart. **(10 Marks)**

b. Describe in detail about the components of operating system and its responsibilities. **(10 Marks)**

OR

2 a. Classify the types of system calls. How does system call work? Discuss with neat diagram. **(10 Marks)**

b. Explain the following type of OS : i) Real time ii) Clustered system. **(10 Marks)**

Module-2

3 a. Explain the five state process with transition diagram. **(10 Marks)**

b. List the benefits of multithread and explain user level and kernel level threads. **(10 Marks)**

OR

4 a. Consider the following set of processes with given length of CPU burst.

Processes	P_1	P_2	P_3	P_4	P_5
Bursts time	6	2	8	3	4
Arrival time	2	5	1	0	4

Draw Gantt Chart for SJF(Preemptive) and SJF(Non-preemptive). Find the average waiting time, for each scheduling algorithm. **(10 Marks)**

b. What is critical section? Explain reader's writer's problem and write the solution using semaphore. **(10 Marks)**

Module-3

5 a. How can deadlock be prevented? Describe them. **(10 Marks)**

b. What is demand paging? Explain how TLB improves the performance of demand paging with neat diagram. **(10 Marks)**

OR

6 a. Write short notes about : i) Fragmentation ii) Thrashing. **(10 Marks)**

b. Write and explain Banker's algorithm for deadlock avoidance. **(10 Marks)**

Module-4

7 a. Explain various file allocation methods in detail. **(10 Marks)**

b. What are the disk scheduling methods available? Explain any four in detail with example. **(10 Marks)**

OR

8 a. Explain various file operations. **(10 Marks)**

b. Discuss dictionary implementation using : i) Linear list ii) Hash table. **(10 Marks)**

Module-5

9 a. Explain the components of LINUX OS. **(10 Marks)**

b. What are the different file system types in LINUX OS? **(10 Marks)**

OR

10 a. Discuss about the process management in LINUX OS. **(10 Marks)**

b. Define inter process communication and explain how it is handled in LINUX OS. **(10 Marks)**

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