SV - 199

Seat No.	

Total No. of Pages : 2

S.E. (Computer Science and Engineering) (Semester - IV)
(Revised) Examination, May - 2019
Operating Systems - I
Sub. Code : 63534

Day and Date : Wednesday, 22 - 05 - 2019 **Total Marks : 50**

Time : 02.30 p.m. to 04.30 p.m.

Instructions :
1) **Q. No. 3 and Q. No. 6 are compulsory.**
2) **Solve any one from Q.No. 1 and 2 and any one from Q.No.4 and 5.**
3) **Assume suitable data wherever necessary.**

SECTION - I

Q1) a) What is an Operating System? Explain Time sharing operating systems. **[5]**

b) Explain operating system with Monolithic Structure. **[5]**

Q2) a) Draw and explain Queueing-diagram representation of process scheduling. **[4]**

b) Consider the following processes with arrival time, burst time and priority. Calculate average waiting time using Non-preemptive priority scheduling & Preemptive priority scheduling algorithm. **[6]**

Process	Arrival time (in ms)	Burst time (in ms)	Priority
P_1	0	11	2
P_2	2	1	3
P_3	3	4	2
P_4	4	2	1

Q3) Write short notes on (any three) : **[15]**

a) Cooperating processes.

b) Algorithm 3 for two process solutions for critical-section problem.

c) Bounded buffer problem with structure of the producer and consumer process.

d) Multilevel Feedback Queue Scheduling.

P.T.O.

SECTION - II

Q4) a) Explain Banker's algorithm? Write an algorithm for finding out whether or not a system is in safe state. [5]

b) What is a Deadlock? What are the necessary conditions for deadlock? [5]

Q5) a) Explain the concept of segmentation with paging. [4]

b) What are the steps in handling a page fault? How we compute the effective access time for a demand-paged memory. [6]

Q6) Write short notes on (any three) : [15]

a) Resource allocation graph Algorithm for deadlock avoidance.

b) Optimal Page Replacement.

c) I/O Hardware.

d) Files and file operations.