S.Y. CS Sem-III Prin. of operating System

Seat Number: - _____

Duration: 2:30 Hrs **831021123** **Marks:- 75**

Note:- 1) All questions are compulsory.
2) Figures to the right indicate maximum marks.

Q1. Attempt any four (20M)

A. What are the functions of Operation System? CO1R
B. Describe the Computing Environments. CO1R
C. Explain System calls and its Types. CO1R
D. Explain Simple structure, Layered Structure, Microkernel and modules. CO1R
E. Define Process creation and termination CO1R
F. What are Schedulers? CO1R

Q2. Attempt any four (20M)

A. Explain Race condition CO2R
B. Describe Reader Writer Problem. CO2R
C. Explain Peterson's Solution. CO2R
D. What are the types of Scheduling. CO2R
E. Consider the following set of process. Illustrate the Execution of these using FCFS scheduling algorithm. Calculate wait time, Average WT, Turn around time and Average TAT. Also draw the Gantt Chart. CO2U

Process	Arrival Time	Burst Time
P1	1	2
P2	2	4
P3	0	6
P4	3	3

F. Consider the following set of process. Illustrate the execution using Non Primitive Priority scheduling Algorithm. Calculate wait time, Average WT, Turn around time and Average TAT. Also draw the Gantt Chart. CO2U

Process	Arrival Time	Burst Time	Priority
P1	1	2	4(Highest)
P2	2	4	2
P3	3	1	3
P4	0	6	1

Q3. Attempt Any four (20M)

A. Explain Logical Address CO3R
B. Describe Contigious Memory Allocation. CO3R
C. Write Short note on Magnetic Disk and Tapes. CO3R
D. What are the operations that can be performed on a file? CO3R
E. Explain Single Level Directory and Two level Directory. CO3R
F. What is Multiple Level Queues Scheduling? CO3R

Q4. Attempt any five (15M)

A. Consider the following set of process. Illustrate the Execution of these process using SRTF scheduling Algorithm. Draw the Gantt Chart.

Cont.....

Process	Arival Time	Burst Time
P1	2	6
P2	5	2
P3	1	8
P4	0	3
P5	4	4

B. Explain Critical Section. CO2R

C. Explain types of Multithreading models. CO1R

D. Describe swapping. CO3R

E. Define Independent process, cooperating process and shared memory model. CO1R

F. Consider the following set of process using. Illustrate The execution of these process using Round Robin Scheduling Algorithm. Calculate wait time and finish time of each process. Draw the Gantt Chart. Time QUANTUM=4 CO2U

Process	Arrival Time	Burst Time
P1	0	18
P2	0	5
P3	0	3
P4	0	3

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