Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

March 2019

Max. Marks: 20 | **Duration: 1Hr**

Class:FYMCA | **Semester:II**

Course Code:MCA21 | **Branch:MCA**

Name of the Course: Operating System

Instruction:

(1) All questions are compulsary

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1	Illustrate types of system calls OR Classify different OS based on their functions	05	CO1
Q.2 (a)	Demonstrate process state diagram.	05	CO2
Q.2 (b)	Cosider the following set of processes. Draw Gantt chart,Find average waiting time,average turnaround time for Round Robin scheduling algorithm(Time Quantum=03)	05	CO2

Process No	Arrival Time	Burst Time
1	0	5
2	1	3
3	3	6
4	5	1
5	6	4

OR

Consider the following set of processes. Draw Gantt chart,Find average waiting time,average turnaround time for Multilevel feedback queue scheduling algorithm — CO2

Process No	Burst Time
1	53
2	17
3	68
4	24

Queue1 uses RR with TQ=17, Queue2 uses RR with TQ=25 and Queue3 uses FCFS.Priority of Queue is higher than Queue2 and that of Queue2 is higher than Queue3

Q.3	There is a shared resource which should be accessed by multiple processes. There are two types of processes in this context. They are reader and writer. Any number of readers can read from the shared resource simultaneously, but only one writer can write to the shared resource. When a writer is writing data to the resource, no other process can access the resource. A writer cannot write to the resource if there are non zero number of readers accessing the resource at that time.provide solution to this problem.	05	