

Amity University
Amity School of Engineering & Technology
Operating System Minor Examination (Feb 2018)

B.Tech. CSE/ /Evening/3C

Sem: 4

Total Marks: 20

Section A

Note: Attempt any three questions. Each question carries equal marks (5).

Q1. How process is different from program? Explain various states of process with suitable diagram.

Q2. (a) How multiprocessor systems are different from distributed systems. (2)

(b) Discuss pros and cons of various operating system structures. (3)

Q3. Consider the following set of processes with the length of CPU burst time given in millisecond

Process	burst time	Arrival Time
P1	5	5
P2	6	4
P3	7	3
P4	9	1
P5	2	2
P6	3	6

Draw Gantt chart for SJF (Preemption), Round robin scheduling .Take quantum time of 4 milliseconds. Also calculate average waiting time of each.

Q4. (a) Explain system calls by taking suitable example. (2)

(b) Explain context switching. Which scheduling algorithm suffers from starvation? How starvation can be resolved? (3)

Section B (Compulsory Section)

Q5. Consider the following snapshot of a system

	<u>Allocation</u>	<u>Max</u>	<u>Available</u>
	A B C D	A B C D	A B C D
P0	0 0 1 2	0 0 1 2	1 5 2 0
P1	1 0 0 0	1 7 5 0	
P2	1 3 5 4	2 3 5 6	
P3	0 6 3 2	0 6 5 2	
P4	0 0 1 4	0 6 5 6	

Answer the following questions using Banker's algorithm:

a) What is the content of matrix Need?

b) Is the system in a safe state?

(1+4)