LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with'A' Grade & NBA (Under Tier - I),ISO 9001:2015Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.

hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

Course Code: 20CS11

Program/Sem/Sec : II B.tech/IV-sem/A-Sec

Course Name: Operating Systems

Issue Date:14/4/2022

Submission Date: 19-4-22

Problems on Scheduling

Apply Level(K3) -CO2,PO-2,PO-3

1. Consider the following five processes with the arrival times, their length of CPU burst time (milliseconds) and priority value as shown below. Calculate the waiting time, turnaround time, average waiting time and average turn-around time using FCFS, SJF, and Priority scheduling under Non-Pre-emptive scheduling criteria.

Hint: Don't consider priority value for FCFS and SJF

Process Name	CPU-Burst time	Arrival time	Priority Value
P1	6	0	3
P2	2	1	2
P3	4	2	1
P4	3	3	4

Observe the results by considering average waiting time and average turnaround time according and note down in the separate table.

S.No	Name of the Algorithm	Average Waiting Time	Average Turn Around Time

2. Compare and contrast Pre-emptive and Non-preemptive scheduling

3. Write the algorithms steps for implementation of priority scheduling and identify the problems associated with this scheduling and solution.

Complex Level-CO2,PO2,PO3,PO4

1. Consider the following four processes with arrival times (in milliseconds) and their length of CPU bursts (in milliseconds) as shown below:

Process	P0	P1	P2	P3	P4
Arrival time	0	1	2	3	6
CPU burst time	2	6	4	9	Y

These processes are run on a single processor using first come first serve scheduling algorithm. If the average waiting time of the processes is 6.2 millisecond, then the **value of Y is_____.**

Note: *Write the procedure of FCFS scheduling ,calculate the waiting time, turnaround time, and then average waiting time and average turn around time. Draw the gant-chart for the process completion time slot and Discuss different ways (formulas) to calculate the waiting time and turn around the time and justify the results are same for the all formulas.

2. Consider the set of 5 processes whose arrival time and burst time are given below-and calculate the waiting time and turnaround time of each process and draw the gant chart for the procedure use the black box for the CPU if it is idle (Not executing any process due to the no process is in the ready queue)

Process Id	**Arriva time**	**Burst tim**
P1	3	6
P2	5	8
P3	0	2
P4	6	5
P5	4	3

Problem 3: Consider the set of 6 processes whose arrival time and burst time are given below-

Process Id	**Arriva time**	**Burst time**
J1	0	5
J2	1	3
J3	2	5
J4	3	4
J5	4	3
J6	5	6

If the CPU scheduling policy is FCFS and there is 1 unit of overhead in scheduling the processes, find the efficiency of the algorithm.

Instructions to the Students

1. Maintain the separate note book for OS Assignment.
2. Write the Assignment by your own by studying the text books and online materials
3. If the same type of content is submitted by I can follow first come first evaluate criteria.
4. In the given assignments you need to carefully study the questions and then solve.
5. Last date of assignment submission:19-4-22