IIT Guwahati - Department of Computer Science & Engineering

CS343-Operating Systems- Quiz#1 [26.08.2021]

Consider 4 processes P, Q, R, and S to be scheduled on a processor using round robin CPU scheduling having a time quantum of 5 units. All 4 processes arrive at time T=0 in the order P, Q, R, and S. While applying round robin scheduling, there is exactly one context switch from P to Q, exactly one context switch from P to S and no context switch from P to R. There are exactly 2 context switches from S to P. Switching from a terminated process to a process in ready queue is also counted as context switching. CPU burst of each process is a positive integer value less than or equal to 15 units.

(a) What should be the CPU burst time of each individual process if the average turnaround is as low as possible? Draw a neat labelled Gantt chart showing the scheduling order and turnaround time calculation.

(b) What should be the CPU burst time of each individual process if average turnaround is as high as possible? Draw a neat labelled Gantt chart showing the scheduling order and turnaround time calculation.

Solve the question in 1 single side sheet using pen and upload the scanned copy in the Teams.