**Institute of Computer Technology**

**B. Tech Computer Science and Engineering**

**Sub: Operating Systems**

**Practical 2B: CPU Scheduling Algorithms**

**Write a C program to simulate multi-level queue scheduling algorithm considering the following scenario. All the processes in the system are divided into two categories – system processes and user processes. System processes are to be given higher priority than user processes. Use FCFS scheduling for the processes in each queue.**

**CODE:**

def multilevelcompletiontime(data):

data = sorted(data, key=lambda x: x['AT'])

sys\_queue = []

user\_queue = []

pcounter = 0

completed = []

time = 0

totalp = len(data)

while pcounter != totalp:

for x in data.copy():

if x['AT'] <= time:

if x['PID'][-1] == 'S':

sys\_queue.append(x)

else:

user\_queue.append(x)

data.remove(x)

if len(sys\_queue):

d = sys\_queue.pop(0)

time = time + d['BT']

d['CT'] = time

completed.append(d)

pcounter += 1

elif len(user\_queue):

d = user\_queue.pop(0)

time = time+ d['BT']

d['CT'] = time

completed.append(d)

pcounter += 1

else:

time+=1

return completed

import cpuscheduling as cs

data = cs.readdata()

data = cs.multilevelcompletiontime(data)

cs.turnaroundtime(data)

cs.waitingtime(data)

cs.displaytable(data)

**OUTPUT:**

