Silicon University

SIC No.-

Duration: 01:30   Total No. of Pages:-02   Full Marks: 25

1 Answer All

a What is the difference between trap and interrupt? 1

b Differentiate between multiprogramming and timesharing systems. 1

c Differentiate between Application software and system software. 1

d Differentiate between Cooperative and Independent processes. 1

e What is short term schedulers and long term scheduler? 1

f Justify why context switching is an overhead for an OS. 1

2 Answer All

a Explain about Operating System's dual mode of operation. With a suitable figure explain how the mode changes. 3

b Consider the following set of jobs. What would be the average turnaround time if FCFS scheduling policy is used? Show the Gantt chart and all calculations. 3

Process	Arrival Time	Duration
A	0	12
B	3	7
C	6	2
D	8	5
E	9	2
F	12	12

c Consider the following set of jobs. What would be the average turnaround time if a shortest-remaining-time-first scheduling policy is used? Show the Gantt chart and all calculations. 3

Process	Arrival Time	Duration
A	0	12
B	3	7
C	6	2
D	8	5
E	9	2
F	12	12

3 Answer any One

a What is an operating system? Explain the different services provided by an operating system. 5

b Explain how mult-tasking, multi-programming and multi-processing systems are different from each other. Also, discuss the advantages and disadvantages of those systems. 5

PTO

4 Answer any One

a Define a process. What is the relationship between a process and a PCB? With a neat block diagram explain the various state of a process.   5

b Consider the following set of processes, with CPU burst time is given in milliseconds. Draw the Gantt Charts and determine the average waiting time and turnaround time separately using FCFS, SRTF, and RR scheduling algorithms. Consider the time slice for RR is 2ms.   5

Process	CPU Burst Time	Arrival Time
P1	4	0
P2	2	2
P3	4	3
P4	1	5
P5	3	6